Fostering Investment in Cross-Border Energy Infrastructure in Europe

Report of the High-Level Group on Energy Infrastructure in Europe

April 2016
Preface

In order to achieve EU energy and climate objectives, sustained investments will be required across the energy value chain, including power generation, gas pipelines, electricity transmission grids as well as distribution grids. A strong case can be made for fostering cross-border energy interconnections in the European Union. The European Commission estimated that over €1 trillion has to be invested in the energy sector by 2020, with €200 billion for transmission grids and gas pipelines alone.

Through its Energy Union agenda, the European Commission has proven its willingness and determination to obtain concrete results in this domain.

At a time when the European construction stands at a critical point of its history and when despite historically low interest rates, a staggering economic growth needs to be sustained by a rise in productive investment, facilitating the kick-off of more projects in energy transmission infrastructure could bring a significant contribution to moving the European Union forward.

The energy sector is a major area where the EU can have a strong impact, not only on competitiveness, but also on security and environmental sustainability. In particular, improving cross-border interconnections for gas and electricity would be a major step towards more integrated energy markets.

It cannot be denied that there is a rising gap between the increasing need for energy infrastructure projects in Europe and the limited amount of bankable projects, despite ultra-low interest rates and ample liquidity. Among the many factors that explain the difficulty to launch more projects, the most visible are the low level of energy policy integration and the disparities between the regulations and policies among member states, the mismatch between the long-term perspective of investors and the short-term economic and political cycles, the low visibility not only on market evolutions due to the volatility of commodity prices and the rapid pace of technological change (renewables, storage, energy efficiency…), but also on the potential impact of climate change. One should add the absence of a consistent electricity market design in a context where demand for electricity has decreased in Europe due to a combination of energy efficiency, deindustrialisation and low growth of the population. This phenomenon along with a larger than expected deployment of renewables together with the depressed price of coal and low CO₂ price, have led to the current situation of low wholesale prices (€20-30/MWh) and the lack of any meaningful long-term price signal.

On the financial side, we have to overcome a mismatch between the supply of high-risk/high-return assets and low-risk/low-return demand by institutional investors. The problem boils down devising a way to make a large asset class of energy transmission infrastructure accessible to a vast number of investors (insurance companies, pension funds, asset managers…).

One must acknowledge that the Energy Union and the Capital Markets Union, especially in combination, hold the promise to overcome many infrastructure investment barriers.

The prospects in terms of investment should differentiate between gas and electricity: when considering a full RES electrification, substantial investment would be needed for electricity. At the same time, gas supplies are due to increase given the significant reduction of domestic resources, therefore stimulating the need for a more resilient system for managing flow diversity with respect to the historical trends. It should be pointed out, however, that a more balanced and achievable decarbonisation path fully exploiting the existing gas infrastructure (both pipelines and power generations) could lead to more limited (but nonetheless critical) investment needs, especially for selected interconnection infrastructures.
That being said, this compelling need for more energy infrastructure should not lead to investment in projects with a questionable economic rationale. In order to strike the right balance, private investors have therefore to play a key role in opportunity assessment and be involved in project funding at an early stage.

Achieving a fully integrated and harmonised European market in a short period of time for electricity and gas, which rely on different constraints and drivers, is not a realistic objective given the discrepancies in political interests, regulations, energy mixes and investment capabilities among member states. In a second-best approach, however, major steps could be achieved both at the European and regional levels to move towards a more integrated and efficient model that could generate significant benefits and contribute to strengthening the European Union.

In the spring of 2015, I took the initiative to create a High Level Group of experienced Europeans coming mainly from the energy and the financial private sectors in order to survey the roadblocks to cross-border energy infrastructure and to make proposals to the European Commission with a view to improving the environment for these investments. Although the European Commission has not officially commissioned this report and bears no responsibility whatsoever for its text or its proposals, we have been fortunate to benefit from its support through Gerassimos Thomas, the Deputy Director General for Energy, and to participate in a roundtable organised and chaired by Dominique Ristori, its Director General, involving members of the High-Level Group or their representatives and the cabinets of Vice-President Maroš Šefčovič, Vice-President Jyrki Katainen and Commissioner Miguel Arias Cañete.

Each member of the Group was assisted by a Sherpa who participated in this project. Each was personally interviewed and could therefore present his or her views and make proposals, many of which are contained in this report. And I personally had the opportunity to meet Vice-President Jyrki Katainen and Commissioner Miguel Arias Cañete.

This report was written with the pro bono assistance of CEPS under the stewardship of Daniel Gros, and of Thomas Sutter (A.T. Kearney France). It encompasses many of the analyses and suggestions put forward by the members of the Group. Most of them are convergent, but there were sometimes differences. I therefore am solely responsible for its contents of this report and hope that it will bring a positive contribution to this important issue.

Above all, let me warmly thank all those who kindly provided their valuable inputs to this work, the members of the High-Level Group and their Sherpas.

Edmond Alphandéry
Paris, April 2016

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Introduction

Any long-term framework for energy infrastructure needs to be embedded in the post COP21 regime. Most energy infrastructure consists of long-lasting assets with a working life of over 30 years. This implies that projects with a final investment decision today (and thus, with a favourable permitting and authorisation framework, in operation in the early 2020s) need to be subject to frequent analysis, taking into account the path even beyond 2050.¹

This is a daunting task indeed. The pledges for 2050 require not only decarbonising power, but also decarbonising transport, heating and other sectors. It is evident how this extensive decarbonisation will be implemented today, as the outcome will depend on a complicated interplay between technology and political choices. In this respect, it is important to leverage to the fullest the potential provided by existing investment stocks in order to achieve effective results in the short and medium term and not only in the long run.

The challenges in mapping out the decarbonisation path towards 2050 are not new. But the Paris Agreement creates further urgency for the EU to provide investors with a credible policy framework under which the EU's own goals can be achieved.

While there is still considerable uncertainty, most scenarios imply that more power will likely be needed at the end of the process. However, the time path to 2050 is not linear. Many scenarios imply that until about 2030 power demand should stagnate if the EU is to reach its targets for that date. The pattern for natural gas seems to be the opposite: usage of gas might at first increase if it replaces coal (which is not a given in this depressed CO₂ pricing environment, as discussed in point 1-3) and it could further augment its penetration in new sectors (e.g. transportation) or through using ‘green’ gas (biomethane) in the power sector. Development of carbon capture and storage (CCS) can also be seen as a means to further use natural gas in the medium term.

The long-term backdrop to energy infrastructure investment is thus not encouraging at first sight. Demand in the power sector might remain stagnant or even decline for the next decade or so. In the gas sector the near-term projects are more positive – and notably driven by a persisting need of imports. The long term forecasts are subject to stronger uncertainties. If the 2050 goals imply a clear reduction in demand, the political support and the regulatory framework (shale gas, support for biogas, new uses, etc.) will be key in shaping future trends.

The free flow of energy across national borders is a key enabler to create a single market. More inter-connection capacity will therefore be needed, both across countries and across regions within countries. But with some remarkable exceptions, little seems to be happening on the ground.

This report precisely intends to analyse the main roadblocks to these cross-border energy infrastructure investments and to suggest ways to enhance the environment in which they can develop.

The report focuses on five points: 1) the need for a better integrated European market; 2) the role that could be played by the European authorities to improve the environment for cross-border investments in energy infrastructure; 3) initiatives to take at the regional level to help remove local roadblocks to these projects; 4) proposed ways to reduce risks and make them more attractive to investors and last but not least 5) the design of financing schemes that could enhance private investors’ appetite for these kinds of assets.

¹ This introduction is drawn from a draft paper prepared by CEPS for this report.
1- More integrated European energy markets are essential to foster cross-border investments in energy infrastructure; this move could be driven by a strong and coherent carbon price signal.

1-1 Heterogeneous national policies generate distortions and uncertainty in the market, reducing the attractiveness of cross-border infrastructural investments.

The incomplete application and development of a common energy policy across the EU member states leads to sub-optimal situations at a European level. Uncoordinated support schemes to renewables have created distortions and uncertainty in electricity power markets. Similarly, the lack of market integration entails sub-optimal investments in gas, as is evident with LNG terminals, which are broadly underutilised.

Notwithstanding the commitment to create a single EU energy market, many reasons come to mind to explain this low level of integration. Governments want to stay in control of their national regulations and differences among member states in terms of the reliability of long-run policies, are powerful obstacles to cross-border infrastructural investments. Beyond inter-country differences, the complexity of regulations within a country may also deter investors.

Furthermore, the reality is that most companies are nation-based and there is only a small number of truly European companies in the energy sector.

1-2 Yet there is a real common interest in improving interconnections both in the gas and electricity sectors as it would improve security of supply and enhance competitiveness and sustainability across Europe.

The growing need for gas imports highlights the need for selected new gas pipelines and increased interconnectivity within the EU market. Consumption trends of gas in Europe are to be coupled with import requirements, which are bound to grow as the European production is declining (e.g. Groningen gas fields in the Netherlands, North Sea gas fields). In order to enhance its security, the European Union is successfully promoting the development of the Southern Corridor coming from Azerbaijan and is considering ways to attract LNG flows from several sources of the world (e.g. from the US), which will have to take into account not only market interests but also geopolitical parameters. These new flow patterns will therefore require a better internal connectivity and flexibility to accommodate supply and demand requirements.

Better integration of electricity and gas markets, whose current fragmentation can be seen through price discrepancies, should enhance competitiveness in many parts of the European Union.

HLG members stressed that the Energy Union in the EU should differentiate gas from electricity, with the former able to deliver immediate contributions to both integration and decarbonisation. Cross-border gas interconnections should be high on the list of projects to do as the issues there are in general less problematic. A common vision of targeted gas infrastructure in Europe should rapidly be put into practice in order to focus on removing distribution inefficiencies and to stimulate the necessary investments.

As for electricity, better integration will rely on a better functioning of the markets where the price should reflect for all countries concerned the real cost, which includes negative externalities created by power generation. This electricity integration has a relevant price: the objective of the European Commission of having a minimum of 10% electricity interconnection by 2020 represents an envelope of €100 billion. Furthermore the ongoing movement towards an increase of decentralised power production requires the
adaptation of the networks to the energy transition. Some 95% of renewable energy transits through the distribution networks, which have to adjust to this intermittent and less predictable flow of energy. In 2011, the European Commission estimated that by 2020, nearly €400 billion should be invested in distribution networks of gas and electricity, compared to €200 billion for transportation infrastructure.

1-3 **Reaching a strong carbon price within a more integrated electricity market is essential to foster investments.**

A well-functioning emissions trading scheme (ETS) aimed at reaching a carbon price that gives a long-term signal to investors and leads to a progressive creation of a level playing-field in European energy markets (as well as encouraging investment in lower carbon emissions infrastructure), would represent a major step towards better integrated and more environmentally friendly energy markets.²

A carbon price defined according to market-based mechanisms at a level consistent with the right incentives to be given to producers and consumers, would play a key role in the energy transition towards a low-carbon economy in a better integrated Energy Union. Accordingly, creation of such a carbon price would lead to a right levels of consumption and investment in energy production, distribution and transportation.

The flaw of the current European cap & trade system is well known: the price of carbon due to the change in demand of emissions allowances depends largely on the evolution of economic activity and allocation mechanisms, while the supply remains unchanged. The price of carbon was €30/tonne in 2008 and went down to less than €3/tonne in 2013, and it is still now at around €5. Since indirect demand for carbon is based on long-run behaviour, investors in long-run infrastructure need visibility on future prices.

The current price of carbon in Europe does not play the role of a good signal. The set-up of a Market Stability Reserve (MSR), to be implemented in 2019 in Europe, was a major step in the right direction. It intends to remove some amount of the volume of emissions allowances in over-supply in order to re-balance the market between supply and demand. The current ETS system, based on quantities, has worked according to design, but it has not been able to steer prices in a satisfactory way to drive low-carbon investments in the energy sector. To reach the political objectives in renewable energy, energy efficiency and decarbonisation of the economy, it might be time to make a paradigm shift towards a price-based system. Hence, the proposal to change the basic principles of operation of the MSR, based on volume, to a price-based system. It would then remain to be decided which level for the price of carbon as well as its path over time. The main objective should be to give long-run visibility to the price of carbon which could be obtained through a predictable floor level whose evolution over time would be planned long in advance (e.g. inflation + X% per annum). In this regard, the simplest solution would be to implement a price floor through an auction reserve price, while at the same time tightening the supply of allowances through a lowered cap.

This is not an easy task. The UK for example introduced a carbon price floor supposed to be rising to £30 in 2020 and to £70 in 2030. In fact, its level has been capped at £18 for 2019-20. We therefore probably need to set-up of an independent entity at the European level in charge of monitoring the carbon market and that would be responsible for deciding the volume of emissions allowances available, with the mandate of adjusting the supply of emissions allowances to its demand so that the expected floor of the carbon price is respected over time. The implementation of this scheme should go hand-in-hand with the progressive

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redesign of subsidies\textsuperscript{3} to renewables in order to remove market distortions, while still fostering competition and enhancing R&D.

Needless to say, this ambitious reform would have positive effects in properly defining the most efficient market instruments to achieve the climate targets set at EU level. It would also foster the appropriate investments in removing national and cross-border bottlenecks and stimulate a correct market functioning, both in terms of wholesale and retail energy prices.

\textbf{2- In order to drive investments towards a common European vision, European authorities should prioritise strategic projects, oversee their design and contribute to their funding.}

\textbf{2-1 The European Commission has launched valuable initiatives that already contribute to improving the environment for investments in cross-border infrastructure projects.}

There are strong political underpinnings in the action of the European authorities for fostering cross-border energy infrastructure. The EU’s Energy Union strategy consists of five dimensions: security of supply, integrated energy markets, reduction in carbon emissions to fight global warming, energy efficiency and research and innovation. Among them, at least the first three are related to the objective of enhancing cross-border transportation of energy. The role of the European Commission, through its involvement in the choice, the design and the funding of the projects, is therefore central to ensuring that Europe has “secure, affordable and climate-friendly energy”.

To foster cross-border investment in energy infrastructure, the European Commission policy has put in place several tools, discussed in the following subsections.

\textbf{2-1.1 Projects of common interest (PCI)}

The concept of Projects of Common Interest (PCI) resides at the heart of the current EU strategy designed to achieve the internal energy market. The initial list published in 2013 contained 248 projects, including 52 electricity interconnections, and the new updated list from November 2015, now includes 195 projects. However, “only” 13 projects from the 248 initial ones have been completed so far.

To qualify as a PCI, a project in cross-border energy investment has to: (i) have a significant impact on the energy markets of at least two EU countries by, for instance, contributing to the integration of their networks, (ii) increase competition in energy markets by offering alternatives to consumers, (iii) enhance the EU’s security of supply by allowing countries to receive energy from a greater number of sources and (iv) contribute to the EU’s energy and climate goals, for example by facilitating the integration of renewable energy into the grid.

For any project, the main advantages of the PCI label consist of: (i) accelerated planning and permit granting procedures, including a binding three-and-a-half-years’ time limit for the granting of a permit; (ii) a single national authority to deal with obtaining permits; (iii) streamlining of environmental assessment procedures, and (iv) the possibility of receiving financial support under the Connecting Europe Facility (CEF) which has

\textsuperscript{3} Which have to take into account less-advanced RES technologies for which R&D will still be required.
proven to be an important and rapid instrument, with around 50 projects (50/50 split between gas and electricity) receiving funds between 2014 and 2015.

These benefits are essential; they should be preserved and strengthened in any future revision of the PCI process.

2-1.2 The European Fund for Strategic Investments (EFSI)

Since the global economic and financial crisis, the EU has been suffering from low levels of investment. The Investment Plan for Europe adopted in November 2014 aims to bring investment back in line with its historical trends, by mobilising at least €315 billion over a three-year period (starting with the entry into force of the EFSI Regulation in July 2015).

In order to help mobilise private investment, the European Fund for Strategic Investments (EFSI) was created in cooperation and within the European Investment Bank Group; it became operational in July 2015. Mobilisation of private capital is a key feature of the EFSI. It currently represents about 80% of the total expected investment value. Investible private cross-border energy infrastructure projects are eligible to receive funds from the EFSI. It is estimated that by the end of February 2016, the EFSI had triggered around €60 billion of investments in Europe.

2-1.3 The Connecting Europe Facility (CEF)

The Connecting Europe Facility (CEF) Regulation determines the conditions, methods and procedures for providing Union financial assistance to trans-European networks in order to support Projects of Common Interest in the sectors of transport, telecommunications and energy infrastructures. Its financial assistance is made of grants managed by the Innovation and Networks Executive Agency (INEA), which functions under the umbrella of the European Commission, and of innovative financial instruments, the implementation of which was entrusted to the European Investment Bank (EIB); it provides funding to PCIs in the energy sector (on top of transport and ICT projects).

To date, in the three calls organised since 2014, over €1 billion was awarded in grants to PCIs for studies and works across the EU.

According to the European Commission:

Under the first CEF Energy call for proposals in 2015, €149 million was allocated to PCIs and 20 proposals were selected to receive grants for studies or works. Of those, 11 are in the gas sector and 9 in the electricity sector. The bulk of the support goes to projects in Central Eastern and South Eastern Europe as well as in the Baltic region. Under the second CEF Energy call for proposals in 2015, €217 million was allocated to PCIs and 15 projects out of 24 eligible applications were selected. Of those, nine are in the gas sector and six in the electricity sector.

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4 See https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest
These initiatives could be further leveraged.\(^5\)

**2-2.1 The heart of the issue**

The useful concept of Projects of Common Interest should be enhanced with the objective of boosting delivery capacity on the public sector side.

Such “public sector delivery capacity” is critical to help investors consider these projects as credible and investable in a reasonable timeframe and as a consequence to allocate resources to support the funding of these projects.

Otherwise, the current EU framework leaves open the economic and legal structuring of each project, which is subject to national regulations, decisions from private promoters (e.g. grid operators) as well as involved public entities (i.e. national regulators, anti-trust/state aid authorities, administrative courts decisions, etc.). Such fragmentation of the “economic design” of interconnectors across Europe has major implications for institutional investors.

For example, a given interconnector can have strong infrastructure-investment features (i.e. offering stable and predictable cash flows) if developed, say, under a 20-year contractual arrangement offering clear visibility on revenues. On the other hand, it could be a highly speculative asset if for instance its revenues are fully dependent on market prices (and driven typically by highly volatile spreads between the wholesale prices in the two interconnected countries). While the former will be clearly eligible to be considered in the infrastructure asset class by most institutional investors (including from as early as the construction phase), the latter will be considered, at best, as eligible for an “exotic” bucket which will drastically limit amounts, if any, made available to fund such investments.

Even schemes inspired by the regulated asset base (RAB) (see point 4 below), which is nowadays rather standard for the grids across Europe, may create issues for the funding of interconnectors. Under such schemes, remuneration of the capital invested is subject to changes over the life of the asset. For a given project with a long-term but finite life, whose funding conditions are set from its inception (as is typical in the case of an interconnector), a change in the conditions of remuneration, decided for instance by the regulator on a discretionary basis, is more difficult to justify. The corresponding uncertainty for the investor increases the required risk premium, and perhaps even acts as a deterrent for investment, at the expense of end users.\(^6\)

In other words, the scale-up of institutional finance for Energy Union-related infrastructural projects will require the unification of the economic schemes set up to fund such projects so that the interconnectors can be clearly identified as constituting a sizable “infrastructure sub-asset class”.

**2-2.2 An EU-led framework for the development and funding of strategic interconnectors**

The European Commission is rightly entitled to support in the development of projects of European interest. As mentioned, this is today partly factored in the PCI procedure, but it could be envisaged to strengthen such role on the delivery side and expand it to the “economic design” of these projects. A European Infrastructure entity could be set up, on a similar model as the National Infrastructure Commission in the

\(^5\) This 2-2 session is taken from Thierry Déau and Julien Touati, “A long-term investment framework to support the Energy Union”, a paper prepared for the High-Level Group on Energy Infrastructure in Europe, 6 January 2016.

UK, in order to ensure that initiatives launched by the European Commission are fully in line and systematic identification of alternative projects aiming to the same ends has been undertaken. It could be involved in project prioritisation and in the design of the most important projects on the PCI list.

As an example of a framework to be adopted, a High-Level Group member suggested the following architecture:

- The European Commission and the member states would agree, using for instance the same procedure that is in place to establish the PCI list, on strategic projects that would benefit from a high level of priority as awarded by relevant EU institutions. Selected projects would enter into a new Energy Union Delivery Process’ (EUDP).

- The eligibility of a PCI project to the EUDP would be subject to a thorough and independent socio-economic assessment of the selected project within a transparent cost-benefit analysis. Such assessment would trigger the automatic eligibility for EU funding, serving as an incentive for member states to cooperate in the delivery of the project.

- After such a ‘dual’ political and technical selection process, the European Commission would be given the lead in formulating the ‘economic design’ of the project. Such leadership could be implemented by the Innovation and Networks Executive Agency (INEA).

- The general principles of such architecture would be common to all EUDP-eligible projects:
  
  o Revenues over the duration of the contract would be determined through a contractual arrangement. This would offer visibility to investors with transparent and well-defined adjustment mechanisms over the whole life of the project.
  
  o The payments to the interconnector project company would be backed by tariff contributions from the end consumers of each impacted market. Such tariff contributions would be set by a Procuring Agency (see 3-3-2-2) in coordination with the national energy regulators under the oversight and leadership of the Agency for the Cooperation of Energy Regulators (ACER) (see below 3-3).
  
  o Enforcement of the contract would be ensured by transparent arbitration mechanisms. The ACER could serve as a common ‘first-level EU arbitrator’ with recourse to international arbitration under ICC rules made possible in the last resort.

2- 3 Launching highly visible and useful projects for European citizens

The Projects of Common Interest list defined by the EU contains a set of projects that are mostly defined in a ‘bottom-up’ process by the member states. Investing in cross-border energy projects is a good opportunity to show to European citizens concrete action from the EU for the common good of all Europeans. The European authorities should choose a few PCIs that have a real visibility and prove their usefulness in the everyday life of people across the Union.

In this respect, one member of the High-Level Group suggests to invest in the promotion of electric mobility to make the transition to clean vehicles, alongside other promising technologies (natural gas, hydrogen). This project lies in the periphery of cross-border energy infrastructure *per se*. But the European Commission has set as a priority that the EU becomes a leader in the field of energy-efficient transport, and PCI could
be proactively used by the Commission to achieve this ambition. This should be a key topic of discussion during the first semester of 2016 with the EU, the member states, the regulators and the private sector.

As a flagship project, the European Commission could support (and fund through the EFSI) the development of charging station infrastructures positioned on the main road corridor for innovative mobility across Europe. Some countries have paved the way for this (e.g. gas/electricity/hydrogen in Belgium; electricity across France, Spain and Portugal; electric corridors for trucks project in Germany), but a European-wide project would have the clear advantage of bringing strong visibility and concrete results in a field that has generated high expectations from the public.7

3- Local roadblocks to cross-border projects could be lifted through strengthened regional approaches supported by the European Commission.

3- 1 At the local level, technical roadblocks and insufficient public acceptance often hinder the development of cross-border infrastructure.

3- 1.1 Technical roadblocks in business plan assessment

In the current context of national regulations, developing a unified position between the countries involved in cross-border projects with regard to the split of investments, costs and benefits is a challenging task.

For example, each regulator may set a specific tariff scheme for the part of a cross-border line located on its national territory, which makes it difficult for investors to elaborate a business plan and a judgement on the projected economics of the line.

As set out in Article 12 of TEN-E, it is the regulators who take a decision on a proposed cross-border cost allocation put forward by the project promoters. It leaves competencies to decide with the actors who are closest to the projects and are the most knowledgeable about the situation "on the ground". It is common to encounter different views about future developments, and the process of the cross-border cost allocation decision pursuant to Article 12 of 347/2013 aims to solve these diverging views: giving the promoters the chance to propose a solution after consulting other concerned TSOs, giving regulators the chance to build upon that, request additional information and decide jointly – or if they can’t, to hand the case over to ACER and await their decision, which is binding on the regulators and project promoters.

In this regard the main task of the European Commission would be to make sure that the procedures are implemented in due time and to reinforce the role of ACER so that a unified business plan could be developed with a clear visibility on projected cash flows for the potential investors.

3- 1.2 Insufficient public acceptance

Some environmental concerns often result in a low level of public acceptance for new lines blocking the development of projects.

Among these concerns are in particular the following: the line crosses a natural area, which triggers some protests from the population and ecological associations; the line is built close to populated areas where

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people refuse to have a transmission line in their neighbourhood; some customers want to use electricity from renewable sources only, which puts constraints on interconnection projects.

The lack of public acceptance is all the greater when the benefits of a new line are not very significant for the countries that are connected and finance the investment. In some cases indeed, benefits mainly materialise in third-party countries that become better connected to the energy system through the project.

As a result, the granting of land permits to build power lines is a major challenge and some countries that had taken the initiative to install power lines have decided to terminate or postpone projects.

In this context, there is a substantial need to accelerate procedures so that the most important projects at European level do not stall.

It is easy to underestimate the importance of environmental and social constraints. These are nevertheless very real, and a fine balance must be struck between local, national and international interests, supported through a streamlined administrative process.

3-2 **Leveraging an ombudsman may help accelerate and create some accountability for the delivery of critical projects**

An early involvement of the public through public forums and dialogue formats can foster public acceptance for infrastructure projects.

When it comes to critical projects, a recognised personality named in agreement between the different stakeholders can sometimes help accelerate the project delivery. This scheme has been successfully used in the past. For example, the development of a high-voltage interconnector between France and Spain was coordinated by Mario Monti, whose involvement enabled, after 15 years of stall, the launch of the project in 2008, which went into operation in October 2015.

This scheme could be used more systematically for key projects when a specific issue is identified such as problems with permitting or conflicts around the cost-sharing of the projects. A representative of the European Commission may play that role and be accountable for the progress of a given project. That being said, member states’ political will to push projects forward will always remain a prerequisite.

3-3 **Beyond this, a better coordination at regional level supported by the European Commission helps develop a unified view on key projects.**

3-3.1 **Cross-border projects should be developed within a regional approach supported by strong political will.**

The Baltic area provides a good case of successful cross-border cooperation. There had initially been a push from the European Union which resulted in signing in 2009 a Memorandum of Understanding and an Action Plan, with eight member states in the Baltic Sea region which took over and signed an agreement. Since then, several infrastructural projects have been or are in the process of being implemented to connect the Baltic States and Finland to the Central European electricity and gas grids, and to enhance interconnection capacity between the Baltic States. This includes completed electricity interconnections Lithuania – Sweden (NordBalt; enabling the Baltic States to join the NordPool electricity market), and Lithuania - Poland (LitPol Link), as well as constructed gas pipeline Klaipeda – Kiemena (Lithuania) and a recent agreement on developing by 2020 a gas interconnector Poland – Lithuania, which will bring an end to the long-lasting isolation of the Baltic States and Finland. A key success factor has been to talk about all
the key projects in the region, rather than about one isolated project. To further reinforce the cooperation within the Baltic Sea region and prepare it for new challenges, the Commission and the member states carried out a reform of BEMIP in 2015. One of its key deliverables was the extension of its scope to new areas, such as security of supply, renewables and energy efficiency.

Such enhanced regional cooperation has been put in place also for the gas interconnections in the Central and South-East European countries, where security of supply and diversification of sources remain high on the agenda. In July 2015, the EU, nine member states and six Energy Community Contracting Parties agreed on a Memorandum of Understanding and an Action Plan to accelerate the building of seven priority gas infrastructure projects and to tackle the technical and regulatory issues which hamper security of supply and the development of an integrated energy market. This ambitious initiative, known as the Central and South-Eastern European Gas Connectivity (CESEC) High Level Group, was originally launched by Vice-President Maroš Šefčovič and Commissioner Miguel Arias Cañete in February 2015.

Another regional initiative is being implemented with the objective to end the energy isolation of the Iberian Peninsula. At the March 2015 Madrid interconnection summit, the governments of France, Portugal and Spain agreed (Madrid Declaration) on the setting up of a new regional High-Level Group for South-West Europe on interconnections to be put in place by the European Commission. The objective of this regional initiative is to plug the Iberian Peninsula into the internal energy market, both for gas and electricity. For electricity, it means the achievement of the 10% interconnection target. For gas, it means eliminating the remaining bottlenecks between France and Spain, including the internal constraints in the French system. In June 2015, following the Madrid Declaration, which specifies concrete projects to be implemented, a Memorandum of Understanding has been signed by Ségolène Royal, French Minister for Ecology, Sustainable Development and Energy, José Manuel Soria, Spanish Minister of Industry, Energy and Tourism, Jorge Moreira da Silva, Portuguese Minister of Environment, Territorial Planning, and Miguel Arias Cañete, Commissioner for Climate Action and Energy. The MoU sets the structure of the High-Level Group on Interconnections for South-West Europe, which is "responsible for the effective implementation of the Madrid Declaration". Currently, a more detailed Implementation Plan including next steps and key milestones is being finalised.

3.3.2 Various schemes could help enhance a common European approach to these projects.

As already underlined, one key success factor is to be able to develop a common approach to the projects and of their business plans. Several schemes can be considered to better reach this objective.

1) Most HLG members suggested that ACER (Agency for the Cooperation of Energy Regulators) be given the necessary resources to play an active role in defining a European vision to cross-border projects, in helping convergence and harmonisation among the concerned national regulators and in playing the part of a coordinator.

2) Another member of the High-Level Group, who proposed the architecture design described in 2.2.2, put forward the idea of an ad-hoc ‘transnational procuring agency’ in charge of the project execution, as already experienced for new cross-border railway projects.

Such agency would typically be formed by member states for a given relevant region (e.g. Baltic Region, Iberian Peninsula, etc.). It could be common to several projects and supported by the European Commission as well as by relevant national administrative bodies, particularly in terms of administrative authorisations securing and engagement with stakeholders.
For a given project, a common vision (and therefore a single business plan) defined through the agency would make revenue streams clearer, and risk-return prospects less hazardous.

The agency could tender the project(s) under a Design Build Finance Operate Maintain (DBFOM) scheme typical to project finance/PPP arrangements (and already used for transmission PPP projects in several jurisdictions globally). The open and competitive procurement process for the award of the project would ensure the cost-effective implementation of the interconnectors.

A long-term contract could then be struck between the investors and the agency in order to set out the detailed conditions applicable to a given project. This would give long-term visibility to the main applicable terms and the contract would become an asset for the investor, either kept in portfolio over its life duration or even sold.

3) In a more ambitious perspective, another member of the High-Level Group proposed to promote the creation of regional Independent System Operators (ISOs) like in the US. When interconnection is of strategic interest for Europe, the European Commission should encourage the emergence of common financing and operations thanks to consolidation among existing TSOs. These regional ISOs would foster solidarity and enhance management of the flow of electricity.  

4- Investors’ perception of risks of cross-border infrastructure projects could be improved through better guarantees against unpredictable regulation changes and revenue variations.

4-1 Unstable regulations create an insecure environment for investors who require long-term visibility.

Cross-border energy infrastructure represents an asset with a lifetime of several decades and investors expect from them a low risk/low revenue financial profile.

In Europe, those assets are mostly developed and operated under the Regulatory Asset Base (RAB) regime. One major issue in that regard is that the investors’ revenues are dependent on national regulations in the energy sector which are subject to political changes (taxes, tariffs…), which cannot be anticipated at the time the asset is developed. The return on capital invested is subject to change over the lifetime of the asset, which is difficult to justify for projects with a finite life and whose funding conditions are set from inception.

As an illustration, in the current economic context of low long-term interest rates, there is a political temptation to reduce the remuneration of infrastructure investors, despite the fact that infrastructure economic models have been calibrated to guarantee sufficient remuneration with a long-term perspective.

While some countries have a stable energy market environment, some others have shown some instability in their regulation framework, reducing investors’ assurance regarding the profitability of their investment. In multiple examples, regulations have also been modified with a retroactive effect, which has heavily impacted the profitability of investors and their level of confidence. As a consequence, investors request a risk premium or keep away from the projects, at the expense of end users.

This led one HLG member to stress the need to enshrine a dispute settlement mechanism in the EU Treaties to empower the European Commission to prevent retroactive changes at the member states-level.\(^9\)

### 4-2 For assets developed under the exempt regime, revenue models may also result in investments being unattractive.

Some cross-border infrastructure projects are developed under an exempt regime so that their revenues are obtained by allocating capacity to individual traders. This is for example the case of cross-border projects involving the UK.

The current EU framework leaves open the economic and legal structuring of each project that is subject to national rules, to decisions from grid operators as well as from involved public entities (i.e. national regulators, anti-trust/state aid authorities, administrative court decisions, etc.).

In such contractual schemes, the main revenue driver for investors is the price spread between the two countries involved as it determines the electricity flows that go through a given line. In a non-monopolistic situation, once the line is developed, the price spread diminishes, which may reduce flows and revenues.

This decrease of the price spread is a sign that the interconnection project has successfully played its role; however, paradoxically, it results in a decrease in revenues for investors in a magnitude that is not fully predictable at the time when the contract is drawn up. The consequence is an increase in risk for investors who may, as in the case of a regulatory risk, ask for a risk premium or decide not to invest.

### 4-3 Improving existing regimes through guarantees, arbitrage clauses or hedging mechanisms would help attract investors.

Different levers can be considered to decrease the risk level for investors, as presented below.

#### 4-3.1 Cap & floor mechanisms

Some projects developed in Europe under the exempt regime have already integrated this mechanism to reduce the risk level for investors and avoid as well a potential excess in their remuneration. The provision of a floor facilitates the investment as it reduces uncertainty associated with wholesale price fluctuations between markets and decreases the risk level for investors. At the same time, the setting of a cap guarantees that consumers are protected against unbounded investor revenues. The narrower the corridor, the closer the mechanism to a regulated scheme.

Different cap & floor mechanisms could be considered. One member of the High-Level Group has suggested that such mechanisms developed by the UK Office of Gas and Electricity Markets (Ofgem) could be expanded to other projects at a European level.

An example of the cap & floor mechanism developed by Ofgem is given by the NEMO interconnector project between the UK and Belgium. In this project, end consumers guarantee a minimum revenue (floor) to investors via network charges, while investors’ revenues above a certain level (cap) are returned to end consumers. The regime is set for 25 years in order to give long-term visibility on returns, with cap & floor levels set in real terms over the duration of the regime. Assessment of revenues reaching the cap & floor levels is performed over a five-year discrete periodic basis.

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\(^9\) Another Member of the HLG expressed her opposition to this suggestion.
As a suggestion to set the cap and floor levels, the floor could be determined in order to serve the cost of debt and ensure a minimum equity return to investors. On the other hand, the cap could be based on a benchmark cost of equity applicable to investors with a similar risk profile. Both cap & floor need to be kept up-to-date and linked to the market.

4- 3.2 Arbitrage clause

According to the majority of HLG members, regulatory risk could be factored into contracts, for instance through a systematic arbitrage clause that would facilitate conflict management in case of a significant change in contract conditions by the States over the course of its execution.

In the event of a conflict regarding the contract terms with governments, a European agency (for example ACER) could play the role of an arbitrator. This would enable a faster resolution of conflicts than through national administrative courts, providing more assurance to investors over the long term. Recourse to international arbitration under International Chamber of Commerce (ICC) rules of arbitration would still be possible as a last resort.

The set-up of a pilot project may be a good opportunity to test the ability to include an arbitrage clause in contracts (e.g. the Eastring project to connect Turkey towards the North, North Sea Offshore Grid…).

It has to be pointed out, however, that one HLG member was reluctant to envisage bypassing national justice systems, which could “foster public opposition”.

4- 3.3 Additional instruments for risk coverage in infrastructure projects

With the development of PPP, the UK has developed specific instruments to cover the risks taken by private investors in infrastructure projects. Private investors can buy various credit guarantees (e.g. wind, solar…) covering different types of risks (inflation, exchange rate, political risks).

Similarly, the MIGA (World Bank) has also developed financial instruments to protect private investors against political risk in developing countries. Implementation of such protection tools, which are under development at EFSI and EIB, should be encouraged, and national authorities could develop similar instruments (e.g. Coface in France, KFW in Germany).

5- Private investors should be encouraged to invest in infrastructure projects from an early stage through financing schemes that would bring risk to an acceptable level.

5- 1 Investment of the private sector is developing at a slow pace, with TSOs remaining the main developers of cross-border infrastructures.

TSOs (Transmission System Operators) or companies that invest in and execute new cross-border transmission lines are using syndicated loans and bonds to a lesser extent to finance their investments. They benefit from lower interest rates which make their funding conditions competitive.
Institutional investments may represent a viable option in specific circumstances, but they have limited applicability to transmission investments due to the fact that the majority of TSO projects cannot be ring-fenced. The TSOs have, in this regard, no alternative than financing their projects via corporate finance.

Due to the regulated remuneration system of TSOs, it is very important for most of these companies to maintain their investment-grade credit rating. During the construction period of new infrastructure, the debt level of a TSO normally increases, and, as the new projects do not yet generate extra revenue, the investment can endanger the credit rating of the TSO. As a result, a TSO is forced to limit the number of new projects it can implement at the same time.

If TSOs could have a better access to financial instruments that alleviate the above-mentioned financial constraints during the construction period of new investments, it would probably boost future transmission investments.

A hybrid security is such a financial instrument. It is a long-term, subordinated security and due to its specific characteristics, credit-rating agencies consider it partially as equity. By using a hybrid bond, the issuer can borrow more without endangering its credit rating.

Until now, only very few TSOs issued hybrid securities. It is recommended that the European Commission/EIB investigates if they can develop a specific financial instrument like hybrids to support TSOs which invest in new projects. Such a new financial instrument would remove an important hurdle to accelerating investments in new infrastructure projects.

We have seen the emergence of direct lending by institutional investors in the infrastructure sector (essentially European insurance companies). Securitisation of banks’ energy assets is not a common practice as investors are not used to it. Investors tend to be careful, have a lower potential debt leverage than banks and stand away from the management complexity of specific investments.

There are two main obstacles inhibiting investors from participating in the funding of energy infrastructure projects: first, they are more risk adverse than banks, especially for new types of projects; and second, investing in assets under a “contractual” scheme is complex as they are specific, need to be thoroughly analysed prior to the investment decision and require an active follow-up.

**5-2** However, private investors have a real appetite for infrastructure projects at an acceptable risk level; leveraging private funding would secure new sources of financing and ensure robust economic rationale.

Despite the slow trend of private investment in the energy sector, private investors’ appetite for low-risk assets such as infrastructure is strong. OECD institutional investors typically have a 1% allocation to infrastructure, and industry surveys show a willingness from most players to increase this to an average of 3% of their assets under management: a rough estimate leads to €1,000 billion to €2,000 billion of additional potential allocation to infrastructure by OECD institutional investors to be expected in the next five years. There should be no difficulty in finding private investors for both gas and power infrastructure in the EU, provided that risk is kept under control.

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10 Mitsubishi (Tennet German Offshore Grid), IFM Investors (50Hertz), Macquarie (German gas distribution network), ElecLink and FAB (France-UK interconnectors).
5-3 The European Commission could actively fund projects through mezzanine debt, bringing down risk to an acceptable level for private investors.

In this context, there is a key role for the EU in helping to fund major infrastructure projects, with the objective of inducing private investors and banks to fund or refinance projects that they would not have considered without this action. The objective is certainly not to allocate risk to the public sector and revenue to the private one, but to target the threshold of risk borne by the private sector, at which it starts to consider to invest in these projects.

The current approach is mostly one of the EIB co-lending with banks. While this has the benefit of increasing the quantum of senior debt available to a given project, it is probably not the optimal contribution of public funding for attracting private funds. If EU funding were structured to further de-risk senior debt and facilitate securing an investment grade rating, it would have the potential to unlock a bigger quantum of long-term institutional liquidity.

A member of the HLG gave the example of the “Juncker plan” EFSI to be used to invest in an infrastructure project that requires additional funding before the project can be developed. Instead of a traditional 80:20 senior debt to equity capital structure, a revised financing structure could be: 70% senior debt, 20% equity and 10% of mezzanine debt from the EFSI. The financing benefits could be very substantial for a somewhat moderate ticket to be provided by the EFSI. By holding mezzanine debt, the EIB would reduce the risk of senior creditors and make the project much more attractive to private investors.

The Project Bond 2020 initiative has been a useful starting point for the planned wider use of such instruments under the EFSI. Successful pilot projects would certainly help make public funding through mezzanine debt a more common practice. According to this HLG member, this could be a ‘game changer’ for the funding of the energy infrastructure sector.

5-4 The European Central Bank is creating new opportunities for non-bank corporation investment financing, which the energy sector could use for the funding of cross-border infrastructure.

On 10 March 2016, the European Central Bank announced an increase of its monthly asset purchase programme from €60 billion to €80 billion. Bonds issued by non-bank corporations will be eligible for purchases to start towards the end of the second quarter of 2016. Moreover, the ECB’s limits of its share of holding of securities issued by eligible international organisations, including the European Investment Bank, will be increased by 50%. If we add banks’ access for their net credit refinancing to the ECB through the T-LTRO (Targeted Long-Term Refinancing Operation) programme at a negative rate, there now exist for the financing of investment in cross-border infrastructure a full range of opportunities under extremely favourable financial terms.

Removing the obstacles to the launch of these projects is all the more pressing.

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11 Mezzanine debt is an unsecured debt that sits between senior debt and equity. It has a higher level of risk than senior debt.
Synthesis of recommendations

1. Seize implementation of the Market Stability Reserve in 2019 as an opportunity to give a long-run visibility to the price of carbon, obtained through a predictable increase in the floor level over time. Reaching this objective will require the creation of an independent entity mandated to adjust the supply of emissions permits to its demand so that the expected path of the carbon price floor determined long in advance is always respected over time.

2. Strategic cross-border Projects of Common Interest could be selected subject to prior independent socioeconomic assessment, which would make projects to be launched fully in line with the European energy policy. In order to enhance the “public sector delivery capacity”, these projects could enter into an “Energy Union delivery process” which could be implemented by the Innovation and Networks Executive Agency (INEA).

3. In order to develop a common approach at the regional level to cross-border projects, assign the Agency for the Cooperation of Energy Regulators (ACER) the role of helping convergence and harmonisation among the concerned national regulators and playing the part of a coordinator. An ad-hoc “transnational procuring agency” formed by member states of the relevant region could be in charge of the project execution.

4. Leverage an “Ombudsman” or “Project Coordinator” to accelerate and create accountability for the delivery of critical projects locally.

5. In order to provide more assurance to investors in the event of a conflict with public authorities, include a systematic arbitrage clause in the contracts.

6. Encourage EFSI and EIB to provide additional guarantee instruments to cover the risks taken by private investors (inflation, exchange rates…) and reduce their WACC (weighted average cost of capital) of participating in projects.

7. For contractual schemes where success of the interconnector leads to a lower price spread and lower revenues, improve the economic business model of cross-border infrastructure by defining a new remuneration scheme using cap and floor mechanisms and/or indexation formulas.

8. Ensure active funding participation by the European Commission through mezzanine debt in order to reduce the risk in projects and to enhance the credit rating of senior debt, thus facilitating access to the deep pool of institutional liquidity.
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