EX-ANTE ASSESSMENT
ON THE POTENTIAL USE OF FINANCIAL INSTRUMENTS WITHIN THE CONNECTING EUROPE FACILITY

Final version
(29 August 2014)
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>BGK</td>
<td>Bank Gospodarstwa Krajowego</td>
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<tr>
<td>CAPEX</td>
<td>Capital expenditures</td>
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<tr>
<td>CDC</td>
<td>Caisse des dépôts et consignations</td>
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<td>CDP</td>
<td>Cassa Depositi e Prestiti</td>
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<td>CEB</td>
<td>Council of Europe Bank</td>
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<td>CEF</td>
<td>Connecting Europe Facility</td>
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<td>CEF sectors</td>
<td>the three sectors of transport, energy networks and telecommunications</td>
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<tr>
<td>CNECT</td>
<td>Directorate-General Communications Networks, Content and Technology</td>
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<td>EBRD</td>
<td>European Bank for Reconstruction and Development</td>
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<td>ECFIN</td>
<td>Directorate-General Economic and Financial Affairs</td>
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<td>EIB</td>
<td>European Investment Bank</td>
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<td>ENER</td>
<td>Directorate-General Energy</td>
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<td>EPEC</td>
<td>European PPP Expertise Centre</td>
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<td>ICO</td>
<td>Instituto de Crédito Oficial</td>
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<td>IFI</td>
<td>International Financial Institution</td>
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<td>KfW</td>
<td>Kreditanstalt für Wiederaufbau</td>
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<td>LGTT</td>
<td>Loan Guarantee facility for TEN-T</td>
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<td>Marguerite</td>
<td>2020 European Fund for Energy, Climate Change and Infrastructure</td>
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<td>MOVE</td>
<td>Directorate-General Mobility and Transport</td>
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<td>NIB</td>
<td>Nordic Investment Bank</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>PBI</td>
<td>Europe 2020 Project Bond Initiative</td>
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<td>PPP</td>
<td>Public-private Partnership</td>
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<td>SME</td>
<td>Small and medium enterprises</td>
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<td>SWF</td>
<td>Sovereign Wealth Fund</td>
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<td>TEN</td>
<td>Trans-European Networks</td>
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<td>TEN-E</td>
<td>TEN Energy</td>
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<td>TEN-T</td>
<td>TEN Transport</td>
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<td>TSO</td>
<td>Transmission System Operator</td>
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EXECUTIVE SUMMARY

The Connecting Europe Facility (CEF) is the funding instrument for the trans-European networks (TEN) in the fields of transport, energy and telecommunications, the CEF sectors. The overall objective of the CEF is to help create high-performing and environmentally sustainable interconnected transport, energy and communications networks across Europe, thereby contributing to economic growth and social and territorial cohesion within the Union.

This ex-ante assessment sets out a detailed rationale for using financial instruments within the CEF to complement grant funding. It provides information on the form these financial instruments should take to contribute to reaching the policy objectives of the CEF.

Investment needs and existing sources of finance

The Commission estimated that EUR 1 trillion would be required to meet the main investment needs in TENs in the three CEF sectors until 2020. European infrastructure investment activity has been financed both through public sector institutions (international multilateral institutions, national development banks) as well as through private finance (both on a corporate finance and project finance basis).

Market failure

There is a substantial market failure as well as numerous sub-optimal investment situations leading to underinvestment in viable investment opportunities. On the one hand, the public institutions have only limited capacity and cannot satisfy the full market demand for financing. On the other, private-sector bank financing was made more difficult by the financial crisis and stricter regulation of the financial sector. Higher capital requirements for banks to comply with Basel II and Basel III as well as the long-term funding structures of infrastructure projects have played a part in the decisions by numerous banks to curtail or end their exposure to the infrastructure financing business. While debt capital market financing of infrastructure projects has become more commonplace in Europe over the past few years, it is still not sufficiently developed. As a result many projects do not get done, mainly in riskier sectors, geographies and of greenfield project maturities (construction of new assets).

Proposed CEF financial instruments

The financial instruments under the CEF will tackle one of the key failures identified in the market, i.e. the insufficient involvement of private investors in infrastructure financing throughout the Union, particularly on cross-border and riskier projects. The objective of the financial instruments under the CEF is to facilitate infrastructure projects’ access to project and corporate financing by using Union funding as leverage. The financial instruments shall help finance projects of common interest with a clear European added value, and facilitate greater private sector involvement in the long-term financing of such projects in the transport, energy and broadband sectors. At the same time, the design of financial instruments should also support the development of a sustainable financial environment – both capital markets and banks - enabling in the longer term an enhanced private financing of infrastructure projects.

The Debt Instrument

Given the market failures currently identified and the need to start operations in 2014, it is proposed to initially set up and launch the Debt Instrument in cooperation with the EIB. Other entrusted
entities may be considered for the implementation of the instrument in the future. The instrument will build on the existing Project Bond Initiative and the Loan Guarantee for TEN-Transport. However, given that not all CEF eligible projects where market failures have been identified can be financed by capital markets or on a project financing basis and to face efficiently a changing market environment, the intention is to make use of all the toolbox available of debt instruments available under the CEF Regulation, including senior and subordinated funded and unfunded instruments.

All operations under the Debt Instrument will be supported by a risk sharing mechanism with the EIB where the EU budget takes the first loss piece of the portfolio of such operations. The first loss provisioning provided by the EU budget will be shared among all projects in the three sectors covered by the CEF. This will allow for higher diversification and hence maximise the number of projects that can be supported by the CEF Debt Instrument. Finally, the structuring of the Debt Instrument will cater for potential future contributions of European Structural and Investment Funds.

Subject to a prior evaluation, the Debt Instrument may merge with the existing risk-sharing financial instruments (i.e. LGTT/PBI), thus opening up the possibility of having a single multi-sector instrument. A practical mechanism of this merger is proposed in Annex V, which together with the overall ex-ante serves as the prior evaluation required under the CEF Regulation.

**Equity Instrument**

In a second phase, the Commission will consider the set-up of an Equity Instrument and/or a dedicated investment vehicle to provide equity funding as a complement to the Debt Instrument set up with the EIB.

**Additionality and consistency with other forms of public intervention**

The initiative does not aim at replacing other instruments that provide finance to infrastructure projects, but complements them and ensures critical size. Given the widespread nature and the size of the market failure, there will be plenty of scope for other national, and/or regional initiatives and financial instruments to further address the market failure. The added value will be further maximized by working closely with financial instruments across different Member States and to understand the investment priorities of each Member State.

**Non-distortion of competition / no crowding-out of market funding**

The size and nature of the market failure mean that it is highly unlikely that the envisaged financial instruments will lead to any crowding out of existing economic operators. There is little risk of crowding out given the paucity of private sector investment activity. Rather the intention is to ‘crowd in’ investors of the private sector.

**Subsidiarity**

The coordinated development and financing of the trans-European networks cannot be sufficiently achieved by the Member States alone and can therefore be better achieved at Union level.

**Leverage effect**

The financial instrument's objective is to mobilise as much capital as possible for EU objectives by mobilising a global investment in the form of equity or debt that is several times greater than the EU-budget commitment. The leverage effect of the proposed Debt Instrument will be in line with the
requirements set out in the CEF Regulation, i.e it is expected to be from 6x to 15x depending on the type of operation.

**Proportionality**
The maximum possible envelope of EUR 3.2bn allocated to financial instruments under CEF is of a non-excessive proportion to the size of the market gap.

**Alignment of interest**
The alignment with the entrusted entity's interest (initially, the EIB) is ensured by the risk-revenue sharing mechanism. The Connecting Europe Facility will provide strong support to financing infrastructure projects. The envisaged financial instruments therefore enable excellent alignment between the EU and MS in the pursuit of CEF objectives.

**Monitoring and evaluation**

As established in the CEF Regulation, the Commission will also undertake an evaluation by the end of 2017 in close cooperation with the Member States and beneficiaries to provide feedback on the implementation of the CEF. This evaluation will assess inter alia how to make financial instruments more effective.

Also the CEF shall take into account the independent full-scale evaluation on the European Project Bond Initiative, to be carried out in 2015. On the basis of that evaluation, the Commission and the member states shall assess the relevance of the Europe 2020 Project Bond Initiative and its effectiveness in increasing the volume of investment in priority projects and enhancing the efficiency of Union spending.
1. **OBJECTIVES OF THE CONNECTING EUROPE FACILITY (CEF)**

The Connecting Europe Facility (CEF) is the funding instrument for the trans-European networks (TEN) in the fields of transport, energy and telecommunications, the CEF sectors over the period of the 2014-2020 Multiannual Financial Framework. It was established by the regulation 1316/2013 (the CEF regulation). The overall CEF budget for 2014-2020 is EUR 33.2 billion. Of this, EUR 26.3 billion (including EUR 11.3 to be transferred from the Cohesion Fund) is allocated to the transport sector, EUR 5.9 billion to the energy sector and EUR 1.1 billion to the telecommunications sector.

The overall objective of the CEF is to help create high-performing and environmentally sustainable interconnected transport, energy and communications networks across Europe, thereby contributing to economic growth and social and territorial cohesion within the Union.

The regulation replaces and unifies the existing separate legal bases for TEN funding and determines the conditions, methods and procedures for the Union's financial contribution to TEN projects, whether in the form of grants or through financial instruments. The EU will contribute to the financing of projects at different rates depending on the sector and the type of action concerned. To be eligible for aid from the CEF, the projects must be in line with the requirements set out in the CEF regulation and in the sector-specific guidelines. The guidelines for the energy sector have already been adopted and published in the EU's Official Journal (regulation 347/2013), this is also the case for the transport guidelines (regulation 1315/2013) and the guidelines for the telecommunications sector (regulation 283/2014).

2. **APPROACH**

2.1. **Purpose of this assessment**

The present ex-ante assessment for the use of financial instruments takes the CEF as a given, i.e. this assessment will not seek to justify EU policy action in each of the sectors covered by CEF nor the choice to unify the funding of these sectors in the CEF. For this, the reader is referred to the impact assessment for CEF1 as well as the impact assessments for each of the sector guidelines2.

This assessment takes account of the financial instruments established under other EU instruments such as the European Structural and Investment Funds (ESIF)3 and the Horizon 20204 programmes. For a detailed presentation of the intended use of those instruments, the reader is referred to the respective ex-ante assessments.

Financial instruments, in line with the Financial Regulation 966/20125, may take the form of equity or quasi-equity investments, loans or guarantees or other risk-sharing instruments. They are set up using EU budgetary funds and may, where appropriate, be combined with grants. The CEF regulation already establishes some terms, conditions and procedures for granting financial

5 Article 2 (p)
assistance through financial instruments\(^6\). It is not the purpose of this ex-ante assessment to revisit those issues again.

The assessment will set out a detailed rationale for using financial instruments within the CEF to complement grant funding. It will also provide additional information on the form these financial instruments should take to contribute to reaching the policy objectives of the CEF.

### 2.2. Structure of this assessment

The ex-ante assessment describes the present state of the infrastructure market by sector and the resulting financing needs. It considers the actors and products, including financial instruments, which are involved in the market today and which lessons can be derived from the developments of the past 5-10 years.

The assessment concludes that there is a strong case for the use of financial instruments within the CEF for addressing the gap in infrastructure financing in the EU in the next decade. It recommends to initially set-up a risk-sharing instrument which can cover both corporate and project debt inter alia in the form of loans and project bonds. An equity instrument could be created at a later stage based on the identification of corresponding needs. Equally, the study discusses how to assess and monitor the success of the proposed instruments.

### 3. ANALYSIS OF INVESTMENT NEEDS IN THE CEF SECTORS

#### 3.1. Overview of CEF investment needs

**3.1.1. The European infrastructure challenge**

Fostering Europe's transformation into a knowledge-intensive, low-carbon and highly competitive economy requires adequate modern and flexible energy, transport and communications networks. New infrastructure needs also arise in connection with the implementation of the Europe 2020 Strategy.

In 2011, the Commission estimated that EUR 1 trillion would be required to meet the main investment needs in TENs in the transport, telecommunications and energy sectors until 2020\(^7\). Infrastructure needs arise not only in relation to core European networks but also to projects that could be delivered at national level in various sectors, such as sustainable transport, renewable generation and smart grid assets. The Commission estimated broader investment needs in energy under Europe 2020 (distribution and generation) to account for up to further EUR 0.9 trillion until the same date.

The recent Commission Communication "Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth" COM(2014) 130 final concluded that the reasons for having a Europe 2020 strategy are equally pressing in 2014 as they were in 2010, confirming the need to continue support investment in EU infrastructure.

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\(^6\) Article 14 and Annex I, Part III

\(^7\) "Connecting Europe Facility: About EUR500 bn in transport, EUR200 bn in energy and EUR 270 bn for fast broadband infrastructures." (p. 5)
How to meet this investment challenge is one of the big questions that the European Union has to face in the next decade. While the market, through appropriate investment and pricing mechanisms, is expected to play a major role in delivering the required infrastructures, without public intervention, some of the necessary core investments would not take place or will be delayed far beyond 2020. This is the rationale for the creation of the Connecting Europe Facility and the accompanying guidelines for transport, energy and ICT. In addition to private and CEF financing, EU infrastructure investments will also be carried out at national/local level through the use of European Structural and Investment Funds. All these investments need to be implemented in an integrated infrastructure architecture taking into account the additionality of each financing source.

The aim of the CEF is to accelerate investment in the field of trans-European networks and to leverage funding from both the public and the private sectors, while increasing legal certainty and respecting the principle of technological neutrality. The CEF should enable synergies between the transport, telecommunications and energy sectors to be harnessed to the full, thus enhancing the effectiveness of Union action and enabling implementing costs to be optimised.

Given the scale of the investment required, the reduction in infrastructure investment by the majority of Member States and the relatively small CEF budget\(^8\) it is clear that private sector financing will be important. In order to increase the ability of the private sector to undertake these investments, financial instruments can contribute to absorb some of the risks which the private sector is not able or willing to take.

**Financing versus Funding**

This report mainly deals with the question of *financing* of infrastructure projects built by private or public-private companies. By financing we understand the provision of funds (equity and debt) required to build the infrastructure project: "who lends or invests in the project."

By *funding* we understand the ultimate provision of revenue to the project to "pay for the project over its lifetime." The revenue can come from the users of the infrastructure (e.g. real tolls and user fee charges levied on citizens and businesses, e.g. energy transmission tariffs) or from the state budget (ultimately from the tax payers).

There can be situations where *financing is available* (someone is ready to lend to the project or to invest in its equity), *but the funding is not there* (insufficient source of funds to pay for the project over its lifetime at the given cost).

Availability of financing is however not the only issue affecting the infrastructure market. In sectors such as transport and energy where public investment is crucial, governments across Europe have an important role to play in committing to unlock new infrastructure investment and in addressing uncertainty over the future supply or pipeline of infrastructure projects. Without a proper pipeline of (suitable) deals, long term investors cannot be attracted. Building investor confidence in transaction flow, so that they are both willing to commit their savings pool and invest in building the new capabilities required to provide finance for infrastructure projects necessitates a greater degree of transparency in the pipeline of projects at the national and supranational levels.

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\(^8\) EUR 33.2 billion over the 2014-2020 period
Ideally, such plans should have a continuous character and not be changed from time to time, for political or other reasons. Also, coordination of such plans between the various Member States is desirable and may well improve the investment opportunities of international investors. Unfortunately over the past few years several Member States have publicly drastically reduced their infrastructure pipeline. Reviews of investment policy are obviously a welcome tool in ensuring that the right projects are prioritized. However a 'stop-and-go' policy where a very large pipeline of investment projects is announced only to be reduced by 80% few years later does not help in establishing the credibility of the Member State.

In conclusion, in many Member States and sectors there is also a fundamental problem of the limited number of projects initiated by the public side. The limited pipeline combined with political uncertainty regarding private participation, limited institutional capacity and stability of frameworks also hinder the private delivery infrastructure in Europe. A worldwide competition to attract private investment in infrastructure is taking place (see also section below) and Europe should develop the right incentives to ensure that it keeps a leading position in the infrastructure market.

3.1.2. International initiatives in the field of infrastructure

The issue of long-term investment in infrastructure has also been placed on the international agenda at G20 level, where an Investment and Infrastructure Working Group has been created to look at mechanisms to boost long-term finance of infrastructure, along four work streams focused on i) improvements in the domestic investment climate, ii) the intermediation of global private savings, iii) optimization of the involvement of Multilateral Development Banks, and iv) improvements of processes and transparency around the preparation and financing of investment projects.

Further work in the same direction has been pursued by the OECD Task Force on Institutional Investors. The Task Force has developed High Level Principles of Long-term investment financing that identify a set of general recommendations to OECD and G20 countries to facilitate and promote long-term investment by institutional investors (i.e. promoting infrastructure data collection at an international level, fostering collaborative mechanisms among institutional investors, establishing a regulatory environment to address market failures which inhibit long-term investment by institutional investors, developing appropriate financing vehicles for long-term investment, etc.). To this effect the Task Force has been mandated to consult members in order to identify approaches to the implementation of these principles. The survey responses are meant to serve as an input to the production of a Report on Effective Approaches for the High-Level Principles to be provided to G20 Leaders later in 2014.

3.2. Investment needs in the Transport sector

Existence and quality of an integrated transport network (comprising road, rail, inland waterways, maritime, airports and air traffic management) sectors is strongly correlated with international competitiveness of the country, due to reduced travel and transportation times, better interconnections between the modes of transport, integration of regional and national production sites with distribution and selling towards the national and global markets.

Transport infrastructure is therefore fundamental for the mobility of persons and goods in the internal market, and for the economic, social and territorial cohesion of the European Union. However, the EU comprises 5,000,000 km of paved roads, out of which circa 65,000 km are motorways, over 213,000 km of rail lines, out of which more than 110,000 km electrified, and nearly 43,000 km of navigable inland waterways, so in order to address transport investment from a systemic perspective,
the EU adopted in 2013 a regulation on Union guidelines for the development of the trans-European transport network\(^9\) (TEN-T Guidelines).

The regulation establishes a legally binding obligation for the Member States to develop the so-called "core" and "comprehensive" TEN-T networks. In addition, the regulation identifies projects of common interest and specifies the requirements to be complied with in the implementation of those projects.

The core network overlays the comprehensive network and consists of its strategically most important parts. It constitutes the backbone of the multi-modal mobility network Europe's citizens and businesses need. It concentrates on those components of TEN-T with the highest European added value: cross border missing links, key bottlenecks and multi-modal nodes. The goal is to complete the core network by December 2030 and the comprehensive network by December 2050 at the latest.

The cost of EU transport infrastructure development has been estimated at over EUR 1.5 trillion for 2010-2030. The completion of the TEN-T network alone requires about EUR 550 billion until 2020 out of which some EUR 215 billion can be referred to the removal of the main bottlenecks. This compares with total investment on transport infrastructure during the period 2000-2006 of EUR 859 billion.

In January 2014, the Commission adopted a Communication and a delegated act setting the transport funding priorities for the CEF implementation 2014-2020. Most of the CEF funds should be focused on major cross-border projects and main bottlenecks on the 9 TEN-T multimodal Corridors, as well as on traffic management systems, which allow making the best use of the existing infrastructure (ERTMS for railways, SESAR for aviation). The CEF will support primarily projects listed in Part I of the Annex to the CEF Regulation, which have been pre-identified by the Commission in consultation and cooperation with the Member States concerned. The transport infrastructure investments require long term commitments from the national authorities in charge of infrastructure planning and procurements in order to establish the necessary credibility and transparency among all actors involved in the planning and financing of infrastructure, including the public and the private sectors.

The transport infrastructure lifecycles, depending on the sector, are very long term (above 30 years for roads, with necessary maintenance cycles). In the absence of sufficient supply of long-term bank lending (corresponding to the lifetime of the infrastructure financing, including the spending on the maintenance), or as a result of the high expectations of equity providers over the rates of return, this leads to the planning or upgrade of many infrastructure investments being postponed and to the decline of new investments.

Public funding of the basic transport infrastructure has been considered in many European countries as a "service d'intérêt public" and expression of the "acquis of the welfare state" and therefore not subject to the user-pays principle. It estimated that over the last 20 years, 90-95% of transport investments were financed through national government budgets.\(^{10}\) When transport infrastructure is


\(^{10}\) There are multiple reasons why most of transport infrastructure is financed by the public side. These reasons vary between Member States: A large share of transport infrastructure is not revenue generating (inland waterway and most of roads) or is not generating sufficient revenue (rail). Procurement via PPP structures is more complex and
privately financed, it is usually on the basis of a public-private partnership (PPP) with a project finance underpinning. In the case of companies that operate multiple transport projects, such as e.g. APPR and Vinci in France or Abertis and Ferrovial in Spain and other parts of Europe, they have generally taken over a portfolio of assets as a result of a privatisation. Due to the maturity and diversification of the portfolio, these companies are generally able to finance their relatively small investment requirement in the corporate bond markets, albeit at 7-10 year maturities. Project financing is well established in the road, port and airport sector, whereas for inland waterways currently the first PPP projects are prepared. An exception is the rail sector, where projects are often financed on a corporate finance basis by the railway infrastructure companies.

Due to macroeconomic circumstances since the global financial crisis, slow growth rates and constraints on the public expenditure, coupled with insufficient long-term bank lending, it is necessary to consider other financing possibilities of infrastructure, as key element for the national and global economic competitiveness, including private public partnerships and financial instruments that mitigate parts of the risk inherent to the projects.

3.3. Investment needs in the Energy sector

The move to a low carbon energy economy decided in 2008 and reinforced in the Communication "A policy framework for climate and energy in the period from 2020 to 2030" - COM/2014/015 final has impacted the EU energy system architecture moving from centralised electricity generation capacities to more diffuse and intermittent capacities which are requiring to extend and reinforce the electricity grids.

Major efforts are needed to modernise and expand Europe's energy infrastructure and to interconnect networks across borders to meet the Union's core energy policy objectives of competitiveness, sustainability and security of supply. Since the Commission's Communication on energy infrastructure priorities for 2020 and beyond, adopted on 17 November 2010 the existing Trans-European Networks for Energy (TEN-E) policy and financing framework has been overhauled to coordinate and optimise network development on a continental scale. The main aims are to ensure that the internal energy market is completed, the security of energy supply increased and that Europe's renewable generation potential could be exploited. The framework for the policy is now defined in the TEN-E guidelines regulation adopted in April 2013. It is estimated that in electricity alone the transmission grid expansion to accommodate these changes would require EUR 104 billion to 2022 (or, extrapolating, EUR 207 billion to 2030) in addition to normal replacement of assets EUR 76 billion to 2035.

The potential of the demand side in markets is currently underutilised. Consumers have traditionally been considered passive users, rather than an influential part of the energy market. Changes in the supply side, particularly increases in "variable" wind or photovoltaic power generation, require more flexibility in energy networks. Changes to consumption patterns, coming from energy efficiency.

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11 PPP hereby includes also concessions as the common model of financing motorways in certain of Member States and airports in general.
13 Regulation 347/2013
15 IEA World Energy Outlook 2011
local energy sources, and demand response solutions can provide such flexibility and will be crucial for effectively matching supply with demand in the future. Therefore, approximately EUR 40 billion will be required until 2020 for the smart grid investment on the transmission level.

Security of energy supply, which means ensuring continuous and adequate supplies of energy from all sources to all users, has recently been reinforced as a strategic issue in the energy sector due to the recent events in Ukraine. For fossil fuels, the International Energy Agency projects an increasing EU reliance on imported oil from around 80% today to more than 90% by 2035. Similarly, gas import dependency is expected to rise from 60% to more than 80%. Rising demand for energy at global scale and insufficient competition in EU energy markets has sustained high commodity prices. In 2012, Europe's oil and gas import bill amounted to more than €400 billion representing some 3.1% of EU GDP compared to around €180 billion on average in the period 1990-2011. This increases the EU's vulnerability to supply and energy price shocks. In March 2014, the European Council has asked the Commission to provide a plan to reduce energy dependency which is likely to give a push to storage capacity and more and larger interconnectors. Some EUR 70 billion will need to be invested by 2020 in gas transmission assets of European importance such as gas interconnectors, storages, Liquefied Natural Gas (LNG) reception terminals.

The projects will be developed by Transmission System Operators (TSOs) i.e. companies set up specifically to develop and run the electricity and gas transmission networks. TSOs operate in a highly regulated business environment. Although the regulations differ from Member State to Member State, they frequently include aspects such as agreed investment volumes, maximum debt ratios, maximum debt remuneration, etc. The regulatory approved revenue is normally linked to the book value of the assets they operate, so called the Regulated Asset Base (RAB).

3.4. Investment needs in the Broadband sector

3.4.1. Investment needs and current investment trends

The Digital Agenda for Europe (DAE) recognises the role of fast and ultra-fast broadband access as a platform for innovation and growth and sets ambitious targets for broadband coverage and take-up: (i) making basic broadband access available to all Europeans by 2013, (ii) making available access to much higher internet speeds of above 30 Mbps to all Europeans by 2020 and (iii) ensuring that by 2020 50% of Europeans households subscribe to internet speeds of 100 Mbps or higher. Full coverage with basic broadband has recently been achieved (with a combination of fixed, mobile and satellite technologies) and the focus is now shifting to the challenges associated with the deployment of next generation access (NGA) networks and take-up.

The second and third broadband targets ("NGA targets") require substantial investments in the modernisation of access networks. Total investment needs are difficult to quantify with precision, but indicative estimates from different sources suggest that total investment costs for NGA may exceed EUR 200 billion. The results by Hätönen (2011) indicate that most of the investment challenge is

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16 TSOs build new projects with e.g. the accumulated capital or borrow money against the strength of their balance sheets. The value of such new project is added to Regulated Asset Base (RAB) and therefore results in increased revenue of that TSO.

17 European Commission (2010) cites a range of EUR 181 – 269bn of investment to achieve the third broadband target. According to Hätönen (2011), total cost for reaching the three Digital Agenda broadband targets may be up to 221bn depending on quality requirements and associated technologies. VenturaTeam and Portland Advisers (2012) estimate investment costs of EUR 202bn for 50% fibre switchover and 272bn for full fibre switchover outside areas adequately served with high speed cable.
with large EU countries. For instance, the five largest Member States as measured by population (France, Germany, Italy, Spain and the UK) account for 63% - 72% of total investment needs, depending on the scenario chosen.

Most of the larger commercial telecom network operators in the EU have announced NGA upgrades for the coming years (see Figure 1 for a snapshot of selected operators\(^\text{18}\)). However, CAPEX levels of many operators are more or less stable or show moderate increases, pointing mostly to incremental improvements rather than major upgrade cycles. Cable operators as a second group of players that provide broadband services have upgraded their infrastructure to higher speeds or are in the process of doing so, but do not usually expand their geographic footprint. At the end of 2012 cable infrastructure covered slightly more than 42% of EU homes (European Commission, 2013), but aggregate figures mask considerable variation across Member States with virtually no cable presence in some countries. Other project promoters such as alternative network operators, utilities and publicly-owned entities also contribute to NGA roll-out to a varying degree depending on the Member State in question.

![Figure 1: Current coverage and investment plans of major European telecom operators by technology](image)

Source: Nomura Equity Research

**Figure 1: Current coverage and investment plans of major European telecom operators by technology**

Despite projects being initiated at various levels, current investment plans in fixed network infrastructure are not only subject to frequent revisions, but even if they were fully implemented they would most likely not be sufficient to achieve the necessary coverage for the Digital Agenda NGA targets (see e. g. Analysys Mason and Tech4i2, 2013). All-in-all, the current pace of NGA roll-out is likely to leave a sizeable investment gap in the years to 2020.

For more on the NGA investment case see Appendix IV.

### 3.4.2. Types of project promoters and investment models in the EU

Traditionally, the bulk of network investment in telecoms has been shouldered by vertically integrated telecom network and cable operators and to some extent by alternative telecom carriers

\(^{18}\) The chart is a courtesy of Nomura Equity Research. Data assembly, graphs and underlying research were produced exclusively by Nomura analysts. Current coverage refers to the latest figures available; timelines for targets vary from 2014 to 2020. Where targets involve several steps or milestones, only a subset may be shown.
and municipalities. These players typically use corporate financing for their network investments and up to this point mainly rely on retained earnings/cash flow from normal operations and complementary debt financing.

While these observations continue to apply as a general rule, a number of alternative investors and investment models are emerging. One alternative group of investors is regional or local utilities, especially in the energy sector (e.g. in Denmark, Germany). These companies take advantage of good access to a large local customer base, profound knowledge of local markets and synergies with other lines of business and have rolled out fibre networks with sizeable coverage in their home markets. Financing structures involve different set-ups from corporate financing to models with elements of project financing structures.

Network investments initiated by municipalities or regional governments represent another class of projects. For instance, municipal fibre networks account for a significant share of NGA coverage in Sweden. Under this model the municipality owns the passive infrastructure (dark fibre) and provides access on a wholesale-only basis to network and service providers. Models with public sector participation also comprise PPP structures for broadband which have been pioneered for example by local and regional public authorities in France. In these models private partners were selected to design, build and operate networks on a wholesale-only basis to support improved retail broadband offers by telecom providers. Private partners are entitled to the project revenues under a long-life concession contract plus potentially an up-front grant component which is necessary to ensure commercial viability. These projects often make use of project finance solutions.

Moreover, there have been few, but substantial ventures of construction companies in the area of NGA networks, in particular the well-publicised case of Reggefiber in the Netherlands which has already covered more than 20% of Dutch households with FttH19 (KPN to complete acquisition of a controlling stake in 2014).

While in the EU there is so far a limited track record for project finance solutions in broadband and NGA, indications from a range of stakeholders suggest that several actors are currently exploring new investment models which are modelled on project finance concepts and which could be more widely replicable20.

4. SOURCES OF PUBLIC SECTOR FINANCE IN EU-28

Public financing institutions are an important source of finance for European infrastructure. Both international institutions and national institutions are involved. The European Investment Bank (EIB) in particular plays a very important role in financing infrastructure projects in the CEF sectors.

4.1. International financial institutions

Several international financial institutions are active in EU-28 including EIB, EBRD, IBRD-World Bank and the Nordic Investment Bank (NIB). Only the EIB, as the EU bank, covers all Member States and as a result dominates the financing volumes.

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19 See KPN company reports and presentations.

20 In the US sales of passive mobile infrastructure to so-called "tower companies" has become a popular re-financing option for mobile operators. A few pioneers of such ideas also exist in Europe, such as the NL-based Communication Infrastructure Fund (CIF) that invests in passive fixed and mobile network infrastructure and associated facilities.
4.1.1. EIB

In the transport and energy sectors, the EIB typically provides individual loans directly due to the size of the transactions. It may also use its Structured Finance Facility to tailor its offerings to riskier, more complex projects, either on its own or with the Commission sharing the risk with EIB through one of the joint instruments described in section 8.1.

| Loans provided by the EIB within the EU in CEF sectors (’07-’12, in EURbn) |
|-----------------------|---|---|---|---|---|---|---|
|                       | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | Avg |
| Transport             | 10.1 | 13.5 | 15.7 | 13.2 | 14.3 | 10.1 | 12.8 |
| Energy - transport and supply | 1.6  | 3.9  | 5.3  | 5.3  | 3.5  | 3.5  | 3.8  |
| Telecommunications    | 2.2  | 1.5  | 2.6  | 2.0  | 1.4  | 1.5  | 1.9  |
| TOTAL CEF SECTORS     | 13.9 | 19.0 | 23.6 | 20.5 | 19.1 | 15.0 | 18.5 |

Source: EIB annual statistical reports

Table 1: EIB lending to CEF sectors in the EU (2007 – 2012) 21

EIB’s lending to strategic transport projects (incl. TEN-T), projects falling under the competitive and secure energy objective (incl. TEN-E) and telecommunications has risen from EUR 14 billion in 2007 to a high of 24 billion in 2009 before settling at around 20 billion per annum in 2010 and 2011. In 2012 the combined financing for those sectors reached EUR 15 billion. The downward trend continues with some EUR 12 billion in 2013 and the target for 2014 set between EUR 10.5 and 12.5 billion. For more details see Appendix I.

4.1.2. EBRD

The European Bank for Reconstruction and Development (EBRD) provides products such as loan and equity finance, guarantees, leasing facilities and trade finance to companies from Central Europe to Central Asia and the southern and eastern Mediterranean. The focus is on private sector development and support for the transition to a market economy. EBRD operates in 10 EU Member States: Bulgaria, Czech Republic 22, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia. EBRD lending to transport and energy in its EU countries of operation has fluctuated between EUR 50 million and EUR 400 million in the last five years. For more details see Appendix I.

4.1.3. IBRD-World Bank

The World Bank comprises two institutions with 188 member countries: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), the latter of which focuses exclusively on the world’s poorest countries. IBRD aims to reduce poverty in middle-income and creditworthy poorer countries by promoting sustainable development through loans, guarantees, risk management products, and analytical and advisory services. EU Member States eligible for World Bank Borrowing are Bulgaria, Latvia, Poland and Romania. Since 2007, the

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21 Please note that some totals do not add up due to rounding

22 The EBRD ceased making new investments in the Czech Republic in 2007 as the country "graduated" from EBRD support. However the Bank still manages a portfolio in the country
IBRD has only financed 2 transport projects totalling USD 175 million in the EU. For more details see Appendix I.

4.1.4. NIB

NIB is an international financial institution owned by the governments of five Nordic and three Baltic countries: Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden. The bank provides long-term loans and guarantees to projects that strengthen competitiveness of the Nordic-Baltic region and enhance the environment. The projects can involve large investments by the corporate sector or investments by small and medium-sized enterprises, targeted in cooperation with financial intermediaries. NIB has operations in its Nordic and Baltic member countries: Denmark, Estonia, Finland, Latvia, Lithuania and Sweden, which are all EU members. In addition to that, NIB has also operations in Poland, which is a "focus country" for the Bank. NIB lending to transport, energy and broadband projects in its countries of operation has fluctuated between EUR 75 million and just over EUR 290 million in the last five years. For more details see Appendix I.

<table>
<thead>
<tr>
<th>Volume</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR 14-24 billion p.a.</td>
<td>Lending, risk-sharing</td>
</tr>
<tr>
<td>&lt; 1 billion p.a.</td>
<td>Full range of debt and equity</td>
</tr>
<tr>
<td>&lt; 1 billion p.a.</td>
<td>Lending</td>
</tr>
<tr>
<td>&lt; 1 billion p.a.</td>
<td>Lending</td>
</tr>
</tbody>
</table>

Table 2: Summary of the activity of International Financial Institutions (IFIs) in the EU

The EIB with its lending volume of circa EUR 19bn to TEN projects clearly stands out as the largest IFI. Given its expertise and geographic scope covering the whole EU it is clearly the logical partner for the implementation of financial instruments under CEF.

4.2. Long-term investors or lenders

This chapter briefly describes the infrastructure-related activities of the largest long-term investors or lenders, of which there is generally one in each Member State.

4.2.1. CDC

Caisse des Dépôts et Consignations (CDC) group is a French long-term investor at the service of public interest and economic development. CDC is a State-owned group that operates in various areas: it manages funds held in regulated savings accounts and invests these on a secure basis in projects in the public interest, particularly social housing, acts as public banker, manages pension schemes, invests in regional and local development alongside local authorities, acts as a long-term investor in the French and European economy.

CDC provides loans to sustainable infrastructure projects: in 2012 it granted EUR 2.7bn to fund 105 transactions. Equally, CDC invests circa EUR 400m p.a. in local infrastructure developments.

A major share of the EUR 2.7bn of loans went to transport projects: EUR 1.6bn. Between 2008 and 2012, the CDC provided EUR 8.1bn of loans to transport projects.
The group has a specialised subsidiary CDC Infrastructures which makes minority equity investments in companies engaged in the transport, energy and telecoms sectors. In 2012 it invested EUR 15m in two projects, bringing the managed portfolio to EUR 1bn invested in 17 projects. CDC Group is also one of the cornerstone investors of the Marguerite fund, having committed EUR 100m.

4.2.2. CDP

Cassa Depositi e Prestiti (CDP) of Italy is a key partner for public entities, the development of infrastructure projects and the growth and international expansion of Italian enterprises. It is under public control. CDP manages a major share of the savings of Italians – postal savings – which it uses to provide financing to major strategic sectors: transportation networks and local public services, public building and social housing, energy and communication, support for SMEs and export finance, research and innovation, social housing, the environment and renewable energy.

CDP actively supports the development of Italy’s infrastructure. It supports public interest projects and companies for investments in infrastructure to be used in delivering public services. CDP uses corporate finance and project finance solutions, as well as participating in domestic and international infrastructure equity funds focused on transport and energy infrastructures. This includes the Marguerite Fund of which the CDP is a cornerstone investor with EUR 100m commitment. Over the past five years, CDP lent between EUR 1.5bn and EUR 2.9bn p.a. to involving infrastructure to be used in delivering public services. In 2012, CDP lent EUR 2.7bn to infrastructure projects, +27% from the EUR 2.1bn in 2011.

4.2.3. ICO

Instituto de Crédito Oficial (ICO) is a Spanish State owned bank. It has the legal status of a credit institution and is defined as the State’s Financial Agency. ICO’s purpose is to support and foster economic activities which contribute to the growth and the improved distribution of national wealth. These aims are pursued by ICO in its twofold function. As a State-owned Bank ICO provides loans to fund investment operations inside and outside of Spain. As State’s Financial Agency ICO manages the official funding instruments that the Spanish State provides for encouraging exports and development aid.

In the field of infrastructure, ICO provides direct financing via its Structured Finance window. ICO can offer loans for carrying out projects in Spain in the energy, infrastructure and environment sectors. Both corporate finance and project finance structures are eligible. In 2012 circa EUR 1bn of funding was provided to large capital intensive investment projects.

In 2012, ICO’s fully owned fund manager, Axis, launched an infrastructure equity fund, Fond-ICOinfraestructuras. The fund was seeded with a commitment of EUR 500m from ICO and focuses on minority equity investments in greenfield infrastructure (transport, energy generation and distribution and social infrastructure). ICO is also one of the cornerstone investors of the Marguerite Fund, having committed EUR 100m.

4.2.4. KfW

By far the largest of the national investment banks run by EU governments, the German Kreditanstalt für Wiederaufbau (KfW) operates across a wide range of products including SME finance, venture capital, energy efficiency, renewables, municipal infrastructure, education, research & development and others. With the exception of products targeted to SMEs and private individuals, which are distributed by commercial banks, KfW generally deals directly with larger corporate clients and
municipalities. KfW’s public development business benefits from a German government guarantee enabling the bank to operate with high leverage. KfW IPEX, which is one of the main lenders to transport and energy infrastructure projects in the EU, has been lending EUR 5-7 billion per annum over the last 5 years. KfW is also one of the cornerstone investors of the Marguerite Fund, having committed EUR 100m.

<table>
<thead>
<tr>
<th></th>
<th>Volume p.a.</th>
<th>Countries of ops</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC</td>
<td>EUR 3.1bn</td>
<td>France (+EU)</td>
<td>Loans, equity</td>
</tr>
<tr>
<td>CDP</td>
<td>EUR 1.5 to 2.9bn</td>
<td>Italy (+EU)</td>
<td>Loans, equity</td>
</tr>
<tr>
<td>ICO</td>
<td>EUR 1bn</td>
<td>Spain</td>
<td>Loans, equity</td>
</tr>
<tr>
<td>KfW</td>
<td>EUR 5-7 billion</td>
<td>EU</td>
<td>Loans, equity</td>
</tr>
</tbody>
</table>

Table 3: Summary of the activity of main NDBs in the EU

4.2.5. Poland

Polish Investment Programme

The Polish national development bank, Bank Gospodarstwa Krajowego (BGK) currently lends to infrastructure projects. The Polish government intends to bolster its capacity by creating a separate special investment vehicle capitalised with up to PLN 10 billion (circa EUR 2.4bn) from sale of shares in state owned companies. The special investment vehicle, called PIR, would support large profitable infrastructure projects via loans and equity and mezzanine financing.

4.2.6. UK

Green Investment Bank

The Green Investment Bank was set up in 2012 with GBP 3 billion in capital in order to address the climate change investment challenge, notably in the area of renewable energy. The GIB has been focusing on completing its team in the second half of 2012 and has since then already completed first transactions.

4.2.7. Other national development banks

In Croatia, the Croatian Bank for Reconstruction and Development (HBOR) plays the role of a development and export bank established with the objective of financing infrastructure and the reconstruction and development of the Croatian economy. The Hungarian Development Bank, established in 2006, provides funding for growth to Hungarian enterprises and promotes improvements in local and regional infrastructure, Programme countries in general are reflecting on setting-up national promotional banks in order to support financing of the economic recovery.

Other member states without such institutions are in a similar process of setting up new public financial institutions, or regrouping and boosting the activity of existing ones. Not all of these, however, focus on infrastructure financing. In the UK, the British Business Bank, launched in October 2013, aims to tackle a long-term shortage of funding for small and medium-sized businesses by focusing on start-ups and early-stage companies with growth potential that have difficulty raising

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finance from commercial banks and investors. It is currently run directly by the Department for Business, Innovation and Skills and is due to become fully operational by autumn 2014, once European Commission state aid clearance is received.

The new French Banque Publique d'Investissement has been regrouping several existing institutions focusing on SME support. The Bulgarian Development Bank has been restructured and took over the activities of the Bulgarian Encouragement Bank with a view to enhance its support to SMEs.

4.2.8. Export credit agencies

Export Credit Agencies (ECAs) are public or private institutions providing support to exporters via credit insurance, guarantees or the provision of loans. Most of the ECAs operate in infrastructure sectors and as such participate to some extent in the financing of infrastructure. Many have a focus on renewable energy projects. However, coverage can also extend to railways and other transport (SE), conventional power generation (DK, SE) and telecommunications (DK, SE).

The offered coverage is generally the classical political and commercial guarantee where rules exist both within the EU and internationally in the form of the OECD consensus. Some do however offer a securitisation guarantee and the Danish EKF can provide direct lending until the end of 2015.

Unusually, the Italian ECA, SACE has a dedicated team and department for projects that do not fall under the traditional export credit activity. The review of such projects is conducted on a case by case basis, taking into consideration the creditworthiness of the counterparties involved (e.g. borrowers, sponsors) and the structure of the project including the security package.
5. **Sources of Private Sector Finance in EU-28**

Infrastructure projects financed by private sector players can be roughly split in two main categories: projects financed on a *corporate finance basis* or on a *project finance basis*. In simplified terms, corporations own and operate various assets and projects. They finance themselves at the corporation level (equity, debt) and then allocate available funding from their balance sheet freely between assets. A corporation provides security to its creditors to all of the assets it owns. Under project finance, the assets-projects are ring-fenced and are funded (equity, debt) on a non-recourse basis. If the project fails creditors cannot claim other assets than those within the ring-fenced structure. Public Private Partnerships (PPPs) are a specific variant of project finance, where a public authority grants a concession or a contract to a private company to provide a service to the public – a specific section is dedicated to PPPs. Project finance structures also requires a certain mix of equity and debt, normally around 10-20% and 80-90%, respectively. Traditionally, the companies selected to build, maintain and operate infrastructure projects have provided the equity. In the last decade, however, a number of infrastructure funds have emerged, enabling the companies to contribute less equity from the outset or to sell (part of) their equity stake once the project looks likely to succeed.

![Figure 2: Composition of infrastructure finance across institutional sectors (2006-2009 average, in percent of GDP)](source: Eurostat, Projectware, EB/EPEC)
Figure 3: Composition of infrastructure finance across sources, by sector of activity (2006-2009 EU average, in percent of GDP)

On the debt side, the banks have traditionally been the major providers in the EU (representing between 90% and 95% of debt volumes). However for various reasons they are much less able to supply sufficient volume at a price and maturity that is commensurate with the financial constraint of most projects. Alternative sources of debt financing are therefore needed.

Institutional investors such as insurers, pension funds, Sovereign Wealth Funds and other structures are increasingly interested in investing in infrastructure debt and are therefore gradually stepping in for the retreating banks.

5.1. Corporate financing

Private investment in infrastructure using corporate finance is more closely associated with the Energy sector (Transmission System Operators) and the Telecom sector. However in the Transport sector there are areas where corporate financing is dominant (such as ports and airports).

5.1.1. Transmission System Operators (TSO)

The expansion of the gas and electricity transmission networks in predominantly financed through corporate financing. The transmission system operators, as stand-alone companies or part of a bigger capital group (e.g. the remaining of vertically integrated utilities in the past), build new projects with accumulated capital and/or borrow money against the strength of their (their holding companies’) balance sheet. Constituting reasonably low risk and highly regulated activity, several TSOs have very good access to capital market financing. Some of the recent bond issuing examples include:

- RTE (electricity TSO in France, limited company, subsidiary of the EDF Group) issued to date some EUR 5.4bn through six issues of maturities of 7 to 12 years.
• In 2013 ELIA\textsuperscript{24} (electricity TSO in Belgium with a 60\% stake in 50Hz TSO in Germany) successfully issued a dual-tranche Eurobond of its EUR 3 bn EMTN programme, consisting of a EUR550m 15-year tranche and a EUR200m 20-year tranche\textsuperscript{25}.

• Bulgarian Energy Holding, mother company of Bulgartransaz, Bulgarian gas TSO, issued in 2013 EUR 500m 5 year bond\textsuperscript{26}.

• Vier Gas Transport, owner of a German gas TSO Open Grid Europe, has raised in 2013 EUR 1.5bn through a dual-tranche bond refinancing of the German gas network acquisition the previous year\textsuperscript{27}.

However, many TSOs are expected to invest substantially more than in the past (with the new CAPEX constituting a substantial part or even exceeding their RAB) which will lead to increasing their leverage and putting pressure on (or affecting downwards) their credit rating\textsuperscript{28} (the credit rating situation of the sector is depicted in the table below). Furthermore for a number of TSOs which undergo ownership unbundling process, bond financing through mother companies may no longer be an option (they will have to rely on the strength of its own corporate balance sheet). A similar situation has already taken place in the midst of the credit crisis where number of utilities found themselves with a high indebtedness and an urgent need to decrease the leverage (e.g. German utilities such as E.on, RWE). It resulted in a spin-off of a number of independent transmission companies.

There are also several TSOs for which bond financing is not an option. For a number of smaller TSOs the limited investment needs in the past never called for going to the market directly (accumulated capital and often EIB and other bank financing sufficed). Such companies are often not even rated by one of the three leading credit rating agencies.

Moreover, for some TSOs which, in the past, sourced debt directly from the market, the recent substantial deterioration of the sovereign rating negatively impacted the yield expectation or at all closed the access.

\textsuperscript{24} On 31 Dec 2012 more than EUR 6.18bn in assets, EBITDA of EUR 455mln, EUR 5.84bn in RAB
\textsuperscript{26} http://www.novinite.com/articles/155145/Bulgaria's+BEH+Raises+EUR+500+M+from+Bond+Issue
\textsuperscript{27} The pricing on the bonds was much lower than the margins of Open Grid’s acquisition loan signed in 2012. The seven-year bond tranche was priced at 68bp and the 12-year tranche at 95bp, inside initial guidance of 75bp and 100bp. http://pfie.reutersmedia.net/open-grid-bond-priced/21089369.article
### Table 4: Published credit ratings of European TSOs

<table>
<thead>
<tr>
<th>Country</th>
<th>Electric power</th>
<th>TSO</th>
<th>Rating base</th>
<th>Current rating</th>
<th>Past trend</th>
<th>Future trend</th>
<th>Natural gas</th>
<th>TSO</th>
<th>Rating base</th>
<th>Current rating</th>
<th>Past trend</th>
<th>Future trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>Bulgartransgas EAD</td>
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<tr>
<td>CY</td>
<td>Cyprus Transmission System Operator</td>
<td></td>
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<tr>
<td>DE</td>
<td>50Hertz Transmission GmbH</td>
<td>O</td>
<td>BAA</td>
<td>26.05.2010</td>
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<td>Öffnet - VNG Gasmontage GmbH</td>
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<tr>
<td>DE</td>
<td>Bayern Transport AG</td>
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<td>06.07.2008</td>
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<td>Current rating</td>
<td>Past trend</td>
<td>Future trend</td>
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<td>Past trend</td>
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<td>HU</td>
<td>MAVIR Hungarian Transmission System Operator Company Ltd</td>
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<td>BE-25.11.2008</td>
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<td>IE</td>
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<tr>
<td>IT</td>
<td>Terna - Rete Elettrica Nazionale SpA</td>
<td>O</td>
<td>A+ 10.02.2008</td>
<td>Snan-Rate GAS S.p.A.</td>
<td>M</td>
<td>A+ 19.05.2010</td>
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<tr>
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<td>Lietuvos Dujos S.A.</td>
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<tr>
<td>LV</td>
<td>AS Augspurguma Tilta</td>
<td>M</td>
<td>BAa3 27.04.2009</td>
<td>Latvijas Gāzes S.A.</td>
<td>n/a</td>
<td></td>
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</tr>
<tr>
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<td></td>
<td>GAZ System S.A.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Source: Compilation by Roland Berger on the basis of credit rating published by Moody's, Fitch or S&P. Information as of mid-2011. Standalone credit rating: O; Credit rating of parent company: M; First credit rating indicated with a star. The column “Future trend” based on information from S&P or Moody's.
5.1.2. Integrated transport infrastructure holdings

Using different data sources, McKinsey (2010) estimates that infrastructure spending in the EU amounted to about USD 400 billion in 2010. Transport, dominated by roads, ahead of ports, airports and rail, has a share if about 38%.

There are several models of corporate finance of transport infrastructures in the EU, with important differences according to the transport sector (railways, ports, airports, motorways) and to level of involvement of the public sector. In several Member States, financing of transport infrastructures is done by means of publicly-owned holdings that traditionally have had access to institutional investors and direct or indirect State support. Of the current structures and modes used by the public sector in the EU to ensure financing of transport infrastructures, there is a trend towards the "landlord" model, which offers clear advantages (OECD 2012). Some examples quoted in the OECD report29 are:

- Rotterdam

  The Port of Rotterdam is a "landlord" port. All the necessary powers and responsibilities are vested in the Port Authority, to allow it to plan, develop and manage the port land and sea areas under its responsibility as well as the common user infrastructure within the ports' jurisdiction. Following reforms made in 2004, the Port Authority is a public corporation; its shares are currently owned by the municipal government (70%) and the national government (30%). The corporation structure combined with a landlord port model means the organisation is publicly owned but commercially driven.

- Gateway airports

  Traditionally, the major gateway airports in the EU were run solely by government departments and authorities. Governments were responsible for provision of all "airside" infrastructure and often most of the "landside" infrastructure as well, including the major passenger terminals. In recent years, most governments and their authorities have continued to be responsible for "airside" infrastructure but have moved towards "landlord" models in respect of the operation by passenger and cargo terminals by corporations.

- Denmark, Copenhagen

  For the Fehmarn Belt link between Denmark and Germany, the government decided to adopt the successful model used for fixed links, i.e. a government-owned corporation established under corporation law, a government-secured loan and financing via users fees. A state-owned company is in charge of the preparatory work, planning, approval, construction, financing, ownership, operation and maintenance of the fixed link.

5.1.3. Telecom operators

Up to this point corporate financing is the norm for investments in broadband (access) networks in the EU. These investments form part of normal CAPEX of commercial market players (vertically-integrated "incumbents", cable TV providers, alternative and mobile-only operators etc.).

29 Strategic Transport Infrastructure needs to 2030 (OECD 2012)
Total corporate debt outstanding of the 10 largest EU telecom operators (by revenue)\textsuperscript{30} is currently around EUR 223 billion, most of which was raised in bond markets. Approximately 45\% of total debt falls due within 5 years, about three-quarters has a remaining maturity of less than 10 years and only slightly more than 10\% is up for redemption/repayment more than 20 years from now (see figure 3).

![Figure 4: Total debt of top 10 EU telecom operators by maturity (EUR bn. left axis) and cumulative share of total debt by maturity (%) right axis](image)

Source: Bloomberg, own presentation

Access to suitable debt financing remains crucial for the ability of market players to undertake network investments. As a result of the broader economic climate and potentially also due to idiosyncratic weaknesses, key financial metrics of some operators have eroded, leading to a deterioration of credit quality (see figure 5\textsuperscript{31}).

\textsuperscript{30} Belgacom, British Telecom, Deutsche Telekom, KPN, Orange, Telecom Italia, Telefonica, Telekom Austria, TeliaSonera, Vodafone

\textsuperscript{31} Key to chart: "-1" = one notch downgrade, "+1" = one notch upgrade; companies are ordered by April 2014 rating shown in data labels; data label superscripts: "0" = neutral outlook, "-" = negative outlook, "R" = under review. Ratings are senior unsecured domestic or senior unsecured foreign ratings, as applicable.
Figure 5: Moody’s European telecom operator credit ratings: change in notches from mid-2007 to April 2014, current rating and issuer outlook

For the telecommunications industry which relies heavily on long-lived fixed assets credit quality exerts measurable influence on the cost of capital and the financial leeway to finance new investments. This is inter alia exemplified by yield spreads between different rating qualities; e.g. 10-year yields of telecom bonds with BBB rating topped yields in the single A range by approximately 50 basis points on average during the last 2 years.\(^{32}\)

The EIB has lent to several telecom operators on a corporate finance basis to fund broadband network upgrades or roll-outs. For example, Portugal Telecom turned to the EIB to finance part of its roll-out of Fibre-to-the-Home (FTTH) connections for which it obtained inter alia EUR 300m of EIB senior loans (in three tranches of EUR 100m spread across 2009 - 2011). Total EIB signatures for broadband since 2003 sum up to c. EUR 16.5bn (see figure 6), the bulk of this being corporate loans. Broadband corporate loans have benefited from a tenor of 7 to 12 years. In contrast, one publicly promoted project in the French department of Haute Savoie received a tenor of up to 20 years on a project finance basis.

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\(^{32}\) Average spread between Bloomberg yield indices for 10-year communications sector bonds with BBB and A ratings, respectively.
In recent years established players have hardly tapped capital markets for additional equity. In the last five years there were only two larger transactions, a EUR 3bn rights issue by KPN in spring 2013 and a sale of EUR 1bn worth of treasury stocks by Telefonica around two months earlier. Neither transaction was directly linked to the financing of investments. Generally speaking, equity issuance for larger-scale network upgrades would face careful investor scrutiny and would need to demonstrate that these investments are value-accretive.

5.2. Project finance

Within the scope of the three CEF sectors, project finance is mostly associated with standalone transport assets such as motorways and bridges, often PPPs. However, recently a good deal of transactions in the energy sector (such as off-shore wind farm grids or gas storage projects) and some transactions in the telecom sector have been financed using this technique.

5.2.1. Overview of project finance activity in the CEF sectors in the EU28

In 2013, 28 project financed transactions falling under the CEF sectors reached financial close in the EU. This represented a total financing volume (debt + equity) of EUR 22.1bn for the full market inclusive of all types of transactions (primary financing, asset acquisition and refinancing). The 2013 figures showed a marked increase in activity compared to 2012, when 30 deals worth EUR 17.9bn reached financial close, representing an increase of 23% in EUR deal value. This is some 49% below the peak year of 2007 when 62 projects representing EUR 43.2bn of value reached financial close.

Source: Infrastructure Journal Database, 31-03-2014, converted from USD using average annual exchange rate
Over the period 2006-2013, primary financing (ie the first project financing of an asset) represents on average circa 50% of the transaction EUR volumes, with refinancings and asset acquisitions/privatisations representing circa 20% and 30% respectively.

5.2.1.1. CEF sectors compared to the total EU28 project finance market

Figure 8: Project finance volume in EU 28: CEF sectors vs other sectors (2006 – 2013) in EUR bn

Between 2006 and 2013, in EUR value terms, the overall Project Finance volumes in the EU28 varied between the 2012 low of EUR 32.8bn and the 2007 peak of EUR 88.3bn. In 2013 the total Project Finance market represented EUR 39.0bn (of which 57% went to CEF sector projects). On average, CEF sectors represent circa 50% of the total project finance in EUR volume of projects (debt + equity).
Over the same period, the overall Project Finance market in the EU28 varied between the 2012 low of 179 transactions and the 2008 peak of 377 deals. In 2013 a total of 186 transactions were recorded by the Infrastructure Journal database (of which 15% went to CEF sector projects). On average, throughout the period CEF sectors represent circa 15% of the total project finance in EUR volume of projects (debt + equity). The much higher number of non-CEF sector projects is due to the fact that most of these transactions are in the renewable energy and social sector (healthcare, education). These projects tend to be smaller than projects in the CEF sectors.

5.2.1.2. Sector sub-distribution within CEF sectors

In 2013 EUR 14.7bn worth of projects were from the transport sector vs EUR 7.2bn for energy networks and EUR 0.1bn from the telecom sector. The transport sector is the strongest of the CEF sectors in terms of EUR value, with annual deal volumes of between EUR 14bn and EUR 32bn. Energy networks attract between EUR 0.2bn and EUR 10bn per annum of financing. The remainder goes to telecoms (between nil and EUR 7bn p.a.)
Figure 10: Project finance volumes and number of transactions in EU 28, by CEF sector, 2006 - 2013 (in EUR bn)

In project finance, the transport sector is by far the largest sector among three CEF sectors. Between 2006 and 2013, it represented on average 79% of the CEF sector project finance volume (debt + equity). Energy networks represent on average 16% of the project finance volumes during the same period. Telecom projects are the smallest with circa 6% of total project volume between 2006 and 2013.

Relative share of sectors in CEF project finance EUR volumes in the EU28, ('06-'13)

Source: Infrastructure Journal database, converted to EUR using annual average FX rate

Figure 11: Relative share of sectors in total CEF sector project finance volumes in EU28 (2006-2013)

5.2.1.3. Geographical distribution across EU Member States

Between 2006 and 2013, the UK was the largest project finance market for the CEF sectors with EUR 51bn of transaction value, followed by France (EUR 42bn) and Spain (EUR 26bn).
In number of transactions in the CEF sector during the same period, the largest market in the EU was Spain with 99 transactions, followed by the UK (59) and France (37).

In 2013, the UK remained the largest market with EUR 7.4bn of transaction, followed closely by Italy (EUR 4.2bn) and Germany (EUR 2.6bn). France, the usual leader represented only EUR 0.3bn of transactions in 2013.

5.2.1.4. Comparison with Canadian private financing schemes

According to the Infrastructure Journal database, there were 22 project finance transactions in Canada in the CEF sectors between 2006 and 2013 representing EUR 11.1bn in value terms. By
comparison, over this period, this situates the Canadian market between Portugal (EUR 10.6bn, 25 transactions) and Italy (EUR 11.9bn, 25 transactions).

All but three transactions from the CEF sectors (73%) were in transport. According to the same database, on average, in terms of debt financing, Canada has a greater share of bond financing than Europe: between 2006 and 2013, 15% of all debt financing volume was via bonds (EUR 1.3bn out of EUR 8.7bn debt) which is twice the share recorded in the EU. Bonds were part of the financing structure in seven transactions (32% of the cases).

5.2.2. Equity sponsors

Equity sponsors investing in infrastructure projects in the CEF sectors are most often infrastructure equity funds, investment arms of corporates, Sovereign Wealth Funds (SWFs).

Between 2006 and 2013, the volume financed by equity sponsors has followed the downward trend of commercial banks. In 2006 sponsors invested EUR 6.4bn in transactions in the CEF sectors within the EU.34 This decreased to EUR 2.8bn in 2013 which represents a decrease of 57%. The 2006 figures are increased by the privatisation of the French motorway company SANEF by Abertis representing EUR4.8bn of equity alone (twice the full 2013 market).

<table>
<thead>
<tr>
<th>Equity Sponsor</th>
<th>EURm</th>
<th>Equity Sponsor</th>
<th>EURm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abertis</td>
<td>4,786</td>
<td>Autostrade Lombarde</td>
<td>471</td>
</tr>
<tr>
<td>Interbiak SA</td>
<td>240</td>
<td>Golar LNG</td>
<td>456</td>
</tr>
<tr>
<td>AIG</td>
<td>205</td>
<td>Tangenziale Esterna di Milano</td>
<td>324</td>
</tr>
<tr>
<td>Global Infrastructure Partners</td>
<td>205</td>
<td>Manchester Airports Group</td>
<td>180</td>
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<tr>
<td>ACS Group</td>
<td>140</td>
<td>IFM Investors</td>
<td>99</td>
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<td>Cintra</td>
<td>120</td>
<td>Impresa Pizzarotti</td>
<td>85</td>
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<tr>
<td>GEK-Terna</td>
<td>120</td>
<td>Innisfree</td>
<td>70</td>
</tr>
<tr>
<td>Macquarie</td>
<td>86</td>
<td>Siemens</td>
<td>70</td>
</tr>
<tr>
<td>Sacyr Vallehermoso</td>
<td>70</td>
<td>3i</td>
<td>70</td>
</tr>
<tr>
<td>ALPINE Group</td>
<td>61</td>
<td>Aena</td>
<td>64</td>
</tr>
<tr>
<td><strong>TOP 10 - 2006</strong></td>
<td><strong>6,034</strong></td>
<td><strong>TOP 10 - 2013</strong></td>
<td><strong>1,889</strong></td>
</tr>
<tr>
<td>o/w non-EU sponsors</td>
<td>8%</td>
<td>o/w non-EU sponsors</td>
<td>5%</td>
</tr>
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</table>

**Table 5: Equity sponsor league table evolution 2006 - 2013**

Investment in the CEF sectors of European infrastructure has been an attractive investment opportunity mainly for EU investors: 92% of the top 10 in 2006 were from the EU, this has increased in 2013 to 95%.

34 Source: Infrastructure Journal Database, 31-03-2014, converted from USD using average annual exchange rate
The composition of the leading sponsors is very different between 2006 and 2013 – no single sponsor is present in the top 10 in both years. It is interesting to note that in both years the list is dominated by (EU) trade players; only the minority are financial investors.

The Dutch pension fund PGGM and the BAM PPP, the sponsor arm of the Dutch construction company BAM have formed a joint venture "BAM PPP PGGM Infrastructure Coöperatie". The JV either received from BAM PPP or successfully brought to financial close 12 projects worth in excess of EUR 160 million of market equity value. As BAM PPP retains a stake this provides alignment of interest and the possibility to recycle equity into new projects. At the same time it provides the pension fund with the assets it seeks. The joint venture is currently bidding on 13 new projects.

A new category of infrastructure equity funds has sprung up, most requiring rates of return of around 15% with construction companies even setting up their own listed funds to sell their mature, performing assets in order to free up capital for new projects (Bilfinger Berger, John Laing, Hochtief). Most of these funds focus on brownfield projects or those that are past construction, reflecting the lack of appetite for the risk inherent to new projects.

In 2013, globally fund managers successfully brought 63 unlisted infrastructure equity funds and managed accounts to final close, raising a total of EUR 32bn in the process. This is an increase of one third compared to the EUR 24bn raised across 60 vehicles in 2012. One sixth of the 2013 funds raised came from the close of the Brookfield Infrastructure Fund II alone, which raised EUR 5.2bn. Europe was the main geographical focus for nearly half of the vehicles which in aggregate raised EUR 11.6bn of funds in 2013. This is nearly twice as much as the EUR 6.7bn raised across 23 vehicles in 2012.

### Equity unlisted funds raised in 2013 with Europe as main focus (Top 5)

<table>
<thead>
<tr>
<th>Fund</th>
<th>Final close</th>
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<tr>
<td>1 Macquarie European Infrastructure Fund IV</td>
<td>May-13</td>
<td>2,750</td>
</tr>
<tr>
<td>2 EQT Infrastructure II</td>
<td>Jan-13</td>
<td>1,925</td>
</tr>
<tr>
<td>3 AXA Infrastructure Generation III</td>
<td>Mar-13</td>
<td>1,450</td>
</tr>
<tr>
<td>4 DIF Infrastructure III</td>
<td>Mar-13</td>
<td>800</td>
</tr>
<tr>
<td>5 Innisfree PFI Secondary Fund II</td>
<td>Mar-13</td>
<td>634</td>
</tr>
</tbody>
</table>

**TOP 5 Europe focused funds reaching final close in 2013** | 7,559 | 65%

% of total

Source: Preqin database, 03-04-2014

### Table 6: Equity unlisted funds raised in 2013 with Europe as main focus (Top 5)

As of April 2014, 148 infrastructure equity funds are fundraising seeking to raise EUR 66bn. Funds with principally European focus represent EUR 22bn across 53 vehicles. Funds that are eligible to make greenfield investment represent some 73% of funds raised globally and 63% of funds with European focus, according to the Preqin database.

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35 Example of quoted by Antin, from Infrastructure in an article in the public domain.
36 Preqin database as of 03-04-2014
Two infrastructure equity funds with focus on Europe reached final close in the three months leading to April 2014:

- January 2014: InfraVia European Fund II, EUR 530m
- January 2014: Partners Group Global Infrastructure 2012, EUR 1,000m

As of April 2014, Preqin estimates that infrastructure funds with European focus have USD 33bn (EUR 24bn) of available capital for investment, close to an all-time high of USD 34bn (EUR 25bn) of December 2013.

5.2.3. Commercial banks

Historically, commercial banks constituted one of the leading sources of finance to European privately financed infrastructure projects. This is true across all sectors covered by infrastructure finance and in the three CEF focus sectors in particular.

In 2006 in the build-up to the lending peak of 2007, banks lent EUR 23.4bn to projects in the EU 27 across the three sectors. In 2013, the lending volume was of EUR 9.4bn which represents a decrease of 60% vs 2006. The reasons for the decrease are multiple: the financial crisis negatively impacted the capacity of the public sector to invest, many banks suffered losses and have abandoned the infrastructure lending sectors without being fully replaced as others had to reduce their overall lending volume in order to comply with stricter capital requirements given their level of capital; also the competition from non-banking sources of debt was important.

These multiple effects have significantly changed the list of leading banks in lending to projects in the EU28:

<table>
<thead>
<tr>
<th># MLA</th>
<th>2006 League Table EURm</th>
<th>2013 League Table EURm</th>
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<tbody>
<tr>
<td>1 Royal Bank of Scotland</td>
<td>3,769 *</td>
<td>721</td>
</tr>
<tr>
<td>2 Société Générale</td>
<td>2,386</td>
<td>591</td>
</tr>
<tr>
<td>3 BBVA</td>
<td>2,305</td>
<td>497</td>
</tr>
<tr>
<td>4 Dresdner Kleinwort</td>
<td>1,929</td>
<td>451</td>
</tr>
<tr>
<td>5 Natixis</td>
<td>1,514</td>
<td></td>
</tr>
<tr>
<td>6 Crédit Agricole Group</td>
<td>1,188 *</td>
<td>394</td>
</tr>
<tr>
<td>7 La Caixa</td>
<td>1,163</td>
<td>366</td>
</tr>
<tr>
<td>8 Barclays</td>
<td>1,138</td>
<td>362</td>
</tr>
<tr>
<td>9 HSBC</td>
<td>1,138</td>
<td></td>
</tr>
<tr>
<td>10 JPMorgan</td>
<td>1,138</td>
<td></td>
</tr>
<tr>
<td><strong>TOP 10 - 2006</strong></td>
<td><strong>17,668</strong></td>
<td><strong>TOP 10 - 2013</strong></td>
</tr>
<tr>
<td><strong>o/w non-EU banks</strong></td>
<td><strong>6%</strong></td>
<td><strong>4,297</strong></td>
</tr>
<tr>
<td><strong>Full League Table - 2006</strong></td>
<td><strong>23,477</strong></td>
<td><strong>Full League Table - 2013</strong></td>
</tr>
</tbody>
</table>

Note: (*) bank included both in 2006 and 2013 Top 10 league tables
Converted to EUR using annual average exchange rates
Source: Infrastructure Journal database, 03-04-2014; includes refinancings and asset acquisitions

37 Preqin database, as of 03-04-2014
38 Source: Infrastructure Journal Database, 03-04-2013, converted from USD using average annual exchange rate
Table 7: Mandated lead arranger league table evolution 2006 - 2013

In 2006, all but one of the top ten lending banks were from the EU and the single most active bank, the Royal Bank of Scotland, lent on its own EUR 3.8bn. In 2013, only two banks from the 2006 list remain: Royal Bank of Scotland and Crédit Agricole (#1 and #6 respectively in 2006). Banks from Japan and Canada represent 47% of lending of the top ten group with the top two lenders being from Japan. Between themselves the top three lenders provided circa EUR 1.8bn which is only half of what the Royal Bank of Scotland financed by itself in 2006.

The pressure on banks to free up capital and focus on core activities was expected to generate a significant dealflow of secondary transactions of banks selling down portfolios of their infrastructure loan book. Several publicly known transactions did occur and all concerned the Bank of Ireland (BoI) which had to divest as a part of a restructuring of its global activities.

Secondary sale of Bank of Ireland’s (BoI) Project Finance loans

In October 2011 BoI sold a USD 1 billion portfolio of loans to power projects to the US lender GE Energy Finance Services. This transaction was conducted at a discount of 5 to 10% to par. One month later, in November 2011, BoI divested EUR 590m worth of infra and energy loans to the Japanese lender Sumitomo Mitsui Banking Corporation (SMBC). In June 2012 the Bank of Ireland (BoI) sold EUR 200m of UK infra loans to Aviva Special PFI LP (Commercial Finance division). The sale was done at a discount of 19% to par and the book is now managed by Aviva Investors. Later that month BoI sold EUR 270m book of UK Project Finance loans at a discount of 16.5% to par to the Danish pension fund Pension Denmark. The portfolio is managed by JPMorgan AM Infrastructure Debt group.

However no further large bank portfolio transactions of pre-crisis loan books took place despite interest from many banks to dispose of their long-dated infrastructure loans. The banks have lent in the pre-crisis years at a margin of 70 to 90 basis points over the benchmark rate. Today, the debt fund investors expect a return of circa 200 basis points for the same credit risk. In order to equate the two interest streams, the bank needs to accept to sell the loan portfolio at a discount of 15-20%. However by doing that it materialises its loss which has to be paid for with costly Tier I capital.39

5.2.4. Bond solutions

Historically bonds represented only a fraction of project finance debt issues in the CEF sectors. According to projects tracked by the Dealogic ProjectWare database, the share of bonds as % of debt financing oscillated between 0% and 28%. On average, from 2000 to 2013, only 7% of debt issued was through the form of bonds, with the remainder going to banks.

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39 Today a bank’s own funding cost would be situated between 100 and 180 basis points. Therefore the margin received from the infra loans generates monthly losses. However this is smaller in volume and therefore less painful than to take the 15-20% hit on the outstanding loan. Unless the risk remuneration requirement shifts back to lower levels or unless banks find capacity to cover their losses on the liquidation of their loan books, it is highly unlikely that loan book sales will happen soon.
Figure 14: Bond as % of project debt financing, in CEF sectors in the EU28 (2000 – 2014 YTD)

A very strong bond pickup can be observed in 2013: the bond issue in the CEF sectors of EUR 8.8bn is the highest ever registered since 2000 as per the Dealogic ProjectWare database, nearly triple the second highest previous value of EUR 3.1bn in 2003. Also the market share of bonds in 2013 is an all-time high for the CEF sectors: 28%. This trend is confirmed in the first three months of 2014.

Between 2000 and 2013, 70% of project bond issues in the CEF sector in the EU28 were used to refinance existing debt on average. Twice, refinancing represented 100% of annual project bond issues during that period. For bank lending, the proportion is inverse: only 30% of debt issued is used for refinancing transactions, with 70% going to primary deals.

Figure 15: Refinancing as % of project bond issues in CEF sectors in the EU28 (2000 – 2014 YTD)

Before the strong 2013 pickup, only a limited number of transport, energy and telecommunication projects were financed in the bond market since the beginning of the financial crisis, i.e. between 2008 and 2012. In line with the general market trend, nearly all of the issues have been used to...
refinance previous debt facilities as shown in the table below\(^\text{40}\).

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Phoenix Natural Gas Acquisition</td>
<td>UK</td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Grid Europe Refinancing Bond (June + July)</td>
<td>DE</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,250</td>
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<tr>
<td>Castor Underground Gas Storage Bond Refinancing PPP</td>
<td>ES</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,401</td>
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</tr>
<tr>
<td>Greater Gabbard OFTO Acquisition Financing</td>
<td>UK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>365</td>
<td></td>
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<tr>
<td>Elenia Acquisition Refinancing</td>
<td>FI</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>650</td>
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</table>

**Energy network**

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</tr>
</thead>
<tbody>
<tr>
<td>Project Opera Restructuring</td>
<td>FR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>39</td>
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<tr>
<td>Project Alligator Arqiva Acquisition Refinancing</td>
<td>UK</td>
<td>✓</td>
<td></td>
<td></td>
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<td>878</td>
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<tr>
<td>Reggefiber FttH3 Optical Fiber Network</td>
<td>NL</td>
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<td>85</td>
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<td><strong>Telecom</strong></td>
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<td></td>
<td>963</td>
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<tr>
<td>Warsaw Frederic Chopin Airport Upgrade</td>
<td>PL</td>
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<td></td>
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<tr>
<td>Gatwick Airport Acquisition Refinancing</td>
<td>UK</td>
<td>✓</td>
<td></td>
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<td></td>
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<tr>
<td>Krakow Airport Expansion</td>
<td>PL</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>N33 Improving PPP Project</td>
<td>NL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Gatwick Airport Acquisition Bond Refinancing</td>
<td>UK</td>
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<td></td>
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<td>719</td>
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<tr>
<td>High Speed One refinancing 2012</td>
<td>UK</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
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<td>703</td>
<td></td>
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<tr>
<td>High Speed One refinancing 2013</td>
<td>UK</td>
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<td></td>
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<td>1,221</td>
<td></td>
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<tr>
<td>Brussels Airport PPP Refinancing Bond</td>
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<td></td>
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<td></td>
<td></td>
<td>500</td>
<td></td>
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<tr>
<td>Marseille L2 Motorway PPP Financing</td>
<td>FR</td>
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<tr>
<td>Heathrow Airport Terminal Two Bond Financing</td>
<td>UK</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>881</td>
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<tr>
<td>R1 Slovakian Expressway PPP Project Bond Refinancing</td>
<td>SK</td>
<td>✓</td>
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<td>1,243</td>
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<tr>
<td>Maliakos-Kleidi PPP Refinancing</td>
<td>GR</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>324</td>
<td></td>
</tr>
<tr>
<td>Aeroporti di Roma Refinancing</td>
<td>IT</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>600</td>
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**CEF sectors bond financing TOTAL**

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total</th>
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<tr>
<td></td>
<td>150</td>
<td>39</td>
<td>47</td>
<td>712</td>
<td>1,551</td>
<td>4,931</td>
<td>10,560</td>
</tr>
</tbody>
</table>

*Sources: Infrastructure Journal, ProjectWare, InfraNews*

**Table 8: Project finance bonds issued in CEF sectors in the EU 28 (2008 – 2013)**

Reasons for the relative absence of project bonds are numerous and the private sector has created various tools to address some of them. For example, "PEBBLE", an open structure backed by ING, NIBCAP and Santander supports project finance transactions through structuring. It consists of long maturity "A" notes supported by a subordinated "B" loan with a shorter maturity of 15% of the funding needs as well as a revolving facility for construction. However, PEBBLE cannot take the entire subordinated tranche and therefore needs co-investors. None have been tested so far, however in any of the CEF sectors.\(^\text{41}\)

At the same time, there has been quite a pick-up in bond issuance in the UK social infrastructure

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\(^{40}\) The total for 2013 of EUR 10.6bn is different from the EUR 9.5 in the previous chart as it includes the July 2013 full amounts of the Open Grid bond issue and the High Speed One 2013 refinancing, which are not included as such entirely recorded in the Dealogic ProjectWare database

\(^{41}\) PEBBLE and NIBCAP were used for the financing of the Zanstad prison project in the Netherlands in 2013
sector (not included in the CEF sector). Some of these have been wrapped by Assured Guaranty, the remaining active monoline insurer, some have been stand-alone bonds, albeit with other mechanisms to enhance the structure such as partly guaranteed payments for a certain period.

<table>
<thead>
<tr>
<th>Issued</th>
<th>Project</th>
<th>Investors</th>
<th>Format</th>
<th>Amount of bond</th>
<th>Tenor</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 2013</td>
<td>UPP, multiple-site student accommodation, UK</td>
<td>Ginko Tree Investment, GPPM</td>
<td>Tree</td>
<td>GBP 382 million</td>
<td>27 yrs fixed, 34 yrs index-linked</td>
</tr>
<tr>
<td>May 2013</td>
<td>ULiving Hertfordshire, UK</td>
<td>Bouygues</td>
<td></td>
<td>GBP 144 million</td>
<td>41 yrs index-linked</td>
</tr>
<tr>
<td>July 2013</td>
<td>Sustainable Communities for Leeds, UK</td>
<td>Equitix, Sweett Invest., Keepmoat</td>
<td>Bond wrapped by Assured Guaranty</td>
<td>GBP 102 million</td>
<td>19 yrs fixed</td>
</tr>
<tr>
<td>July 2013</td>
<td>Holyrood student accommodation, UK</td>
<td>Balfour Beatty</td>
<td>Bond wrapped by Assured Guaranty</td>
<td>GBP 63 million</td>
<td>35 yrs fixed &amp; index-linked</td>
</tr>
<tr>
<td>September 2013</td>
<td>Salford housing, UK</td>
<td>Chevin Housing Association, Keepmoat, Harewood Homes</td>
<td>Unwrapped two-tranche</td>
<td>GBP 83 million</td>
<td>29 yrs fixed</td>
</tr>
<tr>
<td>September 2013</td>
<td>Zaanstad Prison, NL</td>
<td>Ballast Nedam, Royal Imtech</td>
<td>PEBBLE Commute product</td>
<td>EUR 195 million</td>
<td>25 yrs fixed</td>
</tr>
<tr>
<td>December 2013</td>
<td>Manchester Social Housing PFI, UK</td>
<td>Equitix, Contour Homes, Galliford Try Investments</td>
<td>Bond wrapped by Assured Guaranty</td>
<td>GBP 74 million</td>
<td>34 yrs fixed</td>
</tr>
<tr>
<td>March 2014</td>
<td>Solutions 4 North Tyneside, UK</td>
<td>Equitix, Miller</td>
<td>Bond wrapped by Assured Guaranty</td>
<td>GBP 77 million</td>
<td>27 yrs fixed</td>
</tr>
</tbody>
</table>

Sources: Infrastructure Journal, Standard & Poors Ratings Direct Credit FAQ "Why UK University student accommodation projects are satisfying investor appetite for long-term infrastructure debt, 30 July 2013

Table 9: Examples of project finance bonds issued in the social sector in the EU 28 (2013-2014)

Hadrian’s Wall Capital (HWC)

HWC set up a fund which would take a subordinated tranche in a project to raise the rating of the senior debt as for the project bond facility. This would be structured as a single debt instrument with two tranches at a spread over gilts. The senior tranche would be issued in the capital markets, while the Hadrian's Wall would take the subordinated tranche. The fund reached financial close in May 2012 with three investors (Aviva, EIB and the Development Bank of Japan). The fund was in competition with EIB credit enhancement facility for project bonds on some transactions. As the fund was not successful in closing a deal, in mid-2013, the fund manager decided to wind up the fund and return capital to its investors.

5.2.5. New market developments in direct investment by institutional investors (pension funds, insurance companies)
Institutional investors such as pension funds, insurance companies and wealth funds are showing an increasing interest for moving into infrastructure investment given its potential to match long-term assets and provide diversification. For instance, the stability provided by the regulated model in energy and natural monopoly situation in transport corresponds to pension funds’ investment profile, characterised by relatively low rates of return – around 7%-8% – and long investment horizons. These investors are also becoming increasingly ready to invest directly in infrastructure assets. This is new, as their exposure to infrastructure has traditionally been via listed companies (such as utilities), or via real estate portfolios. However, for such new classes of investors to invest, there need to be investment opportunities available, i.e. equity opened to participation and/or debt products. Hence, the need for new products, and possible enhancements, that would allow channelling the investment into the infrastructures of European importance.

5.2.5.1. Direct investment and private placements

APG, the Dutch pension fund in a quest for inflation-linked assets, entered into a dialogue with the Dutch procuring authorities to structure a road widening project to offer such cash flows (the N33 road project). APG succeeded in closing the deal, essentially by offering take out, post construction financing to each consortium participating in the tender. Other pension funds were interested at the outset, but dropped out of the bidding process. APG will issue a EUR80m inflation-linked bond refinance with a 20 year tenor at the end of the construction. This will refinance 70% of the senior loans (bridge-to-bond) provided by a club of three banks.

Allianz Global Investors recruited an entire team from the ailing monoline insurer MBIA to make their infrastructure investments and also to offer the capacity to third-party investors. Their private placement product quotes a fixed spread over swap at the final stage of the tender and allows multiple drawdowns, but without possibility to refinancing. It would require only one credit rating and no public listing. In July 2013, Allianz has agreed to fully refinance a EUR 128m construction loan provided by a club of banks for the Cité Musicale cultural center project in the Hauts-de-Seine county near Paris. The private placement pricing was set at 160bps on top of a AA rating by S&P. In 15 months Allianz invested close to EUR 2 billion from its own balance sheet and funds raised from investors.

Aviva and Legal & General are both UK insurers with strong appetite for infrastructure debt investment, both from own balance sheet and from funds raised from third party investors via numerous investment methods (bonds, private placements, direct lending).

5.2.5.2. Partnerships

Several Danish pension funds have created new models for direct investment. PFA Pension, a Danish pension fund, entered a DKK 10 billion (EUR 1.3 billion) partnership with the Danish export credit agency, whereby the Danish export credit agency arranges and guarantees loans from PFA to foreign companies purchasing Danish exports in the wind and oil & gas sector. Pension Danmark will create an infrastructure fund with EUR 800 million capital to invest in energy related assets, potentially taking the pension fund's infrastructure allocation to 10%.

In October 2012, the French investment bank Natixis and Ageas, a Benelux insurer, have agreed that Ageas will co-invest in loans to greenfield European infrastructure transactions originated by Natixis. Natixis will retain a minority share of the loans. Ageas aims to build up a EUR 2 billion portfolio of infrastructure loans over the next three years. To date Ageas invested EUR 200m into
debt provided to three projects in France (railroad, highway and prison). Later, Natixis announced a similar partnership deal with the French insurer CNP: the insurer will invest EUR50m to EUR 150m per deal in infrastructure debt for greenfield projects sourced by Natixis.

5.2.5.3. Debt funds and mandates

Institutional investors such as insurance companies, pension funds and Sovereign Wealth Funds (SWFs) are keen to invest in infrastructure debt. Such debt is usually long-dated and provides more attractive risk-adjusted yield than other fixed-income products such as government or corporate bonds. This then allows the institutional investors to match their long-dated liabilities such as pensions and insurance payouts.

Indirect investment in debt funds is seen as one of the solutions for institutional investors to gain exposure to the infrastructure sector, it is therefore becoming one of the sources of funding for European infrastructure projects.

As of January 2014, Preqin was tracking 96 infrastructure debt funds worldwide. As of April 2014, there were 12 debt or mezzanine funds or managed accounts having reached final close with mandates allowing investment in debt and main focus on European countries. According to Preqin these vehicles have collectively raised EUR 9.0bn. In addition to that, still with Europe-mainly focused mandates, there are twenty debt funds in fundraising (target of EUR 7.4bn, interim closing of EUR 1.5bn). For detailed tables see Appendix II.

While many commentators predicted in 2011 and 2012 that debt funds would be a major source of financing in the future, this does not seem to verify. The debt funds and debt mandates are competing with other sources of debt finance (direct investment, commercial banks, bonds) for only a limited number of primary transactions. For the time being only a very limited number of secondary transactions (sale of existing portfolio of loans) took place. Therefore not all of the funds that were set-up will be capable of creating sufficient scale to pursue their existence.

5.2.5.4. Investor platforms

The UK Pensions Infrastructure Platform (PIP) was launched by pension funds in 2011 to allow UK pension funds to invest directly in infrastructure projects via debt or equity investments. A number of the UK’s largest pension funds have agreed to become Founding Investors and these include the BAE Systems Pension Funds, BT Pension Scheme, Pension Protection Fund, The Railways Pension Scheme, Strathclyde Pension Fund, and West Midlands Pension Fund. The PIP has a target size of GBP 2 billion and will target infrastructure projects free of construction risk. The fund will seek cash returns in a range of 2-5% above the retail prices index (RPI). The Platform aims at achieving management fees of only circa 0.5% of asset value which is nearly half of what third party funds charge. The set-up of the platform suffered from delays and it was only in February 2014 that the first fund was launched. The PPP Equity PIP Limited Partnership has secured a commitment of GBP 260m versus an overall hard close target of GBP 500m. The fund will be managed by Dalmore Capital, a third party investment manager with strong PPP background. The fund is targeting

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42 2014 Preqin Global Infrastructure Report
43 This includes a relatively wide spectrum going from highly rated senior debt to subordinated dated, mezzanine and convertible loans
44 Given the limited yield on debt, debt fund managers can charge only relatively small fees (less than 1 percent). Therefore a much larger portfolio is needed to support an investment manager team than for other types of investment such as equity or real estate.

44
investments at the "low-risk end of the infrastructure spectrum", aiming for returns of 2.5% a year above the retail prices index. At the same time three of the participating pension funds announced that they were pulling out of the initiative: the BT, BAE and London Pension Fund Authority (LPFA). The reasons quoted were different risk-return expectations compared to the other PIP participants and the departing funds' preference to continue their direct investment into the infrastructure asset class.

5.2.5.5. Sovereign Wealth Funds (SWFs)

Sovereign Wealth Funds (SWFs) are also actively targeting the infrastructure asset class, directly or indirectly. For example the Kuwait Investment Office (KIO), one of the world's largest SWF with over USD 400bn of assets under management, announced in June 2013 that it will commit USD 5 billion to international infrastructure assets with a particular focus on UK infrastructure. It is currently setting up a dedicated investment team in London.

5.2.6. Project finance – Conclusion

There are various sources of financing. The debt side is still heavily dominated by bank financing representing something around 80% of the debt funding, the growth in non-bank debt is very strong and expected to continue. There are multiple available solutions being tested on the market and the situation evolves very quickly. Today, in early 2014, the funding sources are numerous and sufficient for the needs of today's volumes of infrastructure financing activity. However a double effect is expected: on the one hand the banks will most likely continue to retreat from the market and at the same time the investment activity is expected to grow, alongside the overall economic activity. While institutional investors are expected to fill the gap, the volumes at stake will require some level of support and intervention.

6. Public Private Partnerships (PPPs)

Public Private Partnerships (PPPs) are forms of long-term cooperation between public authorities and the private sector that aim to deliver infrastructure and strategic public services. In some cases, PPPs involve the financing, design, construction, renovation, management or maintenance of an infrastructure asset (road, railway, electricity grid, gas pipeline); in others, they incorporate the provision of a service traditionally delivered by public institutions (schools, hospitals, prisons, police stations).

In a usual PPP set-up a public authority gives a long-term concession (between 15 and 40 years or more) to a private sector partner (the sponsor) to build an infrastructure asset and allows it to receive revenue over the lifetime of the concession. The sponsor finances privately the construction of the asset, usually with a high share of debt (up to 90% of the total capital cost). The sponsor then operates the project and maintains it over the lifetime of the concession. At the end the asset is transferred to the public authority for free. Certain quality criteria must be met by the sponsor to receive payments.

Revenues come directly from users ("user revenue" or "real toll" schemes) who pay for the ability to access the infrastructure (highway, bridge, railway, tunnel). Another option is for the state to pay the private sector sponsor a pre-agreed revenue ("availability payment") conditional upon the fulfilment of certain quality criteria (availability of the infrastructure, sufficient maintenance, etc). A mix of the two would be the so called "shadow tolls" where the amount paid by the authority via availability payments is largely pre-agreed, but with a portion dependant on the volume of traffic of users of the asset.
6.1. Review of the PPP market in the EU

According to the European PPP Expertise Center (EPEC) database the annual capital value of PPP projects reaching financial close in Europe oscillated between the 2012 lowpoint of EUR13bn and the all-time high of EUR 30bn achieved in 2007. In terms of number of projects the figure varies between the long-term record low of 68 projects (2012) and the 2006 maximum of 145 projects.

![Figure 16: European PPP Market 2003-2013 by Volume and Number of projects](source: EPEC)

The number and total value of PPP projects in the EU has fallen significantly since the beginning of the financial crisis: in 2013 only EUR 17bn of projects were delivered as PPPs in Europe, which is 44% below the peak of 2007 (EUR 30bn). The 2013 volumes have fallen back to the levels of transaction activity recorded ten years ago in 2003-2004.

Transport and Telecom are the only CEFs sectors that are represented in the EPEC database. Transport projects constitute the largest share of PPPs in value: usually they represent between 50% and 60% of the value in a given year. Telecom PPP projects are more rare: there was a single telecom PPP transaction recorded between 2010 and 2013; however in 2010 five projects representing circa EUR 800m reached financial close. In 2012, EUR 7bn of transport PPPs reached financial close across 13 transactions, representing 59% in value and 20% in volume.

PPPs in Europe usually raise long-term debt finance. Available information lacks completeness and significant variations can be observed among Member States. However average recorded loan tenors vary at around 20 years. In 2010 half of the transactions for which tenor data was available had maturities beyond 25 years; this was only the case for 25% of the PPP transactions in the EU in 2011 and 2012.

PPPs are only one of the ways for public authorities to finance construction of infrastructure. Most Member States in the EU28 have at least some experience with PPPs, however the frequency as to how the technique is used varies greatly. Historically, the UK is the largest PPP market in Europe representing circa 50% of PPPs since 1990, followed by Spain, Portugal and France.
PPPs usually represent only a fraction of the volume of public sector infrastructure capital formation expenditure: in the UK, the most advanced PPP market, circa only 10% of all investment in transport, storage and communication is delivered via PPPs while in the group of other EU countries this share is at circa 5%.⁴⁵

Amongst the factors causing this reduction in the volume of PPP projects coming to market, the following tendencies have been observed:

- Only a limited number of transactions are initiated by the public sector as a result of the reduced capacity of public budgets and in certain cases due to fragmented planning processes for infrastructure investments;

- Absence of a general legal EU framework for PPPs, leading to various national legal frameworks for PPP procurement, limiting the transfer of comparable financing solutions across EU countries. For example, there is little spill-over of financing solutions from mature PPP countries towards the Cohesion countries, despite the capacity building and networking efforts undertaken by the European PPP Expertise Centre (EPEC);

- Inadequate institutional and financial knowledge ("institutional capacity") of the PPP procurement practices in certain Member States also limits the usage of PPP procurement models.

If appropriately structured from the technical, financial and legal expertise, PPPs can bring-in high value added to the public procuring authorities:

- better usage over the time of the public expenditure, if the value for money assessment and public-private comparator analyses are appropriately carried out; this expertise requires from the public side professional institutional capacity to carry out and analyse such assessments;

- usually delivery of the infrastructure on time and on budget;

- depending on the PPPs schemes, the maintenance costs for the services provided by the concessionaire are included in the contracts, without costs for the public authorities to maintain the infrastructure;

- usage of the financial instruments in the PPP schemes can be combined with grants obtained from the Connecting Europe Facility budget, on competitive conditions

6.2. Emerging market trends of the PPP sector in Europe

The PPP sector in Europe is actively evolving, despite the lower level of activity of the European PPP market compared to the pre-crisis years. The pace and direction of evolution of PPP markets in Europe is somewhat fragmented, however some trends can be described:

Relative lack of project pipeline: while some Member States have a robust and regularly updated pipeline of projects identified as future PPPs, there is only a limited number of identified projects in the overall EU PPP market. The reasons for several member states to stop or sensibly reduce their

PPP procurement plans are varied: budgets are under pressure and investment in infrastructure is not deemed an (affordable) priority, some governments are reviewing their policy on PPPs and have adopted a negative approach towards this procurement method.

**Focus on smaller, local projects:** The situation is rather different from Member State to Member State, however the general trend is to see less large projects sponsored by central governments ('national projects') but rather smaller, regional or municipal PPPs. This is fuelled by a recent phenomenon of bundling or aggregating batches of smaller projects which allows the procuring authority to achieve more attractive financing (even from capital markets). Bundling similar projects together and launching several phases of procurement gives certainty to private bidders and allows the procuring authority to immediately feed lessons learned into new phases of bundles.

**PPPs are being successfully used in new sectors** such as river dams in France and in the Netherlands. Also in Poland a very successful municipal Waste-to-Energy project combining EU structural funds in a PPP structure shows that innovation in PPPs comes from around Europe and not just the most mature markets such as the UK, France and Benelux.

**Separating technical bids and financing bids** or so called funding competitions have been used in several Member States. Using the so called 'funding competition' technique creates a even playing field for all sponsors as the choice of the preferred bidder is conducted on the technical bid only, independent of the capacity of the sponsor to obtain attractive financing from relationship banks. Equally, the funding competition is open to all finance providers and therefore does not limit the financing pool to institutions tied-up by an exclusivity agreement with the winning sponsor.

**Some procuring authorities chose to invest in the equity of the SPV.** This approach has been pioneered by authorities in Belgium and the United Kingdom. This does increase the upfront costs to the public bodies as they have to provide a share of the equity for the construction of the project. In return the public body receives a share of the profits of the project SPV. The main goal however is to create transparency for the public side on the economic performance of the project. Also in case of difficulties or negotiations, such a set-up is expected to facilitate the SPV’s dealings with the various stakeholders.

**Institutional investors are very active in providing debt financing to PPPs** and have provided over 15% of PPP debt finance in 2013 according to EPEC. This demonstrates the appetite of institutional investors for greenfield in the EU. It also shows that it is possible for procuring authorities to successfully structure a PPP procurement process that allows for a successful financing via a debt capital market solution.

### 6.3. Comparison with the situation in Australia, Canada and the United States

**Australia**

Australia has a strong market for PPPs, mainly in the sector of transport infrastructure (road, rail, tunnel, port) as well as social infrastructure (hospitals, schools, prisons). Australia has a relatively large share of infrastructure that is constructed and/or owned by the private sector. The Australian financial sector (investment funds, banks, bond market) have developed an expertise in the infrastructure market since the 1980s, well ahead of other markets. The Australian pension funds (superannuation schemes) are one of the largest institutional investors in the infrastructure asset class.
Between 2000 and 2013, the average annual flow of PPPs in Australia across all sectors is circa AUD 3.4bn of project value spread out between 6 transactions p.a. on average.

Figure 17: PPPs reaching financial close in Australia (2000 – 2013), all sectors

Public sector investment in construction currently represents circa 1% of Australian annual GDP. Investment in infrastructure is a top priority for the Australian government, both at federal and state level. In order to keep up with the demands of the growing economy, it was estimated in 2010 that over AUD 750bn would need to be invested between 2010 and 2020. In June 2013, the Australian government has released the National Infrastructure Plan laying out the principles driving infrastructure investment for the next 50 years. The plan plans to involve the private sector extensively: leverage the public budget by supporting infrastructure investment through innovative techniques that require less capital than grants (seed funding, guarantees, junior debt tranches), encourages public authorities to privatise non-strategic assets in public ownership estimated at AUD 100bn in order to recycle the capital into the support of new investments.

In terms of financing, Australian Project Finance projects rely mostly on bank debt (85% of debt raised), albeit less so than in Europe (90-95% of debt raised). Senior banks loans are fairly short-term compared to the European practice (6 year tenors on average). Bank club financing is common.

Australia has had its share of failed PPPs mainly with tolled projects that suffered from overly optimistic traffic forecasting. However, the reliance on PPPs has not been put in question.

For further details see Appendix III.

Canada

Canada has a strong PPP market. The infrastructure responsibilities are divided among federal, provincial, territorial and municipal governments. The PPP market has been historically led by key provinces, with nearly 80% of projects coming from health, transport and justice sectors. Canada has

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delivered more than 100 projects worth CAD 55 billion between 2003 and 2013, with 35 projects worth CAD 27 billion in the last 3 years.\textsuperscript{49} The Canadian approach is specific, albeit inspired by the UK and Australian models.

Between 2005 and 2011, nearly 70 projects were delivered. This represents an annual volume of circa CAD 5bn for circa 10 transactions on average.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure18.png}
\caption{Number and Aggregate Capital Value of P3 Projects Closed (2009-2011)\textsuperscript{50}}
\end{figure}

The main principle of the PPP approach is the focus on Value for Money: a PPP analysis is mandatory for all projects procured at federal level with an estimated cost in excess of CAD 100m. Strong effort has been put into capacity building and dissemination with dedicated PPP agencies at federal and state level. Standardized templates and key terms are used by the various provinces and government entities, lowering transaction costs. Very fast and predictable procurement processes have created investor confidence in the project pipeline. This has allowed to attract significant competition from bidders.

In order to further increase the use of PPPs, the federal government of Canada established the P3 Canada Fund. Launched in 2009 and managed by the PPP Canada Federal unit, the fund provides funding to PPPs in infrastructure at state, regional or local level. The fund can provide up to 25\% of eligible costs via grants, repayable grants, loans or loans guarantees. As of September 2013, the fund committed CAD 770m to 16 projects. In 2013, the Federal government decided to provide a further CAD 1.3bn for a five year period.

In addition to the P3 Canada Fund, the PPP Canada unit operates the Project Development Fund which can finance up to 50\% of costs related to preparing a project (such as Value for Money analysis).

In terms of financing PPPs, since 2009, bonds represent a strong share of PPP financing. This is partially due to the limited risk appetite of Canadian banks for long-dated lending, robust security packages provided by contractors that allow the projects to obtain better rating. The pool of available


\textsuperscript{50} http://www.p3canada.ca/p3-market.php
capital from institutional investors (pension funds) is very deep and their familiarity with the infrastructure asset class is high.

**Figure 19: Long Term Canadian PPP Debt Financing (2007-2011)**

As market practice showed that small to medium sized PPPs have difficulty in obtaining competitive financing, the PPP Canada helped with the launch of the Stonebridge Infrastructure Debt Fund I LP. The CAD 200m fund is managed on a commercial basis by the investment team of Stonebridge. It received commitments from the Business Development Bank of Canada and a group of Canadian pension funds. It provides fixed rate senior debt to projects. In April 2013, the investment manager announced that it is raising a successor fund with a target of CAD 300m.

**United States**

The United States is a relative newcomer to PPPs. Even though there is an old nineteenth-century tradition of privately provided public infrastructure and even of private tolled roads and bridges, the United States still depends almost exclusively on the government for its public transport infrastructure (with the important exception of railroads). Between 1990 and 2010, circa 80 transport PPPs were closed for a cumulated value of USD 46bn, ie circa USD 2bn p.a. which is less than a third of the value of transport PPPs in the EU in the record-low year of 2012. As of January 2013, only 32 States had a PPP enabling legislation.

States, local authorities and government agencies have often trouble securing affordable financing for PPPs, therefore the federal budget has put in place a variety of innovative financing tools. The Federal Department of Transportation's TIFIA (Transportation Infrastructure Finance and Innovation Act) has become a major source of loans and loan guarantees for transportation PPPs throughout the country since it took effect in 1998.

TIFIA provides direct loans, loan guarantees, and standby lines of credit to highway, bridge, transit, and intermodal freight projects that have a dedicated source of revenue pledged toward repayment (user charge or other source different from federal funding). TIFIA provides funding to projects

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51 http://www.p3canada.ca/p3-market.php
53 National Conference of State Legislatures: Public-Private Partnerships for Transportation, 2010
above USD 25m and can have an exposure of up to 49% of the capital cost of a project for secured loans and 33% for standby line of credit. For direct loans, the maximum term is 35 years, the standby line of credit is available for up to 10 years after the completion of the project. The remuneration of the funds provided is at a fixed rate, usually at more favourable terms than what is available through the commercial market.

When the programme was launched it had a budget funding of circa USD 120m p.a. for the subsidy cost of credit assistance. In 2012, the annual budget was increased to USD 750m in FY 2013 and USD 1bn in FY 2014. The budget funding covers the expected losses on the lending and allows the Department of Transport to lend principal amounts of around 10x the value of annual subsidy credit assistance. This principal amount is then complemented with other sources of funding (state, local government, private) leading to multipliers of circa 30x of US Federal budget dollars spent. As of 24 September 2013, the TIFIA programme has a portfolio of USD 10.2bn of credit provided to transport projects, for a total capital cost of USD 40.1bn.
7. REGULATORY MEASURES AND OTHER POLICY EFFORTS IMPACTING INFRASTRUCTURE INVESTMENT

The development of the CEF financial instruments is not the only tool to correct market failures and attract private sources of investment in the CEF sectors. Other initiatives of a legislative or policy nature have been developed for this purpose, at the EU, national and at international level. Furthermore, investment in the CEF sectors may be affected by sector-specific frameworks and regulation.

7.1. Financial regulation

7.1.1. Impact of financial markets regulatory environment

The financial crisis had shown a clear need for a more efficient prudential regulation of the financial sector. In order to make the financial system more stable, the EU adopted a wide set of legislative measures and tools that are currently being adopted.

7.1.1.1. Banking regulation (Basel III - CRD IV)

The banking sector was heavily affected by the financial crisis and the EU banks suffered heavy losses in most of the Member States. An improved prudential and regulatory framework was therefore necessary. In July 2013 the EU adopted the Capital Requirements Directive (CRD IV) which is the transposition of the 2010 international agreement on bank prudential rules, the Basel III. The new prudential measures imposed by the Directive will be progressively phased-in between 2014 and 2018.

The Directive establishes new liquidity buffers with a view to harmonize quantitative regulatory standards for bank liquidity across EU. The Directive also puts stronger focus on the banks' capacity to match the tenor of their assets and liabilities. While such focus improves banks' resilience to significant stress scenarios it also restricts banks' ability to operate maturity transformations that then discourages its investment in long-term assets (providing loans with long-term tenor). Indeed, the new regulatory framework makes lending to infrastructure projects costly for banks in terms of capital charges. Many market participants have expressed their concern, wondering to what extent this will limit the availability and price of long-dated infrastructure financing for projects in the EU.

The Commission is keen on striking the right balance between a safe prudential framework and the capacity of the EU banking sector to provide long-term financing (such as long-dated infrastructure loans). The Commission will analyse how the new liquidity requirement plays out across the diverse EU banking sector, notably as regards its ability to provide long-term funding to support the real economy. It will submit a legislative proposal for the calibration of the Net Stable Funding Ratio (NSFR) by the end of 2016 to ensure that institutions use stable sources of funding, taking full account of the diversity of the European banking sector. In the same manner, the rules for leverage ratios will be subject to an observation period from 2015 and a Commission report by the end of 2016.

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54 CRD IV raises the common equity Tier 1 capital up from 2% to 4.5% with the total capital requirement (Tier 1 + Tier 2) remaining constant at 8%.

55 The Basel III / CRD IV regulatory framework measures this capacity mainly through the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR).
7.1.1.2. Insurance regulation (Solvency II and Omnibus II)

The EU is currently in the process of reviewing the prudential regime for insurance and reinsurance undertakings. As a first step, the Solvency II Framework Directive was adopted in November 2009 which set the ground for a consistent, modern and risk-based regulatory regime. This text was complemented by the Omnibus II Directive which was adopted in March 2014. The whole framework is currently being transposed into national law and will be applicable as of January 2016.

The new solvency requirements have been designed to ensure that insurers have sufficient capital to withstand adverse events, both in terms of insurance risk (as under the previous regime), and now also in terms of economic, market and operational risk. The framework is based on three pillars: minimum capital requirements, supervision of risk and public disclosure.

Many insurers have long-term liabilities and therefore actively seek matching assets providing long-term cash-flows. Infrastructure debt (and equity) provide both long-term tenor and attractive risk-adjusted returns. However the proposed capital charges for draft of the Solvency II / Omnibus II proposal was criticised by market participants as too-high and effectively discouraging insurers from funding infrastructure projects. This issue was addressed on two levels:

On the one hand, the finalized text of the Omnibus II Directive agreed at the end of November 2013 introduced measures into Solvency II aiming at reinforcing existing incentives for investors to match their long-term assets with long-term liabilities and hold these assets until maturity. The list of eligible assets under the matching adjustment mechanism has been broadened to lower-rated assets, including long-term investments such as infrastructure project bonds.

On the other hand, at the request of the Commission, in December 2013 the European Insurance and Occupational Pensions Authority (EIOPA) provided an analysis on the calibration and design of capital requirements, particularly for investments in infrastructure. The Commission will take this report into account when formulating the Delegated Acts for Solvency II, including possible adjustments to the treatment of asset classes other than securitisation (i.e. infrastructure, SMEs) and a number of incentives to stimulate long-term investment by insurers.

The finalized text of the Omnibus II Directive reassured many insurers. For example Aviva, the UK insurer declared immediately in December 2013 that it was allocating GBP 500m to UK infrastructure projects thanks to the favourable prudential treatment of such assets.56

7.1.2. EU-level policy initiatives supporting infrastructure investment

In March 2013, the Commission published a Green Paper on long term financing in order to launch a debate on long-term financing. During the three-month consultation period the Commission received nearly three hundred replies from a wide range of market participants.57 A large majority of stakeholders agreed with the need to broaden the sources of long-term financing in Europe, while recognising the important role that banks will continue to play, particularly for SMEs. While a well-defined and stable regulatory environment was underlined as very important, many stakeholders also called for better calibration of regulatory reform to take account of long-term financing objectives.

56 http://www.reuters.com/article/2013/12/19/aviva-infrastructure-idUSL6N0JY23D20131219
In May 2013 the Economic and Financial Committee set up a High Level Expert Group to support the reflection on the issues identified by the Green Paper. The Expert Group focused on SMEs and infrastructure financing challenges and published its report with a list of recommendations in December 2013.\(^{58}\)

Building on these initiatives and in an effort to secure Europe’s position on a sustainable growth path, a number of regulatory measures and initiatives have been advanced at EU level to promote private sector involvement in the financing of infrastructure.

In parallel, the European Parliament adopted on 26 February 2014 its own initiative report on the long-term financing of the European economy.\(^{59}\)

In March 2014 the Commission has adopted a Communication on Long Term Financing\(^{60}\) as a follow up to the Green Paper on the long-term financing of the European economy launched in 2013, whereby it sets out a set of actions which aim to i) mobilise private sources of finance, ii) make better use of public finance, develop European capital markets, iii) improve SMEs’ access to financing, iv) attract private finance to infrastructure, and v) enhance the framework for sustainable finance. Some of the actions proposed are of a legislative nature or address initiatives that are also on the Commission’s agenda for 2014. The implementation of this Action Plan should have a positive impact on the regulatory framework for long-term investment, and has the potential to unlock alternative sources of financing of infrastructure.

### 7.2. Sector regulations

**7.2.1. Recent trends in national regulation and policy**

The credibility, predictability and stability of the regulatory framework is one of the key parameters that investors look for when analysing infrastructure investment opportunities. It is the stable regulatory framework that underpins the stability of cash-flows that characterizes infrastructure projects. Sudden changes in policy with regard to the regulatory approach for a specific sector reduce investor appetite in relation to such projects. While the political and fiscal motivation for such moves can be understood, Member States must carefully weigh the impact that such a move has on their investment credibility as well as the impact beyond the borders of the specific Member State making those changes.

While the renewable energy generation sector is not in the scope of CEF, the fate of many renewable energy schemes should serve as a lesson of how not to approach regulation, namely in the TEN-E sector. The EU should definitely strive to avoid brutal regulatory changes such as the one experienced by the investors who invested nearly EUR 5bn to purchase a stake in the Norwegian gas transport system Gassled (see box below).


\(^{60}\) COM/2014/0168 Final
7.2.2. **Expected impact of the new TEN-transport, TEN-energy and telecommunication guidelines**

7.2.2.1. **Transport**

The methodology used in the regulation on Union Guidelines for the development of the Trans-European Transport network to define the Trans-European Transport Network will favour a better integration of the patchwork of national networks to create a single European transport network, integrated between Member States but also between the different transport modes (rail, road, inland waterways, aviation). It will lead to a more adequate transport infrastructure coverage of the Union, encouraging the interoperability, co-modality and shifting part of the traffic towards the more sustainable modes of transport. It should thus support a concentration of trans-national traffic and long-distance flows – both for freight and passengers – and, as a result, a higher resource efficiency of infrastructure use.

Innovative information and management systems, that will form part of the network, would provide support for logistic functions, inter-modal integration and sustainable operation in order to establish competitive door-to-door (or, at least, terminal-to-terminal) transport chains, according to the needs of the users. The improved governance of the reinforced coordination approach to implementation should also accelerate the realisation of complex cross-border infrastructure and therefore help complete the network by 2030.

The efficiency of the whole transport system would be, as a result, improved. The reinforced coordination approach to implementation would further enhance overall efficiency. Moreover, as it would be applied on corridors selected according to the methodology of the core network, the positive effect would likely concern a larger share of traffic flows.

Moreover, the reinforced coordination approach to implementation would improve the efficiency of the transport system and promote more sustainable transports through the deployment of intelligent transport systems improving the efficiency of transport operations, innovative solutions to promote

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**Case study: Gassled Gas System regulated price-cut of 90%**

Gassled is the 8,000km long gas transport system that brings Norwegian gas to the EU. In June 2011 the state authorised the Gas Exploration companies to sell their 45% shareholding to a club of infrastructure funds for a total investment of circa EUR 5bn.

In January 2013 the Norwegian State announced that it will cut the regulated gas transportation tariff by 90%. The goal of the price cut was to create savings for the Gas Exploration companies and motivate them to conduct new exploration on the Norwegian shelf.

The investors will earn EUR 1.8bn less in Net Present Value terms than expected and their returns will be reduced by 50% compared to their investment case.

In January 2014 the infrastructure funds indicated that they will appeal the Norwegian State's decision in Court.

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low carbon transport and other forms of "green" transport solutions, as well as through stimulating technological innovation in transport and infrastructure development.

It should be also noted that the Guidelines are prescriptive, meaning that once adopted, they represent a commitment on the part of the Member States to complete their part of the Core Network before 2030.

7.2.2.2. Energy

The regulation on guidelines for trans-European energy infrastructure\(^62\) from April 2013 is expected to substantially improve the investment framework for transmission infrastructure of European relevance. With the accelerated permit granting, regulatory investment incentives and solutions to cost allocation across borders the guidelines should help the necessary projects to materialise by the end of decade. 14 October 2013, based on the TEN-E Regulation, the Commission adopted the first list of 248\(^63\) key energy infrastructure projects i.e. "projects of common interest" (PCI). PCIs will be able to benefit from a number of advantages introduced by the guidelines as well as the CEF regulation:

- accelerated planning and permit granting procedures (binding three-and-a-half-years’ time limit);
- a single national competent authority will act as a one-stop-shop for permit granting procedures;
- less administrative costs for the project promoters and authorities due to a more streamlined environmental assessment procedure, whilst respecting the requirements of Union law;
- increased transparency and improved public participation;
- enhanced regulatory framework where costs are allocated to the countries that benefit most from a completed project;
- possibility to receive financial support under the CEF (EUR 5.85 billion budget has been allocated to trans-European energy infrastructure for the period 2014-20).

For a project to be included in the list, it had to have significant benefits for at least two Member States; contribute to market integration and further competition; enhance security of supply, and reduce CO\(_2\) emissions.

It is expected that not all projects from the list will need EU level financial assistance. Many of them can be implemented without EU money. In this case, they will benefit from the other advantages of the PCI status, such as an accelerated planning and permit granting. The TEN-E Regulation states that PCIs in the fields of electricity, gas and carbon dioxide (oil projects are not eligible for funding under the CEF) should be eligible to receive Union financial assistance for studies and, under certain conditions, for works as soon as such funding becomes available under the CEF Regulation in the form of grants or in the form of innovative financial instruments. This will ensure that tailor-made


\(^{63}\) The list includes some 140 projects in the field of electricity transmission and storage, about 100 projects in the field of gas transmission, storage and LNG, and several oil and smart grids projects
support can be provided to those PCIs which are not viable under the existing regulatory framework and market conditions.

Every two years the list will be updated. Project promoters may propose to add new projects to the current list. Completed projects will be removed from the list as well as projects which have proven unfeasible. This will allow the EU to adapt the list to evolving market conditions and needs.

7.2.2.3. Telecommunications

The guidelines for trans-European telecommunications infrastructure\(^\text{64}\) provide for a limited budget broadband, which is restricted to the minimum amount necessary to establish a cost-efficient intervention, determined by the legal base to be EUR 150 million.

CEF funding will, therefore, be available for a limited number of projects. The eligible projects must rely on the technology best suited for the specific project, and should help spur innovative business models and show a high potential for replication. Part of the broadband projects will demonstrate higher ambitions, aiming at higher speeds and thus serve as pilot projects for very fast connectivity.

It is expected that in addition to the direct impact on financially assisted projects, the guidelines will have a significant indirect impact through demonstration effects on broadband project design, technology choices and investment decisions, thus contributing to the broadband targets of the Digital Agenda for Europe (universal coverage at 30 Mbps and 50% of take-up at 100 Mbps by 2020).

It is intended that the financial instruments can also serve as an investment vehicle to facilitate the efficient use of private and other public funds for broadband investment. In particular, in cases where an ex-ante assessment identifies market failures or sub-optimal investment situations, authorities managing European Structural and Investments Funds (ESIF) should be able to provide geographically ring-fenced contributions to financial instruments established under the CEF, thus allowing Member States to take advantage of the know-how and scale-effects of Union-managed facilities with a view to increasing the efficiency of public spending.

7.2.3. Impact of EU sector-specific regulations

7.2.3.1. Unbundling in the energy sector

The Electricity Directive and the Gas Directive of the Third energy package\(^\text{65}\) have introduced a structural separation between transmission system operator (TSO) activities on the one hand, and generation, production and supply activities on the other hand. The aim of these provisions on “unbundling” of networks is to avoid conflicts of interest and to make sure that TSOs take their decisions independently, ensuring transparency and non-discrimination towards all network users

\(^{64}\) Regulation on guidelines for trans-European networks in the area of telecommunications infrastructure and repealing Decision No 1336/97/EC (OJ L 86/14, 21.3.2014)

(e.g. do not give priority to connecting its own power station rather than competitor's). As a result of the unbundling rules a number of vertically integrated utilities across Europe divested their transmission assets. A number of transactions took place where the existing transmission networks in one country were acquired by TSOs from other countries, often in partnership with institutional investors\textsuperscript{66}. The unbundling created investment opportunity to long-term oriented institutional investor and resulted in their higher involvement in the transmission business. However, the strict unbundling rules which aim at protecting the independence of TSOs' decisions impact the ability of also purely financial investors to hold stakes in generation and transmission assets. Aiming at diversifying the portfolio, this is what investors would be keen to do especially that risk profile of e.g. renewable projects is very different than the one of regulated transmission pipelines. There are conditions and situations where co-owning generation and transmission is possible and the Commission services issued an interpretative note\textsuperscript{67} to help financial investors in better understanding of the requirements. On the basis of a number of concrete successful TSOs certification cases, the note illustrates how the rules on ownership unbundling have been interpreted and applied in practice. Nevertheless, case-by-case clearance of financial investors' participation in a TSO is required (through the TSO certification process) which some of the investors find unnecessarily burdensome.

7.2.3.2. Sector-specific regulation in telecommunications

Markets for broadband and other telecommunications services may be subject to sector-specific regulation in accordance with the EU regulatory framework for electronic communications networks and services (such relevant markets are listed in the "Recommendation on Relevant Markets"\textsuperscript{68}). The regulation of the relevant markets is delegated to National Regulatory Authorities (NRAs) which are entrusted with key tasks such as market definition, market analysis and the design of possible market based regulatory remedies (Articles 14-16 of the "Framework Directive"\textsuperscript{69} and Articles 8-13b of the "Access Directive"\textsuperscript{70}).

In a first step, NRAs define distinct markets for different electronic communications products and services in accordance with competition law principles and define their geographic scope (national or sub-national). Subsequently, NRAs assess the state of competition in their defined markets by means of a formal forward-looking market analysis. Then, if NRAs find a given market not to be effectively competitive, meaning that they have found that one of the market players has significant market power (SMP) on that market, they must impose regulatory obligations on that undertaking. The

\textsuperscript{66} For example, China’s State Grid Corporation and Oman Oil bought 40% of Portugal’s national power grid Redes Energéticas Nacionais in 2012. In Germany alone, several cross-border investments have been seen since 2010: 50Hertz (former Vattenfall Europe Transmission) has been acquired by the Belgian state-owned TSO Elia (60%) and the Australian investment fund IFM (40%) in 2010; former E.ON Netz has been acquired by the Dutch state-owned TSO TenneT in 2010; Open Grid Europe (E.ON’s gas grid) got acquired in July 2012 by British Columbia Investment Management Corporation, ADIA, Macquarie European Infrastructure Fund IV and MEAG; Thyssengas (RWE’s grid) acquired by Macquarie European European Infrastructure Fund III. In the Czech Republic, Borealis and Allianz acquired from RWE Net4Gas in April 2013. In France Transport et Infrastructures Gaz France (TIGF) owned by Total got sold in July 2013 to of Snam (45%), GIC Private Limited (35%), and EDF (20%).

\textsuperscript{67} "Ownership Unbundling - The Commission's practice in assessing the presence of a conflict of interest including in case of financial investors" (May 2013); http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/implementation_notes/swd_2013_0177_en.pdf


\textsuperscript{69} Directive 2002/21/EC as amended by Directive 2009/140/EC and Regulation 544/2009

\textsuperscript{70} Directive 2002/19/EC as amended by Directive 2009/140/EC
"SMP Guidelines"\textsuperscript{71} set out that an SMP position can be found by reference to a number of criteria, for example the level of market shares (normally over 40%), vertical integration, product/services diversification, economies of scale and scope. Market-based regulatory obligations are \textit{inter alia} mandatory access to services and networks, price control, transparency, and non-discrimination obligations. These regulatory obligations can only be imposed on an operator that has been found to have SMP, and only if they are seen as necessary to remedy the identified persistent market failure. For example, SMP operators are generally required to offer physical wholesale access to the "local loop" (i.e. the terminating segment of fixed broadband/voice access networks). The recent EC Recommendation on consistent non-discrimination obligations and costing methodologies\textsuperscript{72} enhances the broadband investment environment by ensuring regulatory predictability and by setting-out clear conditions which may justify withdrawal or non-imposition of ex-ante price controls for regulated next generation broadband access networks.

In summary, it is not because a market player decides to invest in infrastructure roll-out that it will automatically be made subject to market-based regulatory obligations of, inter alia, access and price control. This type of obligations will only be imposed if the infrastructure operator is found to have, on a forward looking basis, SMP on a specific, geographically defined product market characterised by persistent market failure. Any operator that has not been found to have SMP on such a relevant market will not be constrained by SMP regulation when concluding commercial agreements based on its own business case (albeit being subject to competition law). Last but not least, NRAs are required to submit any ex ante, sector specific draft regulatory measure to a national, and to a European consultation prior to adoption. This gives all stakeholders ample opportunity to express their views on the appropriateness of the proposals by the NRAs.

\textbf{7.3. New EU budgetary approach}\textsuperscript{73}

\textit{Changes brought by the Connecting Europe Facility Regulation}\textsuperscript{73}

In the wake of the financial crisis, Member States' public budgets are struggling with the necessary fiscal consolidation. Capital expenditure has often suffered substantial cuts, with spending for infrastructure investment projects suspended or delayed. At the same time, the prospects for stepping up investments from private sources are uncertain. In this context, and in the view to accelerate the infrastructure development that the EU needs, the Commission decided to propose the creation of a centrally managed funding facility, the Connecting Europe Facility. As proposed in the Multiannual Financial Framework (MFF) Communication, the CEF will fund "pre-identified projects in transport, energy and ICT priority infrastructures of EU interest, and both physical and information technology infrastructures, consistent with sustainable development criteria."

The aim of the CEF will be to boost the pan European value of infrastructure projects. With EUR33.2 billion at its disposal, of which EUR11.3 billion from the Cohesion Fund, it will fund transport, energy and ICT projects that bring more interconnectivity across Europe. In addition, the CEF will provide financing for the infrastructure of EU interest (both on the Union's territory and outside the EU) that will need to connect with or pass through neighbourhood and pre-accession countries.

\textsuperscript{71} Commission Guidelines on market analysis and the assessment of significant market power, 2002/C 165/3, OJ C 165/6, 11.7.2002
\textsuperscript{72} C(2013) 5761 final of 11/09/2013
\textsuperscript{73} For a detailed presentation, see doc SEC(2011)1262 final, Impact Assessment of the regulation establishing the Connecting Europe Facility
The CEF is designed to plug market gaps and correct coordination failures, intervening where an incentive effect is demonstrated and to the extent necessary to trigger market participation. It will offer opportunities for using innovative financing tools to speed up and secure greater investment than could be achieved only through public funding. It will promote the use of EU project bonds and other financial instruments, offering an alternative to the traditional grant funding and plugging financing gaps for strategic investments. A key advantage of financial instruments is that they create a stronger multiplier effect for the EU budget compared to traditional instruments, by facilitating and attracting other public and private financing to projects of EU interest. The multiplier effect of these instruments has an estimated range between 6x (for equity investment) and 15x (for risk-sharing instruments such as project bonds).

Building on the experience of financial instruments under the current financial framework put in place in cooperation with the EIB, such as the Loan Guarantee Instrument for trans-European transport networks projects (hereafter LGTT), the Commission proposes to implement a significant part of its interventions within the CEF through financial instruments. In particular, the Europe 2020 Project Bonds Initiative will be used as a means of securing investment resources for infrastructure projects of key strategic European interest. EU budget will therefore be used to support projects by enhancing their credit rating, and thereby attracting funding from the EIB, other financial institutions, and private capital market investors. The risk for the EU budget will be in all cases strictly limited to the budgetary contribution.

In order to improve the efficiency of the CEF financial instruments, art 14(3) of the CEF regulation foresees the possibility – where applicable and subject to prior evaluation – of merging existing and new financial instruments. Please see section 11.11 for more details.

7.3.2. Impact of Common provisions regulation (CPR) for structural European Structural and Investment Funds (ESIF) on the PPP market

A very limited number of infrastructure investment projects receiving funding from the ERDF or the Cohesion Fund have been realised through PPP. The high co-funding rates of up to 85% of investment costs have limited the scope for private financing, as the grants could only be used as capital contribution. Furthermore complex rules on calculating the amount of investment costs eligible for EU funding, the funding gap, excluding the part of investment covered by profit-generation through user payments, have hampered private sector involvement. The new common provision regulation for the European Structural and Investment Funds contains three changes easing the realisation of projects through PPP. For the calculation of the funding gap, flat rates can be used and it will be possible to use the EU contribution to co-fund availability payments. In this respect, the CPR gives Member States the option of applying a flat rate revenue percentage on revenue-generating operations in order to reduce proportionally the maximum eligible expenditure. This will result in a reduction in the administrative efforts needed to manage revenue generating operations compared to the 2007-2013 programming period, but also provide a closer approximation of revenues than permitted by the system in place in 2000-2006 programming period. The flat rate approach will be an important simplification for managing authorities and beneficiaries and will also make it easier to establish public-private partnership projects with an ERDF, Cohesion Fund or EAFRD element. Furthermore, the CPR provides for minimum requirements to be included in PPP agreements which are necessary for the application of a derogation concerning eligibility of expenditures. Moreover, the regulation sets additional rules that allow the replacement of a beneficiary under PPP operations provided that the managing authority satisfies itself that the replacement partner fulfils and assumes all the corresponding obligations of a beneficiary.
It is expected that the new CPR will increase the number of projects in the transport sector realised through PPP in the Southern and Eastern EU Member States.

The possibility to make ESIF programmes’ contributions to the CEF is a novelty for 2014-2020 and is included in Article 38(1)(a) of the CPR. The advantages include:

• The possibility for the managing authorities (MA) in each Member States to save time and resources on the set-up phase (selection of financial intermediaries, preparation of funding agreement etc.) as the CEF (an EU level instrument) delivery system is used;

• The MA will not have to undertake on the spot verifications (regular control reports by bodies entrusted with the implementation) and the audit authority will not have to undertake audits of operations and audits of management and control systems (regular control reports form the auditors designated in the agreements setting up these FI); and

• One EU level instrument like the CEF comprises three key economic sector, transport, telecom and energy, and looks after the completion of the Trans-European Networks, of strong common interest for all the EU Member States, thus achieving significant critical mass and economies of scale.

Some elements do not change, however. The decision to make a contribution will have to be based on the ex-ante assessment of each particular ESIF programme, just as for the other implementation options. The ESIF programmes’ allocation is ring-fenced and to be invested in the programme area.

The CPR rules for ESIF programmes' contribution apply (eligibility scope, geographical limitation, end date of eligibility), alongside the EAFRD regulation for rural development interventions. The Member States’ MA are ultimately responsible for this operation.

8. CURRENT EU FINANCIAL INSTRUMENTS IN THE BROADER TRANSPORT, ENERGY AND COMMUNICATION SECTORS

8.1. Risk-sharing Instruments (Debt instruments)

A risk-sharing instrument is a special type of debt financial instrument, where the Commission shares risk with an entrusted entity such as the EIB. Three risk-sharing instruments are mentioned below: two are direct ‘ancestors’ of the Connecting Europe Facility financial instruments, both in terms of mechanics and sector: LGTT and PBI. The RSFF instrument was used to support Research & Development investment but its parameters could inspire an instrument for the CEF sectors.

8.1.1. Loan Guarantee Facility for TEN-Transport (LGTT)

The Loan Guarantee Instrument for Trans-European Transport (LGTT) is a financial instrument developed, set up and supported jointly by the European Commission and the European Investment Bank (EIB). It aims to facilitate a larger participation of the private sector involvement in the financing of Trans-European Transport Network infrastructure (“TEN-T”) by mitigating the relatively high levels of revenue risk in a project’s early operating stages when traffic might be slower than expected (the so-called ramp-up phase). This improves the ability of the borrower to service the senior debt in the form of loans during this period while also reducing the loans’ risk margins.

Projects or part of a project of common interest in the field of transport as defined in Decision No 1692/96/EC (the “TEN-T Project”), which are compliant with EU laws and for which financial viability is based in whole or in part, on revenues, tolls or other user-charges based income can benefit from an LGTT facility of up to 20% of the senior debt amount subject to a maximum ceiling of EUR 200 million. The support is available until 5-7 years after project completion.

If the LGTT facility is called upon, the EIB would become a creditor to the project and amounts due under the LGTT would rank junior to the debt service of the senior credit facility.

The EIB has provided EUR 497 million of the LGTT guarantees including EU Contributions and some EUR 1.7 billion of the senior debt to six trans-European transport network projects (see Table 12), whose total volume of capital expenditure amounts at EUR 11.7 billion.

The performance of the LGTT has been subject to an independent evaluation commissioned by the European Commission in 2013, which concludes the main lessons derived from the instrument:

- Despite the success of the instrument in the years 2007-2009, where all 6 transactions have been approved, due to decreasing number of the PPP initiated by the public side and the reluctance of the promoters and banks to take-on the demand-risks on the infrastructure projects, no additional transactions have been signed to date. The EIB is negotiating further 4 TEN-T projects.

- Since the instrument has been based on the revenues from the traffic generated by the projects, the instrument covers only the exploitation phase of the project (not the construction phase risks);

- The evaluation concludes that the public procuring authorities and the private sector are not sufficiently aware of the existence of the LGTT guarantees provided by the EIB. The
Commission and the EIB should more actively promote the instrument through various dedicated workshops and conferences.

8.1.2. Project Bond Initiative (PBI)

The Project Bond Initiative is a financial instrument developed, set up and supported jointly by the European Commission and the European Investment Bank (EIB).

It aims to stimulate capital market financing for large-scale infrastructure projects in the areas of Trans-European networks in transport and energy as well as broadband networks by improving the credit quality of the senior debt such that it can be financed by a bond issue which is attractive inter alia to institutional investors such as insurance companies and pension funds. In addition to financing provided for the benefit of individual projects, the objective is to pave the way for the creation of a new asset class for EU infrastructure which is investable for institutional investors. This way, the Project Bond Initiative intends to open up new sources for infrastructure financing to complement constrained public budgets and restricted bank lending for infrastructure projects with long term maturities.

The instrument can finance projects or part of projects eligible under the guidelines for TEN-T, TEN-E and the criteria for broadband projects defined in the amended Competitiveness and Innovation Framework Programme. Projects are usually structured as a Special Purpose Vehicle (SPV) established to build, finance and operate an infrastructure project. The Project Bond Credit Enhancement facility (PBCE) provides a subordinated debt tranche to the financial structure of the project company. This facility may take the form of a contingent credit line ("unfunded facility") or a subordinated loan ("funded facility") and is capped at a maximum of 20% of the total amount of senior debt up to EUR 200 million. In case the unfunded facility is called upon, the EIB becomes a creditor to the project company and amounts due under the PBCE would rank junior to the service of senior debt and senior to equity.

The EIB has been working on transactions in the three sectors. To date, four projects have been signed (as of August 2014): two energy projects, including one signed by the EIB as an own investment, without EU contribution, one transport project, which is a greenfield project and one telecommunications project.
The first project bond – July 2013

The first EUR 1.4 billion project bond due December 2034 under the Europe 2020 Project Bond Initiative was launched in July 2013, with a coupon of 5.756 at a spread of 100 basis points over Spanish government bonds. The bonds financed the construction and operation of underground gas storage and associated facilities off the northern Spanish Mediterranean coast, the Castor project. Standard & Poor's issued a 'BBB' rating to the bonds. The EIB provided a PBCE facility of EUR 200 million from own resources, representing 14% of the bond issue.

There were 30 investors in the bond, with insurers and pension funds taking over 60% of the issue, the remainder being agencies, fund managers and banks (only 4%). The investors were geographically diversified with approximately equal shares going to Germany, France, Spain, Italy, UK and Luxembourg. The EIB invested EUR 300m into the senior bond issue from own resources, bringing the total exposure of the EIB to the project to EUR 500m.

The bond has been issued by Watercraft Capital, an SPV, which will on-lend the proceeds to the project company thereby re-financing its outstanding shorter-dated loans which financed the construction of the gas storage facility. The project company will thus have financing, which is more line with its 30-year concession.

The project was subject to an Environmental Impact Assessment approved by the Spanish competent authority in 2009. Following seismic activity in the region in September 2013, the Spanish Authorities decided to stop the project in order to perform additional technical studies on its environmental impact.

The second project bond – November 2013

The 504MW Greater Gabbard offshore transmission project (OFTO) reached financial close on 27 November 2013. The OFTO Licence, granted by Ofgem, the UK regulator of electricity and gas markets, entitles the project company to own and operate the assets for a period of 20 years and in return receive availability-based revenues. The value of the fully operational asset is roughly GBP 350 million to be financed by the project company in part through the issue of a project bond.

A GBP 305 million public bond, which pays a fixed coupon of 4.137% and matures on 29 November 2032, has been issued to support the financing of the deal. The pricing was highly competitive at 125bps over the benchmark UK Gilt rate. The overall financing cost achieved on the project is roughly 30-35bps more competitive than the traditional bank lending option utilised on the OFTO deal that was closed prior to Greater Gabbard.

Moody’s assigned a provisional A3 rating to the issuance, with a stable outlook. The agency said that the rating reflected the credit enhancement provided by the PBI. To support the credit rating of the project, a PBCE Unfunded Facility was provided in amount of GBP 45.7 million, representing 15% of the bond issue. A total of GBP 46 million of equity has been provided by the project’s sponsors.

This was the first OFTO project of sufficient size to have attracted the interest of the capital markets. Such funding has long-been viewed as a good fit for the OFTO sector as the tariff paid to the operator is RPI-linked and 90% of the revenue is guaranteed.
The third project bond - first greenfield transaction and first transport – March 2014

The A11 motorway project in Belgium reached financial close on 20 March 2014. This is both the first greenfield PPP project and the first transport deal that is supported under the Project Bond Initiative. It uses an innovative structure of deferred drawdowns of the bond proceeds. The project comprises the DBFM of the A11 road project in Bruges over a 30 year concession period and will see the construction of a 13km 2-lane highway that will connect the N31 at Brugge to the N49 at Knokke, and approximately 90 civil structures, including 3 tunnels, a 1km viaduct and 2 twin draw bridges. Under the DBFM Agreement, the project company will receive availability-based payments from the Flemish Authority in return for meeting its construction and operational obligations.

The credit enhancement structure provided by the EIB with the support of the EU budget in the form of a letter of credit bridges the gap between traditional bank lending and project bond finance through an innovative mechanism that allows for committed financing and deferred drawdown, thus proving its capability to mitigate greenfield risk. The transaction is being financed through a EUR 578 million amortising project bond with a final maturity in 2045 and an equity participation of EUR 80 million. The bonds were issued at par with a fixed coupon of 4.49% which is a spread of 239 bps over the 4.75% German bunds maturing in 2034, and have been purchased by Allianz Global Investor and their client accounts (EUR 433 million) as well as the EIB (EUR 145 million). The bonds are subject to a deferred purchase agreement (drawdown spread over the construction period) based on a fixed quarterly schedule. This structure eliminates the negative cost of carry (which leads to an increase in the cost of bond financing) that occurs when bonds are purchased in full at the beginning of the construction period.

The EIB credit enhancement of EUR 115 million supporting the senior debt delivered an uplift of three rating notches by the Moody's agency to a rating of A3. The PBCE is in amount of 20% of Senior Debt during the construction phase and will step down to 10% of the outstanding senior debt in the operational phase, therefore reducing size as senior debt amortises.
Axione Infrastructures is a French company that holds 12 long-term concession agreements with local authorities to design, roll-out, finance, operate, maintain and provide wholesale broadband networking services to internet service providers (ISPs) in rural France under the Public Initiative Networks (PIN) framework. The programme covers the cities/association of cities of Gonfreville, Pau, Quimper and Tours, the Departments Charente Maritime, Loire, Maine et Loire, Nièvre, Sarthe and the Region of Limousin. The promoter is selling the network services on an open access basis to the commercial operators for their commercialisation to the final customer which are households and businesses. Construction works of the overall programme started in 2005, and all networks were completed and put in service by 2008. Today the network covers 1.7 million households and has some 230,000 connected households and businesses.

The credit enhancement structure provided by the EIB with the support of the EU budget in the form of a letter of credit allowed the company to raise the first listed and rated project bond in Europe in the telecommunications sector. The transaction which reached financial close on 29 July 2014 allowed to refinance the existing senior debt maturing in 2014. It was financed through the issuance of an EUR 189 million amortising project bond with a final maturity in 2025. The financial structure is complemented by EUR 72 million of equity and an undrawn EUR 20 million capex facility. The bonds were issued at par with a fixed coupon of 2.622% which represents a spread of circa 160 bps over the benchmark, and have been purchased by French institutional investors.

The EIB credit enhancement of EUR 37.8 million supporting the senior debt delivered an uplift of one and a half rating notches by the Moody's agency to a rating of Baa2. The PBCE amounts to 20% of the senior bonds.

The Project Bond Initiative has been subject to an interim independent evaluation commissioned by the European Commission. The evaluation has outlined that, despite the small number of projects signed to date, the instrument had a positive impact on infrastructure financing, raising the interest of institutional investors in European infrastructure investment. Initial investor feedback suggests that the project bond solution is a valuable complement to bank lending solutions and may help to narrow the infrastructure financing gap. The Project Bond facility is particularly suitable for projects that struggle to reach investment grade because of sovereign ratings constraints or specific project features (innovative construction technique or high demand risk for instance). The evaluation underlined the need to maintain the interest of investors by building a pipeline of mature projects over the long term.

The EIB and the European Commission have made considerable efforts to promote the initiative and to outreach towards wider public via various bilateral meetings with the Member States, international events, conferences and workshops. Despite these achievements, the market for Project Bonds still requires further development, in particular more work is needed to familiarise public procuring authorities with the solution before these players may, but are not obliged to, suggest suitability of the Project Bonds at the bidding stages of procurement. In areas where procurement by the public sector plays a crucial role, further awareness raising and practical guidance to the public sector will be a necessary step in the success of the Project Bonds.

The Commission is assessing a number of improvements to the PBI and the possible extension of project bond solutions to other infrastructure sectors, including sustainable transport, renewable
generation and smart grid assets. Practical arrangements for possible contributions under ESIF may also be examined.\(^\text{75}\)

8.1.3. **Risk-sharing finance facility (RSFF)**

The Risk-Sharing Finance Facility is a financial instrument developed, set up and supported jointly by the European Commission and the European Investment Bank (EIB) to support R&D projects, which are generally riskier than more traditional business projects.

The RSFF thereby allows additional senior lending to R&D projects. Moreover, projects with a higher risk than would otherwise be possible for the EIB to support can also be considered. The loans will benefit those R&D projects (including infrastructure projects) which have a strong European dimension.

Partners may approach EIB either individually or through joint legal entities. Beneficiaries may thus include large companies, SMEs, public and private research organisations, public-private partnerships. Partners in large projects supported by FP7, such as joint technology initiatives, collaborative projects and research infrastructures, will be automatically eligible. Eligible requests will then be examined by the EIB according to the usual banking practice.

8.2. **Equity Instruments**

8.2.1. **The Marguerite Fund – 2020 European Fund for Energy, Climate Change and Infrastructure**

The Marguerite Fund (2020 European Fund for Energy, Climate Change and Infrastructure) is a pan-European equity fund set up in 2010 by EIB, Caisse des Dépôts et Consignations, Cassa Depositi e Prestiti, Instituto de Crédito Oficial, Kreditanstalt für Wiederaufbau, PKO Bank Polski with the Commission as a founding investor with a commitment of EUR 80 million. Together with other investors which have joined later the fund has commitments of EUR 710 million.

The fund was set up to act as a catalyst for key investments in renewables, energy and transport (TEN-T) by taking minority equity stakes in projects. It combines a market-based principle of return to investors with the pursuit of public policy objectives and has a 20-year life. Its investment period is expected to end in December 2016.

The fund has a strong greenfield focus with a minimum of 65% of the total commitments invested in greenfield projects. The fund targets projects of at least EUR 50 million in size in the case of renewables or of EUR 200 million for energy or transport projects. It can deploy equity tickets between EUR 10 million and EUR 100 million.

To date, the Marguerite Fund has closed 9 transactions with committed equity capital of EUR 285 million, out of which two in the TEN-T sector and seven in renewable and energy sectors. The Fund has been awarded market prize of the best performing equity fund in the energy sector in 2012. All closed projects are worth circa EUR 4.5 bn of capital investments (see Table 10 below):

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\(^{75}\) As announced in the *Communication from the Commission to the Council and the European Parliament on Long Term Financing of the European Economy*, COM/2014/0168 final
The Marguerite Fund has been subject to an independent evaluation commissioned by the European Commission in 2013 and to the audit of the European Court of Auditors; conclusions from both evaluation processes must be taken into account as lessons learnt.

- The European Court of Auditors has concluded that the European Commission has not interpreted correctly the EU Financial Regulation concerning the principle of attribution of funds, as it has used the commitments from the TEN-T funds to cover investments in all three sectors, while expecting a multiplier effect on the EU Contribution of EUR 80 million to the TEN-T projects of at least EUR 280 million by the end of the investment period in 2016. Following this audit, the Commission reflects on the improvement of the bidding investment targets for the Fund and on alignment of the legal set-up of the Fund in line with the Financial Regulation. The Commission replied to the Court that the specification of the funds needs to be ensured indeed at the end of the investment period in 2016.

8.2.2. **European Energy Efficiency Fund (EEEF)**

The European Energy Efficiency Fund (EEEF) is a mixed hybrid specialized investment vehicle set up by the European Investment Bank (EIB), the Cassa Depositi e Prestiti (CDP) and the European Commission. Deutsche Bank acts as fund manager and has a minor shareholding in the vehicle.

The EEEF aims to provide market-based financing in form of debt and to a limited extend equity for commercially viable public projects in the area of energy efficiency, small-scale renewable energy and clean urban transport within the European Union undertaken by municipal, local and regional authorities and public and private entities acting on behalf of those authorities. The Fund will pursue a two track investment approach, either investing directly in projects or via financial institutions. It has a layered risk/return structure to stimulate private investment with a fixed commitment of EU budget funds.

The European Commission has invested EUR 125 million in the Junior Tranche of the Fund, partly assuming the economic risks associated with the investment projects. The European Investment Bank is committing EUR 75 million in the Mezzanine Tranche and in Senior Shares. Further commitments are from the Cassa Depositi e Prestiti (CDP), contributing EUR 60 million also in Mezzanine and Senior Shares, and EUR 5 million in the Mezzanine Tranche by Deutsche Bank, who will also act as Investment Manager of the fund.

### Table 10: List of projects in the portfolio of the Marguerite Fund (as of February 2014)

The Marguerite Fund has been subject to an independent evaluation commissioned by the European Commission in 2013 and to the audit of the European Court of Auditors; conclusions from both evaluation processes must be taken into account as lessons learnt.

<table>
<thead>
<tr>
<th>Signing</th>
<th>Project</th>
<th>Core-sector</th>
<th>Sub-sector</th>
<th>Country</th>
<th>Type</th>
<th>Project EV(1)</th>
<th>Marg. Equity(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov-11</td>
<td>C-Power</td>
<td>Renewable Energy</td>
<td>Offshore Wind</td>
<td>Belgium</td>
<td>Greenfield</td>
<td>1,340</td>
<td>39</td>
</tr>
<tr>
<td>Dec-11</td>
<td>Toulo-Rosières</td>
<td>Renewable Energy</td>
<td>Photo Voltaic</td>
<td>France</td>
<td>Greenfield</td>
<td>430</td>
<td>27</td>
</tr>
<tr>
<td>Apr-12</td>
<td>A1 (Aut. Arlanzon)</td>
<td>TEN-T</td>
<td>Motorway (TEN-T)</td>
<td>Spain</td>
<td>Brownfield</td>
<td>240</td>
<td>25</td>
</tr>
<tr>
<td>May-12</td>
<td>Massangis</td>
<td>Renewable Energy</td>
<td>Photo Voltaic</td>
<td>France</td>
<td>Greenfield</td>
<td>210</td>
<td>25</td>
</tr>
<tr>
<td>Sep-12</td>
<td>Aeosus</td>
<td>Renewable Energy</td>
<td>On-shore Wind</td>
<td>Poland</td>
<td>Brownfield</td>
<td>190</td>
<td>23</td>
</tr>
<tr>
<td>Nov-12</td>
<td>Chirmogeni</td>
<td>Renewable Energy</td>
<td>On-Shore Wind</td>
<td>Romania</td>
<td>Greenfield</td>
<td>140</td>
<td>27</td>
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<tr>
<td>Dec-12</td>
<td>Butendiek</td>
<td>Renewable Energy</td>
<td>Offshore Wind</td>
<td>Germany</td>
<td>Greenfield</td>
<td>1,350</td>
<td>72</td>
</tr>
<tr>
<td>Apr-13</td>
<td>Poznan Plant</td>
<td>Renewable Energy</td>
<td>Energy from Waste</td>
<td>Poland</td>
<td>Greenfield</td>
<td>220</td>
<td>24</td>
</tr>
<tr>
<td>Nov-13</td>
<td>Zagreb Airport</td>
<td>TEN-T</td>
<td>Airport (TEN-T)</td>
<td>Croatia</td>
<td>Greenfield</td>
<td>400</td>
<td>22</td>
</tr>
</tbody>
</table>

TOTAL (EURm) 4,520 285

Notes: (1) Project Enterprise Value (EV) includes both equity and debt funding of the project capital cost
(2) Marguerite Fund commitment including contingent equity, as at December 2013
The Fund will aim to raise its total volume from currently EUR 265 million to approximately EUR 800 million by attracting further investors once it has a sufficient track record. A technical assistance facility is also available to support the preparation of investments pursued under the EEEF.

Table 11: Signed projects in the portfolio of the EEEF (status as of January 2014)
9. IDENTIFIED MARKET GAPS

9.1. General considerations on market gaps in the CEF sectors

In light of the potential synergies identified by the CEF impact assessment and drawing on ex post programme evaluations, stakeholder consultations and expert recommendations, the Commission has identified two main policy areas in which, in defining the operational rules of the CEF, the Union can address market and regulatory gaps that currently prevent EU funding from adequately supporting the development of infrastructures needed to achieve the objectives of the EU 2020 Strategy. The technical and financial regulatory gaps are addressed in separate but parallel initiatives at the EU level (e.g. Communication on Long Term Financing, TEN-E regulation …) whereas financial incentives are provided for in the CEF. The following sections deal specifically with the CEF Debt Instrument.

Strategic projects of European interest require European start-up funding, which private investors cannot always shoulder alone. In particular, the record investment volumes in Europe's transport, energy, information and communication networks that will be needed over the next decade in order to underpin the Europe 2020 flagship actions, combined with the fact that government budgets face severe constraints, make it crucial to foster the participation of the private sector in the financing of infrastructure projects. Yet, with the exception of telecoms experience so far has shown that private investment in infrastructures has remained limited. As noted in the Commission's consultation paper on the Europe 2020 Project Bonds Initiative, "the majority of infrastructure in the EU with a trans-European dimension and interest is still financed from the public purse (EU, national and regional level) and only a small part draws on private funding".

According to the financing needs in the upcoming decades, the construction and operation timelines the current ways to invest in infrastructure will increasingly be insufficient, it is vital to facilitate access to infrastructure for new or existing private investors who stand ready to invest in long term assets.

The CEF projects are currently considered by private investors as riskier for a variety of reasons, their trans-boundary dimension, the historically regulated and oligopoly environment, or uncertainty related to construction/traffic/demand and technological developments. The steps needed to apprehend the CEF infrastructure projects, the limited number of projects as well as their individual specificities which are making the risk assessment a case by case process, finally the investment size of those projects and the case by case risk assessment to be developed, are dissuading smaller and not specialised investors to look at those projects.

As pointed out in the external evaluation of the PBI, the more severe financing gaps are observed in sub-investment grade projects and operations in countries with higher sovereign risk and/or with limited access to project finance debt. The key objective the CEF debt instrument is to support otherwise hard to finance projects and attract capital market financing with a view to better address market failures.

According to the current situation, the obvious conclusion is that the EU infrastructure funding framework has not been able so far to create an environment sufficiently conducive to private

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investment needed in each sector and geographical area. In addition to the insufficient focus of EU financial support and the inadequate levels of co-funding rates for particularly complex and risk laden projects, the insufficient use of financial instruments constitutes one of the main factors leading up to this situation. In energy and broadband, no financial instruments have been used so far at EU level (with the exception of the pilot scheme for project bonds). Given the investment challenge up to 2020 as well as the growing number of complex or cross-border projects, this lack of instruments that facilitate access debt finance, reduce the cost of capital, adapt lending conditions or facilitate project finance structuring could be an obstacle to the development of certain projects of strategic European importance. Therefore, the CEF debt instrument will have to mitigate the perceived extra risks by sharing them, especially in order to attract private investors particularly in green-field projects. The absence of an identified homogeneous pipeline of projects should also be addressed through a portfolio approach to smooth individual project risks.

As regards instruments supporting the use of subordinated debt (loans and guarantees), the LGTT evaluation highlighted that a too narrow definition of the risks addressed by a financial instrument (in the case of LGTT the traffic risk) may undermine the instrument's capacity to address broader market failures and increases the risk of obsolescence following market evolutions. In the case of transport projects, it was felt that the LGTT instrument was unable to target certain sectors like rail and maritime where corporate finance type structures were used. A similar (if not more acute) problem would arise in the other sectors covered by the CEF, i.e. energy transmission and broadband where infrastructure projects are mostly carried out on a corporate basis. Therefore, the availability of a debt instrument for both corporate and project finance structures would facilitate access to finance to promoters in priority CEF areas.

As described above, attracting private financing is implying some prerequisites for projects or corporates involved in the project itself. The private investors are expecting corporates/projects which intend to attract private financing to provide transparent and standardised data regarding the corporates/projects in order to evaluate risk and remuneration profiles. Some of the CEF projects promoters are facing investment requirements which are of a different order of magnitude than what they use to develop, implying accessing to new financing partners and methods. In order to attract a wider range of investors, in parallel to the CEF debt instrument implementation, a certain number of support actions should be developed to provide a positive private investment environment.

9.2. Market gaps and obstacles specific to the Transport sector

The following market imperfections have been identified in the transport sector:

9.2.1. Gross investments and expenditure on maintenance in the transport sector decline in most UE countries since the financial crisis

Since 1990s, according to OECD statistical methodology, current EU 27 countries have spent EUR 1.7 trillion on gross investments in the transport sector, with a marked decline on investments since the financial crisis (2007-2008 levels). Differences between the Central Eastern European Countries and western economies are pertinent in the gross investments as well as investments per mode of transport.

A general trend has been an increase of the maintenance expenditure of the infrastructure until 2007-2008, followed also by the decline on the maintenance expenditure.
9.2.2. Insufficient bank lending for long-term infrastructure assets at the European level

The intervention at the EU-level aims at improving the market failure caused by insufficient bank lending in the long-term infrastructure assets at the European level (such as the cross-border transport infrastructure, or infrastructure crucial for the EU network effects with lifetime of assets +30 years).

The banks tend towards "risk aversion" for long-term infrastructure investments and lack ability to accurately estimate and value the forecasts of the traffic flows and the cash-flows, which are expected to be generated from such new infrastructure. Also the underlying technical and construction risks, estimations of the maintenance budgets are risk factors for the banks.

Since 2009, the banks have largely withdrawn from lending to large infrastructure transport projects, based on the demand-risks schemes, where the forecasts of revenues generated by the project are uncertain. All Loan Guarantees facilities for the TEN-T projects (LGTT instrument), have been signed in the period 2007-2009. The European Investment Bank has secured an important part of the senior debt for these LGTT projects, alongside a number of public and private national banks. (see also lessons learnt on the implementation of the LGTT instrument in section 7.3.1 and 8.3).

<table>
<thead>
<tr>
<th>Signed LGTT projects</th>
<th>LGTT amount (EUR) (EIB and EU contribution)</th>
<th>approval date of the facilities</th>
<th>senior debt provided by the EIB</th>
<th>debt provided by the national public and private banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany AUTOBAHN A5</td>
<td>25</td>
<td>12.2007</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>France LGV SUD (EUROPE ATANTEQUE)</td>
<td>200</td>
<td>7.2008</td>
<td>800</td>
<td>2343</td>
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<td>Spain EIX TRANSVERSAL C-25 PFP</td>
<td>70</td>
<td>4.2008</td>
<td>200</td>
<td>287</td>
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<td>Portugal BAIKO ALENTEJO MOTORWAY</td>
<td>25</td>
<td>11.2008</td>
<td>200</td>
<td>190</td>
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<td>Germany AUTOBAHN AUGSBURG ULM A8</td>
<td>60</td>
<td>12.2009</td>
<td>180</td>
<td>149</td>
</tr>
<tr>
<td>United Kingdom LONDON GATEWAY PORT (TEN)</td>
<td>497</td>
<td>11.2009</td>
<td>117</td>
<td>494</td>
</tr>
<tr>
<td></td>
<td>497</td>
<td>11.2009</td>
<td>117</td>
<td>494</td>
</tr>
</tbody>
</table>

Source: Annual Reports to the Commission and the European Investment Bank

Table 12: Loan Guarantee signed projects, in EUR million
9.2.3. Planning framework for the European projects of common interest

Changing priorities in the infrastructure are risk element of market uncertainty around important transport infrastructure projects.

The Regulation establishing the Connecting Europe Facility establishes a stable and predictable long-term list of sections of the European projects of common interest, which translate the investment and funding priorities at the European level over the period 2014-2020 and beyond, as completion of these projects will take place during later periods.

Such predictability and transparency on the pre-selection of the sections of the European projects of common interest and the general consensus between the Member States and the legislative authorities of the European Union, leads to substantially de-risk the market perception as to the unstable or changing priorities for the transport infrastructure.

Such long-term infrastructure planning, enabled through the CEF, allows the national procuring authorities along the private sector investors and public banks to have confidence on the priorities to be funded at the European level.

9.3. Market gaps and obstacles specific to the Energy sector

The market gaps identified in the Energy sector vary depending on the form of financing techniques: TSOs seeking financing on the corporate financing basis are affected by a different gap to projects using project finance financing techniques

9.3.1. Investment gaps for projects financed on a corporate finance basis

Most TSOs finance the majority of their investments on a corporate finance basis. The order of preference is retained earnings, loans from banks and IFIs and only then the bond markets, which are only used by a minority of TSOs. Debt maturities do not match the lives of the assets of 40 years or longer. The ownership model, corporate governance and financial capacity of TSOs vary across Europe. Several TSOs have not been rated by credit rating agencies which prevent them from sourcing capital directly from the capital market (e.g. bonds). Several TSOs, mostly those which span off from vertically integrated utilities, although legally separated, financially they remain linked with the overall holding company/group. Such TSOs tend to take advantage of the financial strength of the mother company and raise the investment capital on the corporate level rather than as a self-standing entity.

In case of a number of TSOs in the EU the use of corporate financing model for the delivery of new transmission assets may, however, become increasingly difficult. On average gas and electricity TSOs across the EU will invest some 50% more than in the past (see figure 21). For some of them, however, the increase will be threefold or higher. It will be an important and unprecedented test for the capacity of their balance sheets and it is expected that some will need to consider third party co-

77 Privately owned, publicly owned, hybrid model
investment\textsuperscript{79} either on the corporate or project level\textsuperscript{80}. The latter may lead to a more frequent use of project finance.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{chart.png}
\caption{Comparison of past and planned future TSO investments (EUR billion)}
\end{figure}

As regards TSOs' access to the bond market, TSOs with a strong capital market orientation rely strongly on the bond market as a source of financing. However, almost a third of gas and electricity TSOs in Europe do not have their own credit rating (or a parent company performing financing functions on their behalf) and in some cases lack standardised financial data, which severely hinders their access to certain financing mechanisms.\textsuperscript{g}

9.3.2. Project finance techniques and investment gaps in the Energy sector

Project finance techniques which would require functional separation of individual projects from the RAB, including the ring-fencing of its revenues, are used rarely and for specific types of assets only. Project finance is generally perceived to be complex and pricier and since debt-equity ratios are often fixed by the regulator, they do not benefit from the higher gearing possible under a project finance solution.

In case of elements of integrated transmission networks (gas and electricity), only in the case of cross-border investment is there any use of project finance structures. This stems from the fact that such elements of the network are often operated on the merchant basis (i.e. building its business case

\textsuperscript{79} For some TSOs, in particular these majority state-owned, it may still be legally impossible to seek third party equity co-investment. A time-limited equity investment by the EU, or an equivalent guarantee, could, however, prove a workable alternative

\textsuperscript{80} This happened for example in case of the German off-shore transmission assets of the Dutch TENNET. Third party investor (Mitsubishi) has become an investment partner for the individual offshore cables developed by TENNET.
on the price differential of energy in the networks on the two sides of the border). Besides, for operational reasons it is often practical to isolate and ring-fence the asset especially when it is a result of a partnership of two distinct TSOs. Project finance (and setting up dedicated project companies) has been used more frequently for LNG reception terminals, gas storage projects as well as importation pipelines for bringing gas to the EU. Such assets, however, constitute only a fraction of the 248 Projects of Common Interest\textsuperscript{81} (PCIs), i.e. the projects which could access the instruments under the CEF.

It can nevertheless be expected that the PCIs’ recourse to project finance will increase in the near future. This will be, on the one hand, driven by the fact that gradually more projects implementing off-shore transmission grid as well as electricity highways\textsuperscript{82} are expected to be proposed as PCIs. On the other hand, the unprecedented volume of investment is likely to push a number of TSOs into considering alternatives to balance sheet financing for at least some of their projects.

As a result, any financial instruments to support new transmission infrastructure should facilitate corporate finance but also increasingly project finance structures. It would be important that the instruments could be used also in the Member States with less developed financial markets\textsuperscript{83}. The market creation and demonstration function of the instruments would be particularly valuable in that context. In this respect keeping the instruments possibly simple and adjustable to the specificities of individual jurisdictions will be key.

The focus of the instrument should be on the facilitation of the construction phase of the project. In the regulated universe of energy, transmission projects already in operation normally represent predictable income streams. This is appealing to investors and in case of need makes the re-financing on attractive terms feasible. It is the financing during the construction phase which constitutes the challenge especially that there seems to be no adequate risk mitigation instrument that financial markets currently offer on acceptable terms\textsuperscript{84}.

9.4. Market gaps and obstacles specific to the Telecom sector

9.4.1. Bottlenecks and challenges for NGA projects

The variation of NGA investment costs with customer density and the distribution of population across national territories of many EU Member States give rise to a specific dilemma: a large part of the population lives in areas situated between urban clusters (where there is a clear business case for commercially-driven roll-out) and very rural regions where undeniably deployment without public support is nowadays hardly conceivable. In case of the theoretical, but illustrative “Euroland” cited

\textsuperscript{81}Identified in line with the TEN-E Guidelines Regulation (347/2013), status as of March 2014

\textsuperscript{82}The off-shore grid development and the construction of the high-voltage direct current (HVDC) overlay transmission lines (referred to as electricity highways) will constitute new types of investment for TSOs. They will be structurally separated from currently existing networks therefore the recourse to project finance should be more straightforward. Additionally, the investments will be particularly capital intensive and the TSOs will have no choice but involve co-investors through project finance structures. Moreover, such projects will be innovative both in terms of implementation structure and technology used and therefore any instruments which could help promoters cover certain risks would help in accessing the financing and/or attracting investors.

\textsuperscript{83}It would appear that in particular access to long term debt financing for TSOs operating on well-developed, liquid financial markets represents little or no difficulty in normal conditions. The investors and financiers are, however, less ready to provide financing to TSOs and projects in eastern and south-eastern part of the EU

\textsuperscript{84}E.g. the yield requested by third party investors during the construction phase exceeds the regulatory approved rate of return
above, these areas are home to c. 44% of the total population if the clusters from "less urban" to "less suburban" are taken as a proxy (see Table 13). In these areas, investment costs per line are somewhere in the middle between the two ends of the spectrum (e. g. see figure xx for illustration in the case of FTTH) and available revenue potential frequently renders commercial roll-out near-viable or just viable. This means that if a number of conditions are right a business case exists, but this business case is usually not as compelling and clear-cut as in or at the fringe of conurbations. Specifically, the question is often whether expected revenues and cash-flows can adequately remunerate the risks associated with the project. Unfortunately, projects often lack access to well-designed financing solutions which optimise risk allocation and which are fine-tuned to the specificities of NGA investments. Availability of such financial structures could give a decisive boost to the economics of projects in these clusters, improving their commercial viability.

<table>
<thead>
<tr>
<th>Geotype</th>
<th>Cluster ID</th>
<th>Potential customers per km²</th>
<th>Total potential customers per cluster</th>
<th>Share of total customers</th>
<th>Potential customers (cumulated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dense urban</td>
<td>1</td>
<td>4,000</td>
<td>1,763,916</td>
<td>8%</td>
<td>1,763,916</td>
</tr>
<tr>
<td>Urban</td>
<td>2</td>
<td>1,600</td>
<td>2,163,672</td>
<td>10%</td>
<td>3,927,588</td>
</tr>
<tr>
<td>Less Urban</td>
<td>3</td>
<td>800</td>
<td>2,646,000</td>
<td>12%</td>
<td>6,573,588</td>
</tr>
<tr>
<td>Dense Suburban</td>
<td>4</td>
<td>470</td>
<td>2,062,480</td>
<td>9%</td>
<td>8,636,068</td>
</tr>
<tr>
<td>Suburban</td>
<td>5</td>
<td>280</td>
<td>2,480,360</td>
<td>11%</td>
<td>11,096,428</td>
</tr>
<tr>
<td>Less Suburban</td>
<td>6</td>
<td>150</td>
<td>2,989,056</td>
<td>14%</td>
<td>14,065,484</td>
</tr>
<tr>
<td>Dense Rural</td>
<td>7</td>
<td>60</td>
<td>4,331,208</td>
<td>20%</td>
<td>18,416,692</td>
</tr>
<tr>
<td>Rural</td>
<td>8</td>
<td>&lt; 60</td>
<td>3,448,368</td>
<td>16%</td>
<td>21,865,060.</td>
</tr>
</tbody>
</table>

**Source:** Hoernig et. al. (2010)

**Table 13: Distribution of customers in a representative European country ("Euroland")**

Where NGA investments are viable in principle there is often a mismatch between the risk-return profile of projects and the type of investments targeted by investors who provide the bulk of financing. On the debt side, long payback cycles combined with elevated levels of risk (at least in the early stages of operation) mean that NGA projects may not qualify for standard senior bank lending. Where lenders are ready to extend credit loan tenors often do not match the long asset lives of telecom networks. At the same time, debt capital market solutions may not be available to plug the gap because transactions costs are prohibitive in relation to the relatively small size of projects. On the equity side, the weakness of NGA investments is that they do not fit the definition of popular asset classes: NGA projects carry greater risk than more traditional infrastructure in transport, energy or water and are by no means comparable to the high-risk/high-return strategies with short to medium term exit of other fund investors. Funds that specifically look for telecom assets in Europe represent a niche so far and only invest according to narrowly defined criteria including geographical limitations.\(^\text{86}\). Clearly, vehicles that would cause the risk characteristics of NGA investments to

\(^{85}\) Additional columns omitted

\(^{86}\) One exception is the Netherlands-based Communication Infrastructure Fund (CIF). Furthermore, Macquarie European Infrastructure Funds (MEIF) have selectively invested in parts of communications infrastructure such as tower and broadcasting infrastructure.
resemble more closely the usual investment categories pursued by key providers of financing would make NGA projects more investable.

The above constraints are exacerbated by additional factors which impede the matching process between investors and candidate projects. Generally speaking both senior lenders and other investors have difficulties with appraising the risks associated with broadband projects and with valuing telecom network assets. Small ticket sizes and lack of standardisation across projects further complicate the deal-making process. These factors drive transaction cost and often prove to be a decisive obstacle.

Most of the above obstacles have more severe impact at the level of stand-alone projects or alternative project promoters (including SMEs, local administrations, regional associations and local (public) utilities) who by virtue of smaller scale and less-developed access to capital markets have fewer options to access and implement more sophisticated financing tools. However, in many investment situations outside areas with a strong business case, alternative public and private promoters are those with the strongest propensity to invest. Therefore, to overcome specific issues confronting this group, facilities that pool a number of smaller transactions into suitable investment vehicles could be needed. Finally, while telecom corporates may be affected by some market frictions to a lesser extent, these companies would also have to deal with a migration of their risk profiles if they were to embark on higher-risk NGA deployments on a large scale.

9.5. Summary of financing needs

The table below summarises the conclusions as to whether debt or equity is needed and in which form.

<table>
<thead>
<tr>
<th></th>
<th>Transport</th>
<th>Energy</th>
<th>Broadband</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate debt</td>
<td>Yes - Rail</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Corporate equity</td>
<td>No</td>
<td>Yes</td>
<td>To be assessed</td>
</tr>
<tr>
<td>Project debt</td>
<td>Yes</td>
<td>Yes - some</td>
<td>Yes</td>
</tr>
<tr>
<td>Project equity</td>
<td>No</td>
<td>Yes - some&lt;sup&gt;87&lt;/sup&gt;</td>
<td>To be assessed</td>
</tr>
</tbody>
</table>

Any financial instruments to support new infrastructure should be conceived as to facilitate project finance and, to some extent, corporate finance structures. At the same time procuring authorities in Europe should be encouraged to promote and make more use of private financing in the delivery of their infrastructure projects.

The next section will describe the proposed financial instruments under the Connecting Europe Facility that will address the market gaps identified above.

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<sup>87</sup> Equity stakes in energy transmission projects would normally attract sufficient interest of third party investors. There may, however, be situations where EU level risk capital could be conducive to carrying out a project, especially in its pre-construction and construction phases.
10. PROPOSED CEF FINANCIAL INSTRUMENTS AND SUPPORT ACTIONS

As foreseen in the CEF Regulation, the objective of the financial instruments under the CEF is to facilitate infrastructure projects’ access to project and corporate financing by using Union funding as leverage. The financial instruments shall help finance projects of common interest with a clear European added value, and facilitate greater private sector involvement in the long-term financing of such projects in the transport, energy and broadband sectors. At the same time, the design of financial instruments should also support the development of a sustainable financial environment – both capital markets and banks - enabling in the longer term an enhanced private financing of infrastructure projects.

Financial instruments aim to complement, rather than replace grants. CEF financial instruments will provide support in market situations where help is required in crowding-in private financing. The option to use both grants and financial instruments to support projects is explicitly provided by the CEF regulation (article 14.4).

The financial instruments will benefit projects with medium- to long-term financing needs and will provide to infrastructure stakeholders such as financiers, public authorities, infrastructure managers, construction companies and operators a coherent market-oriented toolbox of Union financial assistance. The aim of these instruments is to help to overcome market constraints by improving the financing and/or risk profiles of the infrastructure investments. This, in turn, shall enhance the access of project promoters to loans, guarantees, equity and other forms of private financing.
The CEF Regulation envisages two broad types of financial instruments:

(a) a Debt Instrument involving loans, guarantees and credit enhancement mechanisms to project bonds, underpinned by a risk sharing mechanism with the relevant entrusted entity;

(b) an Equity Instrument;

The implementation of financial instruments relies on entrusted entities. They manage the Union contribution and also are risk-sharing partners which increases the leverage of the EU budget. The entrusted entities include institutions such as the EIB, EIF, the EBRD or national development banks such as those described in section 4.2. The entrusted entities will be selected in accordance with the Financial Regulation.

Given the market failures currently identified and the need to start operations in 2014, it is proposed to initially set up and launch the Debt Instrument in cooperation with the EIB. The instrument will build on the existing Project Bond Initiative and the Loan Guarantee for TEN-Transport. However, given that not all CEF eligible projects where market failures have been identified (see previous sections) can be financed by capital markets or on a project financing basis, it is intended to make use of all the toolbox available of debt instruments available under the CEF Regulation, including senior and subordinated funded and unfunded instruments. This will allow, under well defined circumstances, for support of corporate financing and bank financing justified by existing market conditions.
weaknesses, building on the experience acquired under the Risk Sharing Finance Facility for Research, Development and Innovation.

The detailed description of the admissible CEF debt instruments is provided in Annex I, part III, of the CEF Regulation. Section 10.1 outlines the main principles of the Debt Instrument envisaged with the EIB and the main target areas covered by it.

As highlighted in the evaluation of the LGTT instrument, the market relevance of any instrument in this area would have to be tested on an ongoing basis to cater for the evolution of the infrastructure financing market. Therefore, the CEF Debt instrument should be designed to provide for sufficient flexibility to adjust to market developments while avoiding undue complexity. However, the Delegation Agreement to be concluded with the EIB should envisage appropriate governance mechanisms (e.g. the Steering Committee to be established under the CEF Debt Instrument) to make sure that the target market is under monitoring and that the instrument continues to effectively address market failures and is adjusted in case of need.

Operations under the Debt Instrument will be supported by a risk sharing mechanism with the EIB where the EU budget takes the first loss piece of the portfolio of such operations. As reflected in the Interim report on the pilot phase of the Project Bond Initiative\(^8\), the first loss provisioning provided by the EU budget will be shared among all projects in the three sectors covered by the CEF\(^9\). This will allow for higher diversification and hence maximise the number of projects that can be supported by the CEF Debt Instrument. This arrangement will be structured in full compliance with the CEF Regulation and the Financial Regulation. Finally, the structuring of the Debt Instrument will cater for potential future contributions of European Structural and Investment Funds.


\(^9\) In case this EU level instrument receives contributions from other sources to reinforce its financing capacity for other types of projects/sectors, e.g. low carbon economy sectors, the principle of sharing of the first loss provisioning would be extended accordingly.
A preliminary description of the risk sharing mechanism can be found in Appendix V. The precise details of the risk sharing mechanism will be defined following negotiations with the EIB and set out in the Commission-EIB Delegation Agreement.

The availability of grants and the development of financial instruments will not address one of the key shortcomings in the infrastructure market today, i.e. the lack of a sufficient pipeline of mature projects; Both the LGTT evaluation and the interim report on the Project Bond Initiative made it clear that the initial focus should be on stimulating the pipeline of CEF eligible projects in Member States. At the same time, there seems to be scope for addressing capacity building measures with respect to knowledge and competence to implement PPP schemes in Member States where these are underutilised. Under these circumstances, where needed use should be made of the support actions envisaged under the Debt Instrument as outlined in the CEF Regulation.

In a second phase, the Commission will consider the set-up of an Equity Instrument.

10.1. CEF Debt Instrument

The CEF Regulation provides a detailed description of the debt instruments allowed under it. In particular, the CEF Regulation foresees that the goal of the CEF Debt Instrument is to contribute to overcoming deficiencies of the European debt capital markets through supporting financing by entrusted entities or dedicated investment vehicles in the form of senior and subordinated debt or guarantees. The CEF Debt Instrument shall provide risk-sharing for loans and guarantees including Project Bonds.
In line with Art.15 of the CEF Regulation, the financial instruments under the CEF may receive additional contributions from other sources including EU budget, Member States and investors. This is a possible way forward for including other types of infrastructure projects and sectors, e.g. low carbon economy. In such case, the Commission will need to agree to the relevant changes to the eligibility criteria or investment strategy which may be necessary due to the additional contribution.

Under European Structural and Investment Funds, Member States may decide to contribute resources to centrally-managed EU level instruments, make use of off-the-shelf instruments or develop tailor made ones. Practical arrangements for possible contributions to CEF from ESIF in line with the respective regulations will be pursued. The CEF Debt Instrument, in particular the PBI, could serve as a vehicle for the efficient use of ESIF in the CEF sectors and also, after potential extension, in sectors adjacent to the ones covered by the CEF, for example renewable energy, sustainable transport, smart grids, complementing ESIF activities in these areas.

10.1.1. Debt financing provided by the EIB and other entrusted entities

Because of the longstanding experience covering the whole of the EU, including its participation in the PBI pilot phase, the EIB is best placed to be the entrusted entity in charge of managing the debt instrument under CEF in the initial phase. The EIB have relevant experience and skills on infrastructure projects, as well as experience in managing EU funds. Other financial institutions may gradually be invited to partner the Commission in the provision of CEF Debt Instrument. The identification of such entities will be bases on objective criteria, in line with the Financial Regulation.

The implementation will take the form of a mandate to the EIB and other possible entrusted entities, which would be risk sharing partners. Whereas the detailed functioning of the risk sharing mechanism is described in Appendix V, the main principle is that the EU contribution will be used as first loss provisioning of the portfolio of operations undertaken by the EIB under the CEF Debt Instrument. The CEF Regulation foresees that the maximum risk covered by the Union budget shall not exceed 50% of the risk of the target debt portfolio under the debt instrument. As shown in Appendix V, according to initial calculations and based on the assumption of a merged portfolio between LGTT, PBI and the CEF, the Union budget is expected to cover ultimately between one fourth and one third of the target debt portfolio. By limiting the residual risk taken by the EIB, the risk-sharing mechanism is designed to create additional risk capacity of the EIB as required in the CEF Regulation. Other entrusted entities may be selected in the future.

In the current environment where the private sector is expected to play a significant role, an instrument to facilitate access to finance in suboptimal investment situations where projects will have difficulties to receive adequate bank or capital market financing should be developed. Given the different needs emerging in the various CEF sectors, the Debt Instruments will support senior debt operations (loans and guarantees) and subordinated debt ones (funded and unfunded, including project bonds, loans and guarantees).

The EIB will finance CEF eligible operations through senior loans and guarantees falling under their standard credit criteria without support of the EU budget. Under the CEF Debt Instrument, similarly to the Risk Sharing Finance Facility set up under Horizon 2020, senior loans and guarantees would only be granted to higher risk (typically sub-investment grade) operations. The receipts deriving from these operations will be used solely to part-finance projects eligible under CEF. As such, the instrument will be fully complementary to standard EIB loans and guarantees and will contribute to filling a market gap identified in the previous chapter. For a number of project promoters, in particular energy transmission system operators which face particularly high investment...
programmes, the EIB is nearing its borrowing limits. With the support of the risk sharing arrangement under CEF, additional lending capacities would now become available.

Final beneficiaries may include corporates undertaking infrastructure investments in transport sectors not typically covered by project finance such as rail, maritime or air, energy transmission owners and operators such as TSOs and broadband network operators. Moreover, senior lending to riskier project companies in these sectors may be envisaged to the extent that capital market solutions are not possible.

The senior debt granted under the CEF Debt Instrument shall not exceed 50% of the overall senior debt raised by the borrower. The necessary criteria will be defined so as to ensure consistency with State Aid rules where appropriate. The expected leverage of the EU budget under this part of the CEF Debt Instrument is expected to range from 6 to 10.

The subordinated debt instrument will improve access to senior debt while in certain circumstances it may provide an uplift on the equity-type funding. For example, the instrument could provide the TSOs responsible for energy transmission in Member States with appropriate incentives to prioritise PCI projects while avoiding the need for negotiation with the individual regulators and preventing costs from being passed on to end-users.

An even higher effectiveness would be achieved where the subordinated debt instrument obtains at least partial equity recognition by the rating agencies and the regulators. This would probably require the instrument to be very long term/perpetual in nature, hence potentially exceeding the economic life of the project as assessed by EIB. This feature will be further explored and possibly addressed by the EIB in its financing.

As foreseen in the CEF Regulation, the subordinated debt instrument will rank behind the senior debt but ahead of equity (and related financing related to equity). The subordinated instrument would rank senior to common shares and pari-passu with all other present or future unsecured and subordinated obligations of the issuer.

The EU could also consider supporting TSOs and other companies undertaking CEF eligible projects in their efforts to tap the capital market either through providing bond enhancement or through investment in bonds issued where these are sub-investment grade.

As foreseen in the CEF Regulation, the subordinated debt instrument will not exceed 30% of the overall senior debt raised by the borrower. This cap will be modulated in the delegation agreement depending on the credit rating and other characteristics of the markets where it would be ultimately applied. The expected leverage of the EU budget under this part of the CEF Debt Instrument is expected to range from 6 to 15.

The CEF Debt Instrument will also include an extension of the Project Bond Initiative. As foreseen in the CEF Regulation, the full implementation of the PBI shall be subject to an independent full-scale evaluation to be carried out in 2015.

The PBI will consist of subordinated debt financing (funded or unfunded) aimed at facilitating financing for project companies raising senior debt in the form of bonds. This credit enhancement instrument shall aim at helping the senior debt to achieve an investment grade credit rating. It shall rank behind the senior debt but ahead of equity and financing related to equity.
As foreseen in the CEF regulation, the subordinated debt financing shall not exceed 30% of the total amount of the senior debt issued. However, the specific percentage will be set by the EIB at a project specific level.

The PBI will build on the experience acquired under the pilot phase of the initiative. As such, it will clarify mechanisms and arrangements which have been experimented during the first two years of implementation. In this context, the EIB and the Commission agreed that the term of "credit enhancement" covers all elements of financial structures which are a necessary to enable issuance of a project bond. This includes inter alia exposures under hedging arrangements such as retail price index swaps entered into by the Project Companies to convert inflation-indexed cash-flows into nominal cash-flows and vice versa, depending on the nature of the project revenues and the type of payments demanded by bondholders.

Moreover, in order to facilitate the financing of greenfield projects, novel bond structures with a deferred drawdown features have been developed. In this context, the project bond credit enhancement was made fully available during the construction period for an amount equal to 20% of the bonds issued at financial close, irrespective of how many of such bonds have actually been drawn down by bondholders. This reflected the necessary nature of the project bond credit enhancement as a letter of credit made available in full during the whole construction period.

The PBI is currently limited in that it can only enhance capital markets instruments. This has resulted in instances where the use of the PBI is precluded although it could facilitate either full or part funding of eligible projects in the capital markets. At the same time, the current state of implementation of the PBI showed that greenfield projects in infrastructure present a challenge to potential bond investors in the capital markets. Against this backdrop, further adjustments are foreseen to facilitate the financing of greenfield projects which are expected to represent the bulk of CEF eligible projects. For some projects (for example transport projects in Germany with significant milestone payments to be received from the Procuring Authority during construction), the most efficient financing solution could be a combination of long term bonds and short term bank loans funding construction works in advance of the milestone payments from the authority. The project bond credit enhancement could then be extended to provide a fuller coverage of the financing package provided that this is essential to the success of the bond issuance and the uplift of the creditworthiness of the operation. In particular for the lending arrangement during construction phase, the EIB may be taking up additional responsibilities, in particular acting as controlling creditor or club loan arranger. As foreseen in the CEF Regulation, the setting-up of dedicated investment vehicles may be envisaged to allow the pooling of contributions from multiple investors. The Union contribution may be subordinated to that of other investors.

In order to attract non specialised or smaller financial institutions or private investors, an aggregation vehicle could be created based on the expertise and due diligence experience of some specific entrusted entities such as the EIB. At the same time, the vehicle could attract resources from other national promotional banks to increase leverage of EU budget and increase ownership at national level.

The vehicle would be structured in a way to minimise the relatively high management costs typically associated with infrastructure debt funds, hence attracting institutional investors, namely those that have not the in-house capacity to carry out autonomously the necessary due diligence on infrastructure operations.

This vehicle would provide additional resources for the CEF financial instruments and would be designed so as to ensure complementary with EIB and other sources' financing.
10.2. Equity instrument

The CEF Regulation foresees the possibility to establish an equity instrument. Depending on market feedback and relevant evidence the need for such an instrument may be analysed in a separate ex-ante assessment for equity, taking stock inter alia of the conclusions of the evaluation of the EU participation in the Marguerite Fund.

A potential equity instrument would be structured in line with the provisions set out in Annex I, Part III, section II of the CEF Regulation. In particular, the maximum amounts of the Union contribution shall be limited as follows:

- 33% of the target equity fund size; or
- co-investment by the Union in a project shall not exceed 30% of the total equity of a company.

The leverage will be expected on average to range from 5 to 10, depending on market specificities.

Different structures could be envisaged: a contribution to an existing infrastructure, the establishment of a dedicated investment vehicle aimed at supporting CEF eligible projects, the set up of a mirror fund selectively co-investing with other equity investors in CEF-eligible projects or a direct mandate to a fund manager or other equity investor. All these structures present advantages and disadvantages that have to be examined in light of the policy objectives to be achieved. In particular, beyond market additionality, several other issues should be examined such as the capacity of the instrument to attract private sector investors, governance, risk return considerations, management costs, duration, the focus on CEF eligible projects and the balance between corporate and project finance equity investments.

10.3. Support actions under the CEF Debt Instrument

Under the CEF Regulation, the implementation of the Debt Instrument may be supported by a set of accompanying measures. These may include, amongst other measures, technical and financial assistance, measures to raise the awareness of capital providers and schemes to attract private investors.

The regulation foresees that the European Investment Bank, at the request of the European Commission or the Member States concerned, will provide technical assistance, including on financial structuring to projects of common interest, including the ones implementing the core network corridors. Such technical assistance shall also include support to administrations in order to develop appropriate institutional capacity.

The pilot phase of the project bonds initiative has demonstrated that the pipeline of potential projects for the project bond instrument should be developed, since the interim evaluation has shown that there is a high level of liquidity for the market of infrastructure projects of investment grade, but that the number of projects able to use the instruments is very limited, in spite of the high investment needs in the transport, telecommunications and energy sectors.

Technical assistance should therefore be focused on the project pipeline emergence, both at upstream level, for instance by helping procuring authorities in adapting their documentation (or in some cases the legislation) to facilitate the possible use of the instruments, and at project level, to help project
promoters in the structuring of their project to attract potential investors. The Commission, its executive agency and the EIB will continue to work upon the identification of potential projects eligible to the sectorial EU regulation. In the case of transport, this work could be done as part of the work on the implementation plans of the Corridors of the TEN-T.
11. Justification of the Proposed Financial Instruments Regarding the Financial Regulation Requirements

11.1. Addressing Market Failure and Sub-optimal Investment Situations

Financial instruments shall address market failures or sub-optimal investment situations, which have proven to be financially viable but do not give rise to sufficient funding from market sources.

There is substantial regulatory and market failure as well as sub-optimal investment situations leading to substantial underinvestment in viable investment opportunities. In particular:

In transport, public expenditure is one of the most important sources of infrastructure funding almost everywhere. Even before the crisis, however, huge debts meant that the public sector was facing a major challenge to reconcile public spending on infrastructure with the rising demand. Public-sector investment has trended downwards in recent years.

Infrastructure financing via private-sector banks was also made more difficult by the financial crisis and stricter regulation of the financial sector. Higher capital requirements for banks to comply with Basel II and Basel III as well as the long-term funding structures of infrastructure projects have played a part in the decisions by numerous banks to curtail or end their exposure to the infrastructure financing business.

- Access to finance - for private and public sector organisations and businesses is restricted due to wider market factors.
- Lack of motivation to prioritise infrastructure investment in investment decisions where infrastructure has to compete for capital with other investment opportunities.
- Lack of confidence and risk appetite of borrowers and institutional investors caused by the financial crisis.
- Potentially long payback times are too high a risk for investors - and associated transaction costs of appraising investment proposals.
- Lack of information on the costs and benefits of measures.

The CEF also requires to facilitate the establishment of financing facilities to maximize the benefits of multiple streams of financing.

11.2. Additionality and Consistency with Other Forms of Public Intervention

Financial instruments shall provide additionality. Financial instruments shall not be aimed at replacing those of a Member State, private funding or another Union financial intervention.

There is a clear rationale for EU financial instruments, given the size of investment needs in infrastructure. A decisive action needs to be taken to involve private financing to support infrastructure investment. Complementary solutions have to be found to unlock private capital and restore stable funding streams through the capital and banking market. EU funds should accompany market dynamics, providing incentives rather than replacing market participation in infrastructure funding.
Ex post evaluations have shown that past policies for TEN financing have not been sufficient in correcting the market/regulatory failures that determine the present situation and in triggering a greater value for money. In view of the size of the investments needed, EU funding instruments, in particular innovative financial instruments, will contribute to mustering the necessary involvement of the private sector to accelerate the development of pan-European infrastructure.

The initiative does not aim at replacing other instruments that provide finance to infrastructure projects, but complements them and ensures critical size. Given the widespread nature and the size of the market failure, there will be plenty of scope for other national, and/or regional initiatives and financial instruments to further address the market failure.

The added value will be further maximized by working closely with financial instruments across different Member States and to understand the investment priorities of each Member State.

**11.3. Non-distortion of competition / no crowding-out of market funding**

Before their operational implementation, financial instruments shall ensure non-distortion of competition in the internal market, non-crowding-out of private funding and consistency and / or compliance with State aid rules.

The size and nature of the market failure mean that it is highly unlikely that the envisaged financial instruments will lead to any crowding out of existing economic operators. There is little risk of crowding out given the paucity of private sector investment activity. Rather the intention is to ‘crowd in’ investors of the private sector.

**11.4. Subsidiarity**

Union-level financial instruments shall address identified market needs more appropriately than similar financial instruments at national or regional level.

The investment needs for achieving the CEF’s objectives are estimated at up to EUR 270 billion. However, in the absence of Union intervention, private sector investment is expected to be not more than EUR 50 billion for the period until 2020. This results in an investment gap of up to EUR 220 billion. The analysis carried out by the Commission services have shown that while the market and national budgets are expected to play a major role in delivering the required infrastructures through appropriate investment and pricing mechanisms, some investments in infrastructure will not take place or will be delayed far beyond 2020, if the EU does not take action. Therefore, there is a need for a significant contribution from the EU budget in the next Multi-Annual financial framework to ensure that EU infrastructure priorities are actually delivered.

Since the objectives of the action to be taken, and in particular the coordinated, development and financing of the trans-European networks, cannot be sufficiently achieved by the Member States and can therefore, by reason of the need for coordination of these objectives, be better achieved at Union level, the Union may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as also set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives.
11.5. Leverage effect

Generate a leverage effect. The Union contribution to a financial instrument shall aim at mobilizing a global investment exceeding the size of the Union contribution according to the indicators defined in advance.

The financial instrument's objective is to mobilise as much capital as possible for EU objectives by mobilising a global investment in the form of equity or debt that is several times greater than the EU-budget commitment.

By defining forms, methods and rules of financing that can ensure maximal leverage in attracting public and private investment for projects with a European and Single Market dimension the leverage of EU funds shall be increased. The EIB involvement could be a catalyst in terms of standardization that would help to create a broader and more liquid market for infrastructure financing across Europe. Centralised management under defined objectives and high quality standards spurs demonstration and signalling effects, i.e. typically the consistent application and promotion of best market practices. This fosters the qualitative development of a market and increases intermediary sophistication over time. As a result new market entry by new originators and new investors (or investor classes) is possible.

The leverage effect of the proposed Debt Instrument will be in line with the requirements set out in the CEF Regulation, i.e is expected to be from 6x to 15x depending on the type of operation.

11.6. Proportionality

The envisaged intervention shall be proportional with regard to the size of the identified funding gap and the expected leverage effect. Additional qualitative effects such as the diffusion of best practices shall be assessed.

In accordance with the next multi-annual financial framework (MFF), the overall CEF budget for 2014-2020 is EUR 33 242 259 000 of which up to 10% can be allocated to financial instruments. through the use of innovative financial instruments such as project bonds. This volume of funds allocated to financial instruments, as well as additional investment from private and public sources potentially leveraged through the use of innovative financial instruments such as project bonds, is of a non-excessive proportion to the size of the market gap.

11.7. Alignment of interest

When implementing financial instruments, the Commission shall ensure that there is a common interest in achieving the policy objectives defined for a financial instrument, possibly fostered by provisions such as co-investment, risk-sharing requirements or financial incentives, while preventing a conflict of interests with other activities of the entrusted entity.

Financial instruments will provide a volume of finance that will help facilitate investment in projects prioritized by Member States, in line with EU policy. The credibility of the mechanism (backed by the EIB) will give confidence to other public and private investors to invest which is another policy objective. The Connecting Europe facility will provide strong support to financing infrastructure projects. The envisaged financial instruments therefore enable excellent alignment between the EU and MS in the pursuit of CEF objectives. The alignment with the EIB's interest is ensured by the risk-revenue sharing mechanism set out in Appendix V.
11.8. Definition of target final recipients

The target final recipients will be the Projects of Common Interest (PCIs) that are eligible under the CEF regulation. The specific lists or areas of intervention will be established in the work programmes of DGs MOVE, ENER and CNECT.

11.9. The duration and financial impact of the financial instrument(s)

The EU Contribution may be earmarked for eligible operations that reach their approval by the EIB governing bodies at the latest by 31 December 2022, provided that the amounts have been committed by the Commission until 31 December 2020.

11.10. Re-use of funds

The use of the amounts accrued as revenues under the CEF financial instruments, as well as of the repayments to the Commission shall comply with the provisions of the Financial Regulation. A description of the potential use of these amounts is proposed in Appendix V.

11.11. Merger of the portfolios of financial instruments under Connecting Europe Facility

The results of the external evaluation on PBI pointed towards the potential benefits of a cross-sectoral merger of CEF funds, while complying with the specification principle and the other provisions of the Financial Regulation. To this extent, the evaluation concluded that a single first loss piece portfolio could maximize the amount of EIB financing and consequently the number of projects that can be supported by the EU funds because of the benefits of portfolio diversification. Furthermore, this would improve the ability of the instrument to absorb potential losses arising from changing market circumstances and sector specific developments.

The CEF Regulation provides that the CEF financial instruments shall consist of a single equity instrument and a single debt instrument and that, subject to a prior evaluation, these new financial instruments may merge with the existing risk-sharing financial instruments (i.e. LGTT/PBI), thus opening up the possibility of having a single multi-sector instrument. A practical mechanism of this merger is presented in Appendix V. The precise details will be defined in the Commission-EIB Delegation Agreement.

90 Article 140(6) of the Financial Regulation
91 Chapter V, Art. 14.2
12. **OTHER EVALUATION CRITERIA (EXPECTED IMPACT AND PERFORMANCE MONITORING)**

12.1. **Expected qualitative and quantitative impact**

Expected output, results and impact shall be established for the proposed financial instruments.

By using the financial instruments to foster infrastructure investment in line with the CEF, qualitative and quantitative outcomes and impacts are established.

The financial Instruments benefit projects with medium- to long-term financing needs and produce greater benefits in terms of market impact, administrative efficiency and resource use. They support the multiplier effect of Union spending by attracting additional resources from private investors. The financial instruments help to overcome market constraints by improving the financing and/or risk profiles of the infrastructure investments. This helps to enhance the access of firms and other beneficiaries to loans, guarantees, equity and other forms of private financing. In addition the financial instruments generate acceptable returns to meet the objectives of other partners or investors, whilst aiming to preserve the value of assets provided by the Union budget.

The risk-sharing instruments for loans and guarantees are designed to create additional risk capacity in the entrusted entities. This allows the entrusted entities to provide subordinated and senior debt to projects and corporates in order to facilitate promoters' access to bank financing.

12.2. **Proposed performance indicators**

Appropriate performance indicators shall be established for the proposed financial instruments.

The following indicators would be of use to monitor the performance of the Debt Instrument of the CEF beyond the relevant ones set out in Article 4 of the CEF Regulation. More detailed performance indicators and potential targets for the financial instrument will be agreed with the EIB. At this stage, the following indicators have been considered:

- Number of projects supported by type (project finance, corporate finance, PPP) and by sector
- Volume of financing made available by the Debt Instrument
- Volume of private finance leveraged by the Debt Instrument
- Overall volume of finance leveraged by the Debt Instrument
- Number of Member States in which projects were financed by the Debt Instrument
- Volume of financing made available by the EIB
- Financing made available by sector
- Volume of private, public or public-private partnership investment in projects of common interest; in particular the volume of private investment in projects of common interest achieved through the Debt Instrument
12.3. Monitoring and evaluation

The Commission is responsible for monitoring the implementation of activities under the Financial Instruments including on-the-spot controls as appropriate.

The EIB shall produce performance and financial reports in accordance with a format, content and periodicity to be agreed. A standard reporting framework for instruments shall be managed/delivered by EIB. Financial Institutions will be required to provide regular reports to EIB. Quarterly reports; annual reports; site visits; audits and KPIs would be expected to be used.

The CEF shall take into account the independent full-scale evaluation on the European Project Bond Initiative, to be carried out in 2015. On the basis of that evaluation, the Commission and the member states shall assess the relevance of the Europe 2020 Project Bond Initiative and its effectiveness in increasing the volume of investment in priority projects and enhancing the efficiency of Union spending.

As established in the CEF Regulation, the Commission will also undertake an evaluation by the end of 2017 in close cooperation with the Member States and beneficiaries to provide feedback on the implementation of the CEF. This evaluation will assess inter alia how to make financial instruments more effective.
APPENDICES
APPENDIX I - INTERNATIONAL FINANCIAL INSTITUTIONS ACTIVE IN INFRASTRUCTURE FINANCING IN ONE OR MORE EU MEMBER STATES

I. EIB

The EIB, as a European institution, is effectively the EU bank. The EIB’s mission, laid down in the Lisbon Treaty, is to contribute to the balanced and steady development of the internal market, particularly in the EU’s less-developed regions and for projects which cannot be funded by other sources on reasonable terms.

In practice, the EIB’s business model is driven by its ability to obtain low-cost funding in the bond markets based on its AAA rating, and on the low risk profile of its loan portfolio, which includes long-term infrastructure projects, loans to large corporates and loans where the risk is partly or wholly covered by third-party guarantees.

An additional strength of the EIB lies in its ability to take very large loan tranches on its balance sheet. On the other hand, this dependence on low portfolio risks has limited its ability to provide lending in higher risk environments, such as the EU’s programme and vulnerable countries.

Objectives

The projects must contribute to the EU economic policy objectives. The six objectives for the bank’s lending activities are Cohesion and Convergence, Support for small and medium sized enterprises (SMEs), Environmental sustainability, Implementation of the Innovation 2010 Initiative, Development of Trans-European Networks of transport and energy (TENs) and Sustainable, competitive and secure energy. About 90% of EIB financing goes to projects located within the European Union.

Products

EIB can offer large loans with fixed or variable interest rates in practically all major currencies with maturities normally ranging from 4 to 20 years, although longer tenors are available. It traditionally provides two main financing facilities:

- **Individual loans** for capital spending programs or projects costing more than EUR 25 million.
- **Global loans** consisting of loan facilities to banks and financial institutions to help them to provide finance to customers with eligible spending programs or projects costing less than EUR 25 million.

The EIB may exceptionally finance more than 50% of the total project cost, so the involvement of the EIB is intended as a catalyst, encouraging other banks, financial institutions and the private sector to participate in an investment.

Specialised products

**The Structured Finance Facility** aims to match the types of funding to the requirements of large-scale infrastructure projects, by using a mix of the following instruments:
EIB can generate operations up to a maximum of EUR 3.75 billion.

Detailed annual overview of EIB lending to the CEF sectors is presented below:

<table>
<thead>
<tr>
<th>Loans provided by the EIB within the EU in CEF sectors ('07-'12, in EURm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>Railways</td>
</tr>
<tr>
<td>Urban transport</td>
</tr>
<tr>
<td>Roads, motorways</td>
</tr>
<tr>
<td>Maritime transport</td>
</tr>
<tr>
<td>Air transport</td>
</tr>
<tr>
<td>Intermodal freight terminals</td>
</tr>
<tr>
<td><strong>Transport</strong></td>
</tr>
<tr>
<td>Electricity</td>
</tr>
<tr>
<td>Oil and natural gas</td>
</tr>
<tr>
<td>Heat</td>
</tr>
<tr>
<td><strong>Energy - Transport and supply</strong></td>
</tr>
<tr>
<td>Mobile telephony</td>
</tr>
<tr>
<td>PSTN; transmission and broadcasting</td>
</tr>
<tr>
<td>Composite telecommunications</td>
</tr>
<tr>
<td>Satellites, ground stations</td>
</tr>
<tr>
<td><strong>Telecommunications</strong></td>
</tr>
<tr>
<td><strong>TOTAL CEF sectors</strong></td>
</tr>
</tbody>
</table>

Source: EIB annual statistical reports

Trend: Starting 2010, the loan amounts granted within the EU in the infrastructure sector, recorded a steady decline.

**II. EBRD**

The European Bank for Reconstruction and Development (EBRD) provides products such as loan and equity finance, guarantees, leasing facilities and trade finance to companies from Central Europe to Central Asia and southern and eastern Mediterranean. Reflecting the bank's client base, the focus is on private sector development and support for the transition to a market economy. EBRD provides finance both directly to end-customers and via local banks. It aims to assign a dedicated team of specialists with specific sectorial, regional, legal and environmental skills to each customer. In addition to its own-funds operations, the EBRD also manages donor programmes funded by
governments and international institutions. Compared with the EIB and KfW, the EBRD’s operations are less leveraged, which reflects the somewhat higher risk profile but also the fact that EBRD’s portfolio does not benefit from a state guarantee or a large amount of callable capital.

The EBRD provides project financing for banks, industries and businesses, both new ventures and investments in existing companies. It also works with publicly owned companies, to support privatisation, restructuring state-owned firms and improving municipal services

Objectives

The bank aims to assist countries to develop into market-oriented economies. Specifically, the bank seeks to promote the development of the private sector within these economies through its investment operations and through the mobilisation of foreign and domestic capital. Local conditions determine how the Bank can operate, shape its strategy and in some cases lead it to devise innovative ways of providing financing and reducing risk. The EBRD prepares detailed strategies for each of its countries of operations, adapting its financial tools and working methods to the opportunities and needs of each country and project.

EBRD operates in 10 EU Member States: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia.

Products

The principal forms of direct financing that may be provided by the EBRD are loans (senior, subordinated, mezzanine or convertible debt), equity and guarantees. Equity investments may be undertaken in a variety of forms.

- Lending and equity participations are limited to 35% of the project or company value.
  - Minimum loan amount EUR 5 million, maximum EUR 250 million.
  - As regards equity, EBRD can take EUR 2-100 million stakes.
- Typical private sector projects are based on at least one-third equity investment. Significant equity contributions are required from the sponsors, which should have a majority shareholding or adequate operational control. In-kind equity contributions are accepted
- An EBRD project cycle can range from 1 to 15 years.

| EBRD investments in EU in infrastructure and renewable energy projects (EUR million) |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|
|                                 | 2007 | 2008 | 2009 | 2010 | 2011 |
| Infrastructure                  |      |      |      |      |      |
| Transport 1)                    | 52   | 75   | 400  | 87   | -    |
| Energy                          | -    | 75   | 200  | -    | -    |
| Renewable energy 2)             | 52   | -    | 200  | 87   | -    |
|                                  | 65   | 67   | 274  | 364  | 272  |

Notes:
1) Comprises two projects: M6-M60 Motorway (Hungary) and R1 motorway (Slovak Republic)
2) Includes construction of combined cycle gas turbine power plants

III. NIB

The Nordic Investment Bank (NIB) is an international financial institution owned by the governments of five Nordic and three Baltic countries: Denmark, Estonia, Finland, Iceland, Latvia,
Lithuania, Norway and Sweden. The bank provides long-term loans and guarantees to projects that strengthen competitiveness of the Nordic-Baltic region and enhance the environment. The projects can involve large investments by the corporate sector or investments by small and medium-sized enterprises, targeted in cooperation with financial intermediaries.

NIB’s bonds enjoy the highest possible issuer credit rating AAA/Aaa with leading rating agencies Standard & Poor’s and Moody’s.

**Objectives**

To receive NIB financing, a project must fulfil the Bank’s mandate in at least one of two ways: contribute to strengthening the competitiveness\(^{92}\) of the member country economies or enhance the environment\(^{93}\). Outside the membership area, projects financed by NIB should be of mutual interest to the country of the borrower and the member countries\(^{94}\).

NIB focuses its financing operations on the following business areas:

- Energy and environment
- Infrastructure, transportation and telecom
- Heavy industry and mechanical engineering
- Consumer goods and services
- Financial institutions and SMEs

NIB has operations in its Nordic and Baltic member countries: Denmark, Estonia, Finland, Latvia, Lithuania and Sweden, which are all EU members. In addition to that, NIB has operations in Poland, the only EU country that is part of the selected focus countries and has financed projects in Bulgaria, Netherlands and Slovakia between 2007 and 2012.

**Products**

NIB provides loans and guarantees to private and public companies, governments, municipalities and financial institutions. In terms of volume, most of the projects from the member countries are financed through corporate loans. NIB also offers loan programmes to both member and non-member countries, which are disbursed in several tranches through intermediaries. Intermediary operations make possible the financing of small and medium-sized enterprises (SMEs). NIB finances on-lending to SMEs for investments in renewable energy.

- NIB loans are usually used for the financing of larger projects of more than EUR 50 million. NIB channels financing to projects of small and medium-sized enterprises through intermediaries.
- Generally a NIB loan or guarantee for a project does not exceed 50% of the total cost of the project.
- The interest rate is set on a fixed or floating basis, as preferred by the borrower.
- The borrower can choose between most convertible currencies.

**Special products**

\(^{92}\)Projects that raise the efficiency of products and services offered by the Bank’s customers.

\(^{93}\)Projects that prevent and treat pollution. NIB’s environmental focus areas are: cleaner production and resource management; environmental technology; emission reductions; and renewable energy.

\(^{94}\)Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden
NIB provides environmental loans through special lending facilities:

- Baltic Sea Environment Financing Facility (BASE) EUR 500 million;
- Climate Change, Energy Efficiency and Renewable Energy Facility (CLEERE), EUR 3,000 million;
- Environmental Lending Facility, EUR 300 million, and targeted to neighbouring countries of the owners.

In addition to that, NIB is offering project and structured finance, sovereign loans and guarantees.

<table>
<thead>
<tr>
<th>Loans agreed within the EU between 2007 and 2012</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFRASTRUCTURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport&lt;sup&gt;1)&lt;/sup&gt;</td>
<td>146</td>
<td>215</td>
<td>75</td>
<td>116</td>
<td>288</td>
<td>283</td>
</tr>
<tr>
<td>Energy&lt;sup&gt;2)&lt;/sup&gt;</td>
<td>124</td>
<td>15</td>
<td>30</td>
<td>95</td>
<td>27</td>
<td>75</td>
</tr>
<tr>
<td>Broadband&lt;sup&gt;3)&lt;/sup&gt;</td>
<td>-</td>
<td>50</td>
<td>30</td>
<td>-</td>
<td>50</td>
<td>74</td>
</tr>
<tr>
<td>RENEWABLE ENERGY&lt;sup&gt;4)&lt;/sup&gt;</td>
<td>251</td>
<td>399</td>
<td>95</td>
<td>180</td>
<td>439</td>
<td>128</td>
</tr>
<tr>
<td>TOTAL</td>
<td>397</td>
<td>614</td>
<td>170</td>
<td>296</td>
<td>727</td>
<td>411</td>
</tr>
</tbody>
</table>

Notes:
1) Projects include investments in railway systems, motorway construction, airport modernisation and intercity metro line construction.
2) Projects include investments in upgrading electricity transmission and distribution systems.
3) Projects include investments in 3G broadband networks and expansion of mobile telecommunications network.
4) The projects relate primarily to investments in wind farms. There are included also projects concerning the construction of combined heat and power plants, construction of a gasification-based waste-to-energy plants, production of renewable diesel, construction of ethyl alcohol for the production of ethanol, on-lending to SMEs for investments in renewable energy and for environmental projects that include production of renewable energy.

IV. World Bank

The World Bank comprises two institutions with 188 member countries: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), the latter of which focuses exclusively on the world's poorest countries.

IBRD aims to reduce poverty in middle-income and creditworthy poorer countries by promoting sustainable development through loans, guarantees, risk management products, and analytical and advisory services. Thanks to its AAA status, strong balance sheet, prudent financial policies, and its expected treatment as a preferred creditor when a country has difficulty in repaying its loans, IBRD is able to borrow at low cost.

Objectives

Six strategic themes drive the Bank’s work, focusing on the poorest countries, fragile and conflict-affected states, the Arab world, middle-income countries, global public goods issues, and delivery of knowledge and learning services. EU countries eligible for World Bank Borrowing are Bulgaria, Latvia, Poland, Romania.

Products

The World Bank funds three basic types of operations: investment operations, development policy operations, and Program-for-Results operations. Investment operations provide funding (in the form of IBRD loans or IDA credits and grants) to governments to cover specific expenditures related to economic and social development projects in a broad range of sectors: education, health, public
administration, infrastructure, financial and private sector development, agriculture, and environmental and natural resource management.

Since 2007, IBRD has financed only two infrastructure projects in the EU countries, in the Rural and Inter-Urban Roads and Highways sector. The total amount lent was USD 175.3 million.

<table>
<thead>
<tr>
<th>Project</th>
<th>Country</th>
<th>Commitment/amount</th>
<th>Approval date</th>
<th>Lending instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Trade and Transport Facilitation Project</td>
<td>Bulgaria</td>
<td>52.8</td>
<td>21-Mar-07</td>
<td>Specific Investment Loan</td>
</tr>
<tr>
<td>Road Infrastructure Rehabilitation project</td>
<td>Bulgaria</td>
<td>122.5</td>
<td>26-Jun-07</td>
<td>Specific Investment Loan</td>
</tr>
</tbody>
</table>

As far as the Renewable energy sector is concerned, IBRD has invested USD 27 million from 2007 till present in the EU countries. Specifically, it has invested USD 9 million in 2007 and USD 18 million in 2011.

<table>
<thead>
<tr>
<th>Project</th>
<th>Country</th>
<th>Commitment/amount</th>
<th>Approval date</th>
<th>Lending instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF-CZ GIS /AAU TRADE</td>
<td>Czech republic</td>
<td>6</td>
<td>11-Oct-11</td>
<td>Carbon Fund</td>
</tr>
<tr>
<td>PL-GIS-Green investment scheme</td>
<td>Poland</td>
<td>12</td>
<td>03-Oct-11</td>
<td>Carbon Fund</td>
</tr>
<tr>
<td>CZ - Green Investment Scheme</td>
<td>Czech republic</td>
<td>9</td>
<td>26-Jun-07</td>
<td>Carbon Fund</td>
</tr>
</tbody>
</table>
## APPENDIX II - DEBT FUNDS AND MANAGED ACCOUNTS

### FUNDS AND MANAGED ACCOUNTS WITH DEBT ALLOCATION HAVING REACHED FINAL CLOSE, MAIN FOCUS ON EUROPE

<table>
<thead>
<tr>
<th>Final close</th>
<th>Name of fund / managed account</th>
<th>Fund manager</th>
<th>Funds raised (EURm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-07</td>
<td>European Clean Energy Fund</td>
<td>EIG Global Energy Partners</td>
<td>354</td>
</tr>
<tr>
<td>Jul-07</td>
<td>South European Infrastructure Equity Finance Fund</td>
<td>European Public Infrastructure Managers</td>
<td>120</td>
</tr>
<tr>
<td>Oct-08</td>
<td>Fondo Sistema Infrastrutture</td>
<td>Orizzonte SGR</td>
<td>130</td>
</tr>
<tr>
<td>Dec-08</td>
<td>DG Infra+</td>
<td>DG Infra</td>
<td>135</td>
</tr>
<tr>
<td>Dec-08</td>
<td>CEE Sidefund I</td>
<td>CEE Group</td>
<td>80</td>
</tr>
<tr>
<td>Mar-12</td>
<td>EUROFIDEME II</td>
<td>Mirova Environnement &amp; Infrastructures</td>
<td>94</td>
</tr>
<tr>
<td>Jun-12</td>
<td>Aviva Special PFI</td>
<td>Aviva Investors</td>
<td>198</td>
</tr>
<tr>
<td>Jun-12</td>
<td>AMP Capital Infrastructure Debt Fund</td>
<td>AMP Capital Investors</td>
<td>400</td>
</tr>
<tr>
<td>Jun-12</td>
<td>Royal Bank of Scotland Pension Fund Separate Account</td>
<td>Hastings Funds Management</td>
<td>926</td>
</tr>
<tr>
<td>Jul-12</td>
<td>Adiant Solar Opportunities I</td>
<td>Adiant Capital Partners</td>
<td>400</td>
</tr>
<tr>
<td>Aug-12</td>
<td>Ageas-Natixis Infrastructure Debt Account</td>
<td>Mirova Environnement &amp; Infrastructures</td>
<td>2,000</td>
</tr>
<tr>
<td>Oct-12</td>
<td>Copenhagen Infrastructure I</td>
<td>Copenhagen Infrastructure Partners</td>
<td>800</td>
</tr>
<tr>
<td>Nov-12</td>
<td>Swiss Re Debt Separate Account</td>
<td>Macquarie Infrastructure Debt Investment Solutions</td>
<td>386</td>
</tr>
<tr>
<td>Jan-13</td>
<td>FOND-ICOinfraestructuras</td>
<td>AXIS Participaciones</td>
<td>250</td>
</tr>
<tr>
<td>Jan-13</td>
<td>DG Infra Yield</td>
<td>DG Infra</td>
<td>165</td>
</tr>
<tr>
<td>Mar-13</td>
<td>PMV Infrastructure Fund</td>
<td>ParticipatieMaatschappij Vlaanderen</td>
<td>100</td>
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<tr>
<td>Jun-13</td>
<td>CNP Assurances-Natixis Infrastructure Debt Account</td>
<td>Mirova Environnement &amp; Infrastructures</td>
<td>2,000</td>
</tr>
<tr>
<td>Oct-13</td>
<td>LAI-CEE Sidefund II</td>
<td>CEE Group</td>
<td>58</td>
</tr>
<tr>
<td>Nov-13</td>
<td>Gimv-Belfius Joint Venture</td>
<td>DG Infra</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td></td>
<td>8,995</td>
</tr>
</tbody>
</table>

Source: Preqin database, 04-04-2014

### FUNDS AND MANAGED ACCOUNTS WITH DEBT ALLOCATION CURRENTLY FUNDRAISING, MAIN FOCUS ON EUROPE

<table>
<thead>
<tr>
<th>Name of fund / managed account</th>
<th>Fund manager</th>
<th>Target size (EURm)</th>
<th>Interim close (EURm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Adiant Long Term Opportunities</td>
<td>Adiant Capital Partners</td>
<td>500</td>
<td>n.a.</td>
</tr>
<tr>
<td>2 Adiant Solar Development Partners</td>
<td>Adiant Capital Partners</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>3 Allianz UK Infrastructure Debt Fund</td>
<td>Allianz Global Investors Infrastructure Debt</td>
<td>1,197</td>
<td>n.a.</td>
</tr>
<tr>
<td>4 AMP Capital Infrastructure Debt Fund II</td>
<td>AMP Capital Investors</td>
<td>780</td>
<td>539</td>
</tr>
<tr>
<td>5 Aviva Investors European Secondary Infrastructure Credit SV</td>
<td>Aviva Investors</td>
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<td>425</td>
</tr>
<tr>
<td>6 CEE Holding</td>
<td>CEE Group</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>7 DekaBank Senior Infrastructure Debt Fund</td>
<td>DekaBank</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>8 European Infrastructure Debt Fund</td>
<td>Hastings Funds Management</td>
<td>1,000</td>
<td>n.a.</td>
</tr>
<tr>
<td>9 GCP Infrastructure Investments</td>
<td>Gravis Capital Partners</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>10 JPMorgan Infrastructure Debt Fund</td>
<td>JPMorgan - infrastructure Investments Group</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>11 LBPM European Debt Fund</td>
<td>La Banque Postale Asset Management</td>
<td>1,000</td>
<td>500</td>
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<td>12 Macquarie Debt Fund</td>
<td>Macquarie Infrastructure Debt Investment Solutions</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>13 SCOR Infrastructure Debt Fund</td>
<td>SCOR Global Investments</td>
<td>400</td>
<td>n.a.</td>
</tr>
<tr>
<td>14 Scottish Motorway Links Infrastructure Debt Separate Account</td>
<td>Allianz Global Investors Infrastructure Debt</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>15 Sequoia Euro Infrastructure Debt Fund</td>
<td>Sequoia Investment Management Company</td>
<td>1,000</td>
<td>n.a.</td>
</tr>
<tr>
<td>16 Sequoia Sterling Infrastructure Debt Fund</td>
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<td>n.a.</td>
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<tr>
<td>17 Triodos Groen Fonds</td>
<td>Triodos Investment Management</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>18 Triodos Renewables Europe Fund</td>
<td>Triodos Investment Management</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>19 Triodos Renewables UK Fund</td>
<td>Triodos Investment Management</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>7,414</td>
<td>1,464</td>
</tr>
</tbody>
</table>

Source: Preqin database, 04-04-2014
**APPENDIX III - AUSTRALIAN PROJECT FINANCE MARKET**

I. The project finance market in Australia

According to the Dealogic ProjectWare database, the Australian project finance market grew by an unprecedented 133% in 2012 to reach EUR 63.0bn from the previous all-time-record of EUR 27.0bn recorded in 2011. The 2012 exceptional values are mainly due to a spectacular volume of activity in the Oil & Gas sector (EUR 37.7bn worth of deals in the sector itself in 2012 thanks to large LNG terminal transactions). Excluding the two historical highs of 2012 and 2011, the average annual volume of project finance deals in Australia between 2000 and 2010 stood at EUR 13.6bn. In terms of number of transactions, This corresponds to 55 deals, down by 32% from 2011.

**Chart A: Australian project finance volume by sector, in EUR billion, source: ProjectWare**

Out of this overall volume primary financing represents 75% (EUR 47bn) with refinancing representing 25% (EUR 16bn). In number of deals the share of primary financing is lower at 47% with 29 deals; refinancings represent 53% (26 deals). This is in line with the long-term trend of circa 30% of financed volume coming from refinancings.

**Chart B: Refinancing volumes as % of total project finance volume per year, source: ProjectWare**

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95 Includes both debt and equity
Appendices

Chart C: Australian project finance number of transactions by sector, source: ProjectWare

Sector-wise, Oil & Gas was the largest sector in 2012 with 60% of financing volume (EUR 38bn), followed by mining with 17% (EUR 11bn). Transport represented roughly 10% (EUR 6bn). In number of deals, the mining sector was the most represented with 18 deals (33%), followed by Transport (11 deals, 20%). For primary financings volume, mining was equally in lead with 80% (EUR 38bn), followed by mining with 9% (EUR 4bn) and Waste & Water projects with 7% (EUR 3bn). The obvious major change vs 2011 is the huge volume of of Oil & Gas primary financings vs only EUR 0.1bn recorded activity in the sector in 2011.

Chart D: Australian project finance by sector (2011 and 2012), in EUR billion; Source: Deallogic ProjectWare database

Loans constitute the majority of debt financing in Australian project finance. Between 2000 and 2012 it was 85% on average, while in 2012 the share of loan debt financing was 93%. Greatest bond financing activity was recorded in 2006 with EUR 5.7bn in bonds (32% of the debt raised).
Appendices

Historically, the Australian market sees issues of short tenors, therefore refinancing occurs more frequently than in other markets such as Europe. On average, between 2000 and 2012, 38% of debt issue was used for refinancing (36% of loan issues and 53% of bond issues). In 2012 34% of debt issue was used for refinancing (33% of loan issues and 45% of bond issues).

The average tenors of issues of loans (term loans, credit facilities) have been historically at around 6 years. However over the past few years much longer average tenors have been seen, through the involvement of Japanese banks, Asian Export Credit Agencies (Japan, Korea) and and German lenders. In 2012 the long-term debt (16 year tenors) was provided in particular to the LNG projects.
II. The Infrastructure Equity Market in Australia

The Preqin Online database mentions only two Australasia focused funds the 2007 EUR 200m Macquarie Global Infrastructure Fund III and the EUR 100m New Zealand-based 2009 fund Public Infrastructure Partnership Fund managed by H.R.L Morrison & Co.

However Australian players are very important in the world of non-listed infrastructure funds. Australian based firms raised EUR20bn in infrastructure equity from 2004 to 2012. This represents 12.5% of all funds raised during that period and the third place worldwide. Only US-based managers (EUR 75bn, 47%) and UK based firms (EUR 26bn, 16%) come ahead.
Chart 1: Non-listed Equity Fund volume raised by Australian managers (in EURbn), and share of total funds raised globally, Source: Preqin

<table>
<thead>
<tr>
<th>Funds raised 2004 - 2012</th>
<th>EUR bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macquarie Infrastructure and Real Assets (MIRA)</td>
<td>16.4</td>
</tr>
<tr>
<td>Transurban Group</td>
<td>2.0</td>
</tr>
<tr>
<td>AMP Capital Investors</td>
<td>0.6</td>
</tr>
<tr>
<td>Colonial First State Global Asset Management/First State Investments</td>
<td>0.4</td>
</tr>
<tr>
<td>Hastings</td>
<td>0.3</td>
</tr>
<tr>
<td>Lend Lease Group</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total funds raised by Australian managers</strong></td>
<td><strong>20.0</strong></td>
</tr>
</tbody>
</table>

Table A: Australian Managers having raised funds between 2004 and 2012, in EURbn, Source: Preqin

Australia also has an active market of listed funds (both equity and debt) even though there has been significant market reshuffling through the financial crisis (Macquarie, Babcock & Brown).
APPENDIX IV – THE NGA INVESTMENT CASE

The economics of next generation broadband roll-out revolve by and large around cost, demand, technology and competitive dynamics. In all Member States alike, roll-out costs and commercial viability are highly correlated with population density, above all in fixed line networks. For instance, the cost of deploying an FTTH\textsuperscript{96} connection can easily vary by a factor of 4-5 between a dense urban cluster and a remote farm, which explains why the roll-out of broadband infrastructure is particularly difficult in sparsely populated areas. Figure A illustrates investment per subscriber for several variants of FTTH technologies across different population density clusters for a fictitious "Euroland" whose distribution of population across the national territory is broadly representative of European countries\textsuperscript{97}.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig_a.png}
\caption{Investment for FTTH per subscriber, by FTTH technology and cluster}
\end{figure}

Source: Hoernig et al. (2010)

Operators recover the costs of network deployment mainly through various components of fees they charge to end-users (consumers and businesses), particularly fixed monthly subscription fees, usage-based fees and possibly one-off set-up charges. This makes end users the main source of funding for broadband and NGA infrastructure in the current market regime. Funding from end user revenues is complemented by certain amounts of additional public funding at various institutional levels, e. g. from European Structural and Investment Funds (ESIF) or from schemes at Member State or regional or municipal level. These resources are typically provided in the form of grants to project promoters. Until 2011 Member States notified in aggregate some EUR 5.3 bn. in state aid for

\textsuperscript{96} Fibre-to-the-Home
\textsuperscript{97} Hoernig et al. (2010)
broadband to the Commission; in 2012 notification of some larger schemes led to a (temporary) surge in approved aid amounts to c. EUR 6.5bn\textsuperscript{98}.

With users representing an important source of funding, demand uncertainty is often the decisive factor in NGA investment decisions. More specifically, for NGA upgrades it is pivotal that the new infrastructure quickly reaches a high penetration level (i.e. that it manages to gain a large market share of end user connections in the set roll-out area) and that there is willingness-to-pay for higher speeds on the user side so that better services command a price premium. Success in terms of penetration and pricing is closely intertwined with competitive dynamics. In large parts of national territories with moderate to low population density fixed broadband networks represent a natural monopoly infrastructure so that at the infrastructure level competition takes place between a single fixed network and available mobile networks (imperfect substitutes). In more densely populated urban and sub-urban clusters cost structures may leave room for two (or occasionally more) fixed networks to compete with each other (e.g. nowadays often cable and copper/DSL) and to some extent with mobile. Furthermore, the presence of competitors at the retail level that rely on regulated wholesale access to the network infrastructure of dominant operators (see section 7.2 re sector-specific regulation) also influences commercial outcomes.

Finally, the choice between several technologies with different performance features, life-spans and cost structures and the fact that the capabilities of some technologies evolve continuously (4G mobile and recent attempts to enhance the performance of VDSL through vectoring and G.fast are a case in point) add to the complexity of the NGA business case.

In comparison to other infrastructure sectors, risks during the construction phase tend to be moderate. Construction periods for clearly defined NGA projects are often shorter than e.g. in transport, construction works involve few complex structures and the environmental impact of telecom networks is generally very light, reducing the likelihood of public opposition.

\textsuperscript{98} Note that approved aid amounts represent upper bounds for the amount of aid to be granted under given schemes; actual disbursements may be lower.
APPENDIX V – NOTE ON THE RISK SHARING MECHANISM OF THE CEF DEBT INSTRUMENT

The purpose of this Annex is to describe the merger of the financial instruments to be established under the Connecting Europe Facility (CEF) Regulation with existing financial instruments, detailing the practical issues arising from the portfolio merger and the risk-sharing mechanism.

The ex-ante assessment and in particular the present Annex, together with the conclusions of the Commission Interim Report on the pilot phase of the Project Bond Initiative (PBI) and the external evaluation by E&Y, represent the prior evaluation required in Article 14.3 of the CEF Regulation, on the basis of which the instruments may be merged.

1. BACKGROUND

1.1 CEF Regulation: relevant extracts

Recital 46: In order to optimise the use of budgetary funds allocated to the CEF, the Commission should ensure continuity of all financial instruments established under Regulation (EC) No 680/2007 of the European Parliament and of the Council and the risk-sharing instrument for project bonds established under Decision No 1639/2006/EC of the European Parliament and of the Council within their succeeding debt and equity financial instruments under this Regulation, on the basis of an ex-ante assessment, as provided for by Regulation (EU, Euratom) No 966/2012.

Article 14.3: All financial instruments established under Regulation (EC) No 680/2007 and the risk-sharing instrument for project bonds established under Decision No 1639/2006/EC may, if applicable and subject to a prior evaluation, be merged together with those under this Regulation. The merging of project bonds shall be subject to the interim report to be carried out in the second half of 2013 as defined in Regulation (EC) No 680/2007 and in Decision No 1639/2006/EC. The Project Bond Initiative shall start up progressively within a ceiling of EUR 230 000 000 during the years 2014 and 2015. The full implementation of the initiative shall be subject to independent full-scale evaluation to be carried out in 2015 as provided for in Regulation (EC) No 680/2007 and in Decision No 1639/2006/EC. In the light of that evaluation, taking into account all options, the Commission shall consider proposing appropriate regulatory changes, including legislative changes, in particular if the predicted market uptake is not satisfactory or in the event that sufficient alternative sources of long-term debt financing become available.


In light of the risk-sharing mechanism set up between the Commission and EIB, the use of the EU budget would become more effective if the first loss provisioning provided by the EU budget were shared among all projects in the three sectors covered by the PBI, […] In order to maximise the benefits from diversification, the CEF could only have a single portfolio of projects in full compliance with the CEF Regulation and the Financial Regulation on EU spending. This will facilitate the financing of projects regardless of size or timing. This same mechanism can be

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extended to the existing LGTT and PBI portfolios, thereby reaping the full benefit of economies of scale. By merging these portfolios with the CEF portfolio, a seed portfolio would be created which could reduce the relative contributions of the EU budget to new projects sooner than would otherwise be the case. This point was also confirmed by the external evaluation carried out by E&Y [final report awaited].

[...]

The CEF role could potentially be maximized if a merger of the three sector portfolios (i.e. transport, energy and broadband), as referred to in Article 14(3) of the upcoming Regulation establishing the CEF, were carried out. With a view to increasing the efficiency and leverage effect of EU budget spending, this opportunity could be used to create a shared first loss provisioning system to benefit from the inherent diversification of the three sectors wherein the pre-existing instruments could be used as a seed portfolio.

2. MAIN ELEMENTS OF THE MERGED RISK-SHARING MECHANISM

2.1 CEF Debt Instrument

The CEF Regulation stipulates that CEF financial instruments shall consist of a single equity instrument and a single debt instrument, thus clearly authorising a single multi-sector instrument for both debt and equity. This Annex refers to the CEF debt instrument. As indicated in Recital 46 of the CEF Regulation, with a view to optimise the use of the EU budget contribution allocated to CEF, the Commission intends to ensure continuity of the financial instruments established under Regulation (EC) No. 680/2007 and project bonds established under Regulation (EU) No 670/2012 under the CEF debt instrument as defined in Annex 1, Part III.1 of the CEF Regulation and in the body of the ex-ante assessment.

2.2 Shared first loss provisioning system

The Commission Interim Report on the Pilot Phase of the PBI initiative indicated that the CEF Role could be maximised by merging the three sector portfolios (i.e. transport, energy and broadband) by creating a shared first loss provisioning system to benefit from the inherent diversification of the three sectors wherein the pre-existing instruments (LGTT and PBI) could be used as a seed portfolio.

The core of the mechanism envisaged to create a shared first loss provisioning system is the establishment of one single Portfolio First-Loss Piece (PFLP) Account to which funds shall be transferred from the accounts established under current instruments (LGTT and PBI) and from separate sector Fiduciary Accounts under CEF (Sector Fiduciary Accounts).

2.3 Risk-Sharing Principle

As in the current LGTT and PBI, the risk-sharing principle foresees that the EU and the EIB will share the credit risks and associated revenues of the portfolio. The PFLP will be shared vertically between the EU and the EIB, with the EU budget contribution covering 95% of PFLP (up to the maximum limit of the potential EU Budget Contribution), while the remaining 5% will be covered by the EIB. The EU risk is capped at the level of EU budgetary commitment, while the residual risk is borne by the EIB.

2.4 Contributions from existing instruments (LGTT and PBI)
The amounts set aside under the Loan Guarantee Instrument for TEN-T (LGT) and the pilot phase of the PBI under the respective Fiduciary Accounts (NB: there are 3 Fiduciary Accounts under the PBI, corresponding to the three sectors covered by it) will be transferred at the time of signature of the CEF Delegation Agreement into the PFLP Account according to the rules set out in section 4.3.

2.5 Appropriate level of the PFLP

The level of the PFLP will be determined in a way that the residual risk borne by the EIB falls below the threshold above which the portfolio would be considered as 'Special Activity' by the EIB Credit Risk Policy Guidelines. The sections below describe the mechanism set up to define the relative contributions from the different budget lines and to maintain the PFLP Account at an appropriate level.

2.6 Management fees

In line with the CEF Regulation the management fees to be paid by the EU budget to the EIB will be capped at 5% of the Union contribution effectively used for individual operations and will be split among the different budget lines according to the mechanism described in the sections below.

2.7 Revenue sharing mechanism

The EIB receives income from beneficiaries either in the form of lump-sums, e.g. guarantee or credit enhancement fees, or in the form of interest. This income can be broadly split in administrative income (administrative fees and other types of fees, such as commitment fees), income related to EIB funding costs, modulation and risk related income.

Administrative income, EIB funding costs and modulation are directly attributed to the EIB. Risk related income will be shared between the Commission and the EIB according to the mechanism described in the sections below.

Treasury income on the Fiduciary Accounts (the Sector Fiduciary Accounts and the PFLP Account) will be attributed according to the mechanism described in the sections below.

2.8 Delegation Agreement on the CEF Debt Instrument

From a contractual point of view, there will be one single Delegation Agreement for the CEF Debt Instrument with common rules applicable across sectors and instruments. The existing LGT and PBI agreements will be terminated. If required by the relevant basic act(s) for certain instruments, specific provisions can be included in the Delegation Agreement.

The co-existence of several Delegation Agreements governing transactions benefitting from a single PFLP may increase the risk of misalignment and incoherence. On the other hand, the existence of a single Delegation Agreement should provide clear termination arrangements for single instruments, so as to avoid giving the impression of 'evergreen' instruments.

In the Delegation Agreement, it must be ensured that each DG (and/or the EA) receives from the EIB the accounts/reporting relevant to the individual DG including information on the relative share of the PFLP (see point 4.8). Separate financial statements will be prepared for the PBI (pilot phase), the LGT and the CEF until the respective instruments are terminated. Moreover, the Delegation Agreement will reflect an appropriate control and monitoring strategy catering for the multi-sectoral nature of the instrument.
In order to facilitate the process, it is expected that a "leading reporting DG" will be designated. This DG will be responsible for the global year end accounting posting as well as the coordination of the repartition of the amounts between the involved DGs. Alternatively, a system of sub-delegation between involved DGs (MOVE, ENER, CONNECT) should be envisaged.

3. SITUATION OF THE LGTT AND PBI ACCOUNTS as at 30 June 2014

3.1 LGTT : portfolio of projects, provisioning and expected revenues as at 30 June 2014

As at 30 June 2014, the LGTT portfolio consisted of 6 projects and a potential pipeline of four projects.

The LGTT Fiduciary Account, which is fed by TEN-T budget line, serves both as FLP for LGTT and to pay fees to the EIB. The amount available in the LGTT Fiduciary Account at the end of 2013 was EUR 163.2 m (EUR 155 m paid from initial budget + EUR 6.9 m paid through regularisation of revenues 2008-2012 + EUR 1.3 m of revenues 2013). Further EUR 50 m was paid in 2014 bringing the amount available in the LGTT Fiduciary Account to EUR 213.2 m.

The revenue of the LGTT is derived from the fees of the projects and the interest on treasury management. The regulation foresees that the cumulative revenue due to the Commission until 31 December 2013 can be added to the LGTT. As mentioned above, the revenues accrued as at the end of 2012 were injected in the LGTT Fiduciary Account. As of 1 January 2014 the PFLP risk and revenue approach operates for LGTT projects as well, so that the revenues of the LGTT will be shared at the end of the LGTT ramp-up period, i.e. from 1 January 2017. Following the entry into force of the revised LGTT Cooperation Agreement, the EU share of the risk related income was reduced by the amount of revenues recorded before 1 January 2014.

3.2 PBI Pilot Phase : portfolio of projects, provisioning and expected revenues as at 30 June 2014

The PBI Pilot Phase portfolio is being built up, with 2 transactions having reached financial close, one in energy and one in transport.

There are three PBI Fiduciary Accounts which are fed respectively by the TEN-T, TEN-E and ICT budget lines. The amounts available in the PBI Fiduciary Accounts serve both as FLP for the respective sector portfolios (no cross-coverage between sectors) and to pay fees to the EIB. The overall amount available in the PBI Fiduciary Accounts at the end of 2013 (less of fees to be paid to EIB) was EUR 62.8 m (EUR 46.7 m TEN-T, EUR 9.4m TEN-E, EUR 6.7m ICT). Further EUR 65.6 m are being paid to the PBI TEN-T Fiduciary Account to cover for the A11 transaction while additional EUR 450,000 will be paid from the same account to cover EIB fees. Furthermore, the ICT sub-account was credited with another EUR 13m in February 2014, bringing the overall amount available in the PBI accounts to around EUR 141 m.

The revenues from the PBI operations will effectively be shared at the end of the Ramp-Up Period. However, for reporting purposes, the EIB calculates at the end of each year an estimation of the remuneration which the Commission would have received for the reporting period, if the end of the period had coincided with the end of the Ramp-Up Phase. The amount is recorded in the annual accounts on an accrual basis (EUR 1.8 m at the end of 2013) and is not transferred to the PBI Fiduciary Account. The amount is notionally shared among the three PBI accounts pro-rata according to the contribution of the different budget lines (e.g. for 2013 EUR50m for DG Move, EUR10m for DG ENER and EUR7m for DG CNECT).
4. DETAILED DESCRIPTION OF THE MERGED RISK SHARING MECHANISM

4.1 General description of the mechanism

The risk sharing mechanism involves the creation of a single PFLP Fiduciary Account which will be fed from multiple sector/sub-instrument Fiduciary Accounts. This would allow each DG's budgetary contributions to benefit from the increased leverage associated with risk diversification within the combined portfolio. The figure below demonstrates in a simplified manner how the merger will be achieved.

As shown above, there will be separate Fiduciary Accounts receiving money from the relevant budget lines. The following budgetary transactions would then take place:

- Budgetary commitments will be made based on expected Pipeline Reports.
- Budgetary payments to the specific Fiduciary Accounts will be made on the basis of the commitment and payment estimates received from EIB. It should be noted that the amounts available in the specific Fiduciary Accounts are not yet used to cover any risk of default.
- Upon financial close of an operation by the EIB, the relevant Fiduciary Account is debited with the necessary amount, thus essentially allowing the respective budget line to purchase a share of the PFLP (i.e. analogous to an "insurance purchase" from the PFLP). The "insurance purchased" by each Fiduciary Account/budget line will allow to compare actual projects financed versus cash transfers from the Fiduciary Accounts to the PFLP, therefore abiding by the principle of specification (Art.24 of the Financial Regulation: "appropriations shall be earmarked for specific purposes by title and chapter").

- Once the funds from the individual Fiduciary Accounts are transferred to the PFLP, they become fungible within the PFLP, as does the residual loss covered by the EIB.

The larger post-merger portfolio will show improved risk characteristics in that, in principle, the relative amount of the EU Contribution to the PFLP (as measured by the necessary PFLP contribution as percentage of nominal exposure of a transaction) will reduce in time, thereby further adding to leverage. While the PFLP will cover losses in a fungible manner, the mechanism described in the sections below minimises the risk of cross-subsidisation while making it possible at any moment to track funds provided by the different Fiduciary Accounts/budget lines to the PFLP.

4.2 Calibration of the size of PFLP Account

The necessary size of PFLP Account depends on the size and the risk characteristics of the portfolio and evolves over time due to the following events:

- Project additions
- Changes in credit quality of a given set of projects over time;
- Exits of projects through credit events (default/impairments), as well as recoveries and regular exits (repayments).

Conceptually, these events can trigger changes in total PFLP size in two ways:

- entries and exits increase/decrease total nominal exposure (and/or lead to PFLP consumption in the case of losses), but typically also influence the risk characteristics;
- Changes in credit quality of existing projects can alter risk parameters of the portfolio without changing total nominal exposure. This can also trigger adjustments in provisioning needs, hence a theoretical increase or reduction of the PFLP size.

In practice, changes in nominal exposure will typically prompt instant payments to or from PFLP, whereas adjustments related to changes in risk profile will only take effect at certain intervals when the risk parameters are recalculated. In principle, different frequencies for this re-estimation are conceivable, e.g. only once at the beginning of the instrument on a forward-looking basis, at periodic intervals (for example on an annual basis or after the end of a ramp-up phase), or continuously (upon each entry and exit plus upon each material change in risk features).

In sum, the above events can result either in the need for additional contributions (up to the maximum of the EU contribution) or in "refunds" (if e.g. improved diversification permits to lower PFLP as a share of nominal exposure). For example, a significant loss on a project or on several projects would need to be accounted for and could require replenishment of PFLP by means of calls for additional capital. Equally, an event leading to a portfolio credit downgrade could mean one of the following:

- the interruption of allocations of new projects to the PFLP until the portfolio leaves the area of Special Activities, as it is the case currently under LGTT and PBI;
- additional capital contribution to reclassify the Portfolio outside the Special Activity area,
As mentioned in section 4.1, the inclusion of a new operation under the portfolio of operations covered by the PFLP will trigger a transfer from the relevant specific Fiduciary Account to the PFLP Account. Improved risk diversification that comes with a growing number of projects in the portfolio will be reflected in PFLP transfer rates (see section 4.4).

In order to deal with the event of additional capital calls for upward adjustments of PFLP which are not caused by regular entries/exits without disproportionately affecting specific Fiduciary Accounts, it is proposed that in addition to the PFLP, a "safety buffer" is established in excess of the amounts strictly necessary to classify the portfolio of operations just below the Special Activities threshold. The buffer can be tapped in the event of upward adjustments due to migrations of the portfolio risk profile as well as if there is a need to replenish the PFLP after the recognition of losses on existing operations or after an adverse migration of the risk profile has been formally established. A mechanism equivalent to establishing a "safety buffer" can also be envisaged following discussions with the EIB.

It should be noted that the existence of a buffer is inherently enshrined in the current LGTT, PBI and RSFF agreements. Indeed, all these agreements foresee that the EIB informs the relevant Steering Committees if the risk profile of the EIB residual risk exceeds 50% and 75% of the Special Activity threshold and that adequate and timely measures should be taken by the Steering Committee to avoid the reclassification of the relevant portfolio as a Special Activity and hence cause the interruption in allocations to it. In terms of Article 140.7 of the Financial Regulation, the buffer could be considered as a contractually stipulated minimum reserve to allow the smooth functioning of the instrument.

An initial buffer would be created following the transfer of funds from the current LGTT and PBI Fiduciary Accounts (see section 4.3). When merging PBI and LGTT portfolios, the amounts set aside for the different portfolios (LGTT, PBI Move, PBI ENER and PBI CNECT) would be above the threshold of provisioning needed at the time of the portfolio merger in order to classify the portfolio of operations just below the Special Activities threshold.

The buffer would have to be kept at an appropriate level in order to avoid (with a significant probability) sudden interruption of allocations to new projects by the EIB in the event of losses during the ramp-up period. The buffer would be increased in absolute terms over time with the increase in the number of operations added to the portfolio. This will be achieved by including, in the PFLP Transfer Rate (i.e. the ratio between the amount transferred to the PFLP Account upon signature and the nominal exposure of the operation signed), the necessary percentage to maintain the buffer. The detailed method to determine the PFLP Transfer Rate is presented in section 4.4.

Whereas this solution would not prevent in extreme cases the necessity to fill up the PFLP Account in order to avoid the interruption of allocations by the EIB, an appropriate calibration of the size of the buffer and of the PFLP Transfer Rates would strongly limit the likelihood of this event.

The size of the PFLP Account at time $t_n$ would then be set as follows:

- $A_n =$ Amount needed to classify the portfolio of operations at time $t_n$ just below the Special Activities threshold;

$B_n =$ Buffer at time $t_n =$ To be defined following discussions with the EIB and appropriate simulations

In order to ensure that the size of the PFLP Account is calibrated throughout the ramp-up period, the Steering Committee established under the CEF debt instrument will decide on an annual basis the
appropriate level of the PFLP Transfer Rates on the basis of a proposal of the EIB, taking into account the nominal exposure and the risk profile of the portfolio of operations covered at time $t_{n,1}$ and the size of PFLP$_{n-1}$. At the end of the ramp-up (investment) period of the instrument, a recalibration of the PFLP will be carried out. Any PFLP surplus will be released to the Commission and returned to the general budget (see also point 4.10).

The alternative option of continuous rebalancing of the PFLP Account upon every re-calculation of risk parameters was deemed inappropriate as it would require a large number of transfers and authorisations depending on the chosen rebalancing interval and would entail the risk that resources available in the specific budget lines would not be sufficient at specific points in time to cover the rebalancing needs.

4.3 Initial transfer to the PFLP Account by Fiduciary Accounts set up under existing instruments (LGTT and PBI)

As mentioned in sections 3.1 and 3.2, the amounts available in the LGTT Fiduciary Account and in the three PBI Fiduciary Accounts currently serve both as FLP for the respective sector portfolios and to pay fees to the EIB. The following operations will be carried out:

- Before signature of the Delegation Agreement, the Commission and the EIB will define the share of the amounts available in the specific Fiduciary Accounts earmarked to cover fees and those earmarked to cover the FLPs under existing LGTT and PBI.
- The amount PFLP$_0$ will be determined as foreseen in section 4.2, based on the existing portfolio of LGTT and PBI operations at the time of signature ($t_0$).
- Upon signature of the Delegation Agreement, an amount of up to PFLP$_0$ will be transferred to the PFLP Account out of the amounts earmarked to cover the FLPs under existing LGTT and PBI.
- The remaining amounts will remain in the original specific Fiduciary Accounts to cover future fees and, if appropriate, potential new operations under LGTT and the pilot phase of the PBI (until the end of the respective investment periods).
- New operations under LGTT and the Pilot Phase of PBI will be dealt with as new CEF operations, as described in the section 4.4.

4.4 Transfers to the PFLP Account by the specific Fiduciary Accounts: the PFLP Transfer Rates

The portfolio of operations covered by the PFLP Account will be increasingly diversified. The increased diversification will in turn progressively diminish provisioning needs and ensure a more efficient use of the EU budget. The existence of an initial portfolio of operations (current LGTT and PBI) is in itself a major step forward in ensuring a reasonable diversification from the outset.

Two options are envisaged: 1) a fixed PFLP Transfer Rate and 2) a Transfer Rate set yearly. In the latter case, the Delegation Agreement will define the mechanism to set the appropriate PFLP Transfer Rates until the end of 2015. For subsequent years, the PFLP Transfer Rates will be agreed by the Steering Committee on an annual basis based on a proposal from the EIB as explained in section 4.2. The rates proposed by the EIB can inter alia be the result of recalculations of the risk parameters of the portfolio or can be approximated rates. At the end of the ramp-up period the size of the PFLP will be recalibrated and surpluses or deficits will be balanced as described in section 4.2. Under normal circumstances (i.e. no major losses), the PFLP Transfer Rates are expected to decrease over the years due to increased diversification, gradually converging to a PFLP rate that can be expected for a fully developed portfolio at the end of the ramp-up phase. Hence, the benefits of the portfolio effect accrue effectively to “late arrivals”.

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During the negotiations with the EIB, it will be discussed whether it is appropriate to have one single yearly PFLP Transfer Rate irrespective of the risk profile of the underlying operations to be covered by the PFLP or a yearly set of PFLP Transfer Rates which are a function of the risk profile (measured in line with the EIB internal grading system) of the underlying operations. The first option has a clear benefit of simplicity and facilitates budgetary programming by the relevant DGs, whereas the second would be somewhat ‘fairer’ as amounts set aside under the PFLP Account would be proportional to the contribution of the individual operations to the portfolio risk.

The option of continuously adjusting the PFLP Transfer Rates on an individual operation basis to precisely fit the provisioning needs required to fill up the PFLP Account in line with the function described in section 4.2 was not retained, as in case of impairment or losses at a given point in time, the following operation would have required a disproportionate amount of funds.

4.5 Revenues and repayments

The CEF does not include specific provisions as to the treatment of revenues and repayments. Therefore, the CEF debt instruments will have to comply with article 140(6) of the Financial Regulation:

[…] Without prejudice to sector-specific rules for shared management, revenues, including dividends, capital gains, guarantee fees and interest on loans and on amounts on fiduciary accounts paid back to the Commission or fiduciary accounts opened for financial instruments and attributable to the support from the budget under a financial instrument, shall be entered in the budget after deduction of management costs and fees.

Annual repayments, including capital repayments, guarantees released, and repayments of the principal of loans, paid back to the Commission or fiduciary accounts opened for financial instruments and attributable to the support from the budget under a financial instrument, shall constitute internal assigned revenue in accordance with Article 21 and shall be used for the same financial instrument, without prejudice to paragraph 9 of this Article, for a period not exceeding the period for the commitment of appropriations plus two years, unless specified otherwise in a basic act. […]

As shown in section 4.1, there will be seven specific sector Fiduciary Accounts and one PFLP Account.

As regards specific Fiduciary Accounts, the only possible type of revenues is treasury income as no risk-related income, dividends or capital gains are attributable to amounts available in such accounts.

Treasury income generated in year \( t_{n-1} \) will be used to cover management costs and fees attributable to the specific Fiduciary Account/budget line accrued in year \( t_{n-1} \) or due in year \( t_n \). In case of excess income, this will be returned to the general budget on an annual basis.

Repayments will typically occur in the form of portions of the PFLP which are no longer needed for risk provisioning. These accrue at the level of the PFLP Account and are not attributable to the specific Fiduciary Accounts.

As regards the PFLP Account, revenues will essentially consist of treasury income and risk-related income\(^\text{100}\).

\(^{100}\) Dividends and capital gains are not possible in principle, unless following debt restructuring of an operation, the EIB becomes equity owner.
Treasurer income will be apportioned to the different budget lines according to the share owned by the respective budget line of the PFLP Account. Treasury income deriving from PFLP Account will be used to cover management costs and fees as above, if the treasury income deriving from specific Fiduciary Accounts was not sufficient to cover all management costs and fees attributable to the specific Fiduciary Account/budget line accrued in year $t_{n-1}$ or due in year $t_n$. Potential excess income will be returned to the general budget on an annual basis.

Under LGTT and PBI, risk related income can only be shared between the EU (and within the budget to the specific budget lines) and the EIB once the portfolio of operations has been established after the end of the ramp-up (investment) period. Under RSFF, a mechanism is established whereby risk related income is distributed during the investment phase. The different treatment is due to the fact that RSFF has a more granular portfolio and risk related income is embedded in interest spread charged to borrowers and received on a periodic basis whereas under LGTT and PBI risk related income takes essentially the form of lump-sums received by the EIB at the time of signature of operations (e.g. guarantee fees)\(^{101}\).

The precise method of revenue sharing will be defined in the Delegation Agreement with the EIB. In case a mechanism similar to LGTT/PBI is agreed, the part of the risk related income attributable to the EU budget will be returned to the general budget after the end of the ramp-up/investment period. During the investment period, the risk related income will be recognised and booked on an accrual basis and attributed to the different budget lines in line with their share of ownership of the PFLP Account. If a mechanism similar to RSFF is agreed, risk related income can be directly attributed to the specific budget lines in line with their share of ownership of the PFLP Account. In this case, the amounts will be transferred back to the specific Fiduciary Accounts and then returned to the general budget after possible deduction of residual management costs and fees which were not covered by treasury income. In all the above cases, the cumulated risk related income will be remunerated at the average interest rate earned on the balance of the PFLP Account during the same period.

Under the CEF Debt Instrument, repayments will typically take the form of recoveries from impaired amounts paid out from the PFLP Account to the EIB. These recoveries will return to the PFLP Account and will remain therein to ensure risk coverage (regularisation transactions will be carried out as appropriate). Their origin is recognised and can be attributed to specific budget lines for reporting purposes. Such recognition will take place in line with the ‘virtual’ procedure foreseen in the Template Delegation Agreement, under which the reuse of such resources must be confirmed by the Commission.

Towards the end of the LGTT, the pilot phase of the PBI and CEF debt instrument, amounts on the PFLP Account are progressively released in line with the termination of the underlying operations covered by the PFLP Account. This progressive release will occur several years after the end of the period of commitment of appropriations for the specific instruments. Hence, the amounts released under the PFLP Account will be returned to the general budget.

4.6 Losses and impairments

\(^{101}\) In the Pilot Phase of PBI, projects can be credit enhanced on a funded basis, in which case interest is paid over the lifetime of the project, unlike in the unfunded basis where only the PBCE guarantee fee is paid upfront (before the guarantee is drawn). However, no funded PBI operations have been closed so far.
Losses and impairments can only occur at the level of the PFLP Account and not on the specific Fiduciary Accounts.

As for LGTT, PBI and RSFF, any impairment will first be covered by the PFLP Account and only if the PFLP Account is already fully consumed or the remaining amount in the PFLP Account is insufficient to cover such impairment, the EIB will be called upon to cover the remaining balance after exhaustion of the PFLP Account (residual risk tranche).

In case of a reduction in impairments or recoveries (see section 4.5), the EIB will immediately refund the PFLP Account after the residual risk tranche has been fully replenished.

4.7 Ownership of the PFLP Account

There will be continuous changes in the nominal exposure and risk profile of the portfolio of operations under the LGTT, pilot phase of the PBI and CEF debt instruments, which are supported by the PFLP Account. In particular, the change is due to (i) the addition of new operations, (ii) potential rating migrations, and (iii) impairments/effective losses.

The PFLP Account is also subject to continuous changes due to:

(a) Transfer of funds from specific Fiduciary Accounts to the PFLP Account for 'insurance purchase';
(b) Transfer of funds from the PFLP Account to the EIB to cover losses and impairments;
(c) Transfer of funds from EIB to the PFLP Account in case of recoveries or reduction of impairments;
(d) Treasury income accrued on the balance of the PFLP Account.

In order to minimise the risk of cross-subsidisation between budget lines through the use of a shared PFLP Account, while preserving the benefit of a single first loss piece, it is proposed that the share of ownership of each budget line of the PFLP Account is determined as follows:

Share of budget line m, at time \( t_n \):

\[
SBL_m = \frac{BL_m}{\sum_m BL_m} ,
\]

where

- \( BL_m \) are the cumulated amounts transferred to the PFLP Account from budget line m (and likewise but in 'minus' any potential excess income being returned to the general budget), at time \( t_n \);
- \( a_m \) are the cumulated amounts transferred to the EIB from the PFLP Account at time \( t_n \) due to losses/impairment occurred under operations supported by the budget line m;
- \( b_m \) are the cumulated amounts transferred to the PFLP Account from the EIB at time \( t_n \) due to recoveries/reduction of impairments under operations supported by the budget line m.

As detailed above, the share of ownership \( SBL_m \) will be used to determine the share of treasury income and risk related revenues attributable to a given budget line m, at a given time \( t_n \). Moreover, it will be used for reporting and accounting purposes (see section below).

4.8 Reporting on the use of the EU Contribution by instrument and budget line

The Commission-EIB Delegation Agreement will include detailed reporting requirements allowing to monitor the performance of the LGTT, PBI and CEF debt instrument on a global and on an
individual (per budget line, per specific Fiduciary Account and/or per instrument) basis. Appropriate performance indicators will be set to measure the overall and relative performance of operations supported by the different budget lines. For example, the instrument leverage (IL) can be calculated as follows:

\[ IL = \frac{\sum \text{Total financing of operations supported by instrument}}{\text{EU Budget for instrument}} \]

Similar calculations can be done for other performance indicators (in particular the SBL<sub>m</sub>) or for other reporting purposes both at global and individual instrument level.

As regards the annual accounts, a reporting system similar to the one currently available under the pilot phase of the PBI will be established. This allows complying with Commission annual reporting requirements, where account figures per DG (or EA) need to be provided for the annual consolidated EU accounts.

This overall governance and reporting framework will allow with Commission annual reporting requirements, where account figures per DG need to be provided for the annual consolidated EU accounts as well for the DG's Annual activity Report.

4.9 Management fees and costs

This point will be negotiated with the EIB at a later stage. However, the main principles could be as follows:

- A significant part of the management fees and costs for LGTT and the pilot phase of the PBI have already been paid, notably those aimed at covering administrative costs. Only administrative / incentive fees on new operations and treasury management fees are due. Under these circumstances, a sensible approach could be not to alter the current structure of fees for operations carried out under LGTT and the pilot phase of the PBI.
- Fees for the CEF debt instruments will be defined in line with the CEF Regulation and the FAFA.
- Fees should be paid firstly out of the treasury income generated in the specific Fiduciary Accounts and the treasury income and revenues generated in the PFLP Account (if necessary, transferred before to the specific Fiduciary Accounts). If these amounts are not sufficient to cover the fees in a given year, the rest should be paid out of the specific Fiduciary Accounts.

4.10 Termination of instruments

As a general point, financial instruments must remain in force until the last operations expire or the amounts lent are fully repaid.

The operations under the pilot phase of the PBI and the ones expected under the CEF debt instrument will have a very long duration spanning over 20 years or more. Therefore, these instruments can be closed not earlier than 2035. At that time the PFLP Account will have started to be progressively depleted and funds transferred to the general budget in line with the progressive decrease of the portfolio covered. Under normal circumstances, there will be no material difference in the time of termination of those instruments which would cater for a special treatment.

As regards LGTT, the situation is different. LGTT covers the traffic risks arising in the first seven years of project lifetime (unless the guarantee is drawn down). It follows that when LGTT projects
reach their maturity and all EIB guarantees expire, it would be possible to close the scheme. The share of the PFLP Account owned by LGTT should in principle return to the general budget upon termination of the LGTT instrument. However, this would create a shortfall in the PFLP Account. Therefore, two options will be discussed with the EIB: (i) the share of the PFLP Account owned by LGTT remains in the PFLP Account alongside the shares owned by the other budget lines until the reimbursement of the last CEF deal; (ii) given that the termination of the LGTT scheme is expected to take place towards the end of the CEF ramp-up or investment period, the share of the PFLP Account owned by LGTT will be returned to the general budget as part of the buffer returned after the end of the CEF investment period, where possible (see section 4.2).

5. THE APPLICATION OF THE MERGED RISK SHARING MECHANISM TO FUNDS MADE AVAILABLE TO THE CEF DEBT INSTRUMENT BY STRUCTURAL FUNDS

The CEF Regulation stipulates that EUR 11.3 bn will be transferred from the Cohesion Fund to the CEF to be spent in line with the CEF Regulation for transport projects in the Member States eligible for the Cohesion Fund. As of 1 January 2017, part of these resources could also be allocated to CEF financial instruments.

Moreover, managing authorities may decide to allocate a share of their European Structural and Investment Funds (ESIF) to centrally-managed EU level financial instruments such as the CEF debt instrument.

Against this backdrop, the detailed mechanism described in section 4 would be applied mutatis mutandis to funds originating from the above structural fund allocations. In order for the scheme to work efficiently, the fundamental requirement is that the PFLP Account would be able to also cover operations supported by ESIF. Vice versa, a shared PFLP implies that PFLP contributions made from ESIF can be called upon to absorb losses on any of the operations in the portfolio. Specific Fiduciary Accounts could be created to receive allocations from managing authorities. Funds will be transferred from these specific Fiduciary Accounts to the PFLP Account upon signature of relevant operations and the relevant managing authorities would then acquire a share of the PFLP Account as it is the case from centrally managed budget lines.

A detailed assessment of how to deal with ESIF allocations in the merged risk-sharing mechanism would have to be carried out in cooperation between the relevant Commission services (BUDG, LS, REGIO, ECFIN, MOVE, ENER, CNECT).