

# Ad-hoc Audit of the pilot phase of the Europe 2020 Project Bond Initiative

## Final Report

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## **Executive Summary**

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## Executive summary

### PBI has been set to create a capital market appetite and contribute to overcome the drop in infrastructure investments

The availability of well-functioning infrastructure networks is an important element of sustainable economic growth. To underpin the European Union's '2020 objectives', investments of about €1.5 to €2 trillion will be needed over the next decade in the transport, energy and ICT sectors.

Following the 2008 financial turmoil, investment levels in infrastructure projects dropped as prudential bank regulation was strengthened at the same time as financing for investment was curbed and as monoline insurers became significantly less active. Deterioration in the fiscal and budgetary position impacted funding capacities of many Member States drastically. In response to a growing financing gap, the EU developed financial instruments in order to facilitate investments in infrastructure including a.o. the Marguerite Fund (equity) and the pilot-phase of the Project Bond Initiative (PBI).

In 2012, the pilot phase of Project Bond Initiative (PBI) was launched by the EU and the EIB to test how such an instrument could (i) help finance priority projects of EU added value and (ii) provide access to capital markets as an additional source to finance infrastructure projects in the areas of Trans-European Transport networks (TEN-T), Trans-European Energy Networks (TEN-E), ICT and broadband. The possible full deployment of the PBI after 2015 shall take into account the experience gained within the pilot phase.

The EC allocated a budget remaining from the 2007-2013 Multiannual Financial Framework of €230 million to support the testing phase of the PBI (2012-2015) of which €200 million for the TEN-T sector, €10 million for the TEN-E sector and €20 million for the ICT sector.

### PBI acts as a catalyst for private sector financing and can be deployed under two schemes: the funded versus the unfunded PBCE

The initiative's core concept is to attract and facilitate additional private sector finance by the enhancement of the senior debt rating for the bonds issued by project companies. This was further supported by the indication that the development of a debt capital market requires a large portion of projects with a solid investment grade rating i.e. a minimum rating of A-.

When a project is found eligible and included in the Project Bond Initiative, then EIB provides a subordinated tranche to enhance the project's senior debt. The subordinated tranche is provided as the *Project Bond Credit Enhancement Facility (PBCE)* under (i) a subordinated loan (i.e. the funded PBCE) or under (ii) a letter of credit (i.e. the unfunded PBCE), which can be drawn in case of cash shortfall within a set of circumstances. The mechanism results in a credit enhancement of the rating of the senior bonds because of the decrease in default risk and the improvement in recoveries of senior debt. In contrast to the unfunded PBCE, the funded PBCE does not represent an extra source of funds during construction in case of a shortfall as it is only used to cover eligible costs in the project's base case.

### Seven projects have been supported during the pilot phase

As of 31 July 2015, 7 projects have been supported (out of which 5 projects with EU budget support) for a total PBCE amount issued by the EIB of €612 million which has resulted in an issuance of over €3.7 billion in bonds.<sup>1</sup> These projects are:

- ▶ The Castor Underground Gas Storage project to provide a gas storage facility in Spain (total bond issuance of €1,400 million), signed July 2013;<sup>2</sup>
- ▶ The Greater Gabbard offshore transmission owners (OFTO) Round 1 project in the United Kingdom (total bond issuance of GBP 305.1 million), signed November 2013;
- ▶ The A11 PPP highway project to facilitate access to the port of Zeebrugge in Belgium (total bond issuance of €577.9 million), signed March 2014;

<sup>1</sup> Another project, the sale of the West of Duddon Sands OFTO project reached financial close in August 2015 representing a PBCE size of GBP 38 million and a selling price of GBP 269 million; however this project was not included in the scope of this study.

<sup>2</sup> Following seismic activity, operation of the Castor project was suspended in September 2013. The project company ESCAL, as concessionaire of the Castor project, requested the consent of the EIB as PBCE guarantee provider, to relinquish their concession. Relinquishment of the concession was presented to the Spanish Ministry of Industry, Energy and Tourism in July 2014. Acceptance of this relinquishment was approved by Royal Decree in October 2014. Senior Bonds have been fully repaid. The €200 million letter of guarantee (PBCE) has been discharged accordingly. For more information on the Castor project, please refer to Appendix C.

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- ▶ The Axione Infrastructure S.A.S's project to deliver broadband network services in rural France (total bond issuance of €189.1 million), signed July 2014;
- ▶ The A7 PPP project to widen the A7 motorway Bordesholm-Hamburg in Germany (total bond issuance of €429.1 million), signed August 2014;
- ▶ The OFTO Round 2A – Gwynt y Mor (GyM) in the United kingdom (total bond issuance of GBP 339.2 million), signed February 2015;
- ▶ The Port of Calais in France (total bond issuance of €504 million), signed July 2015.

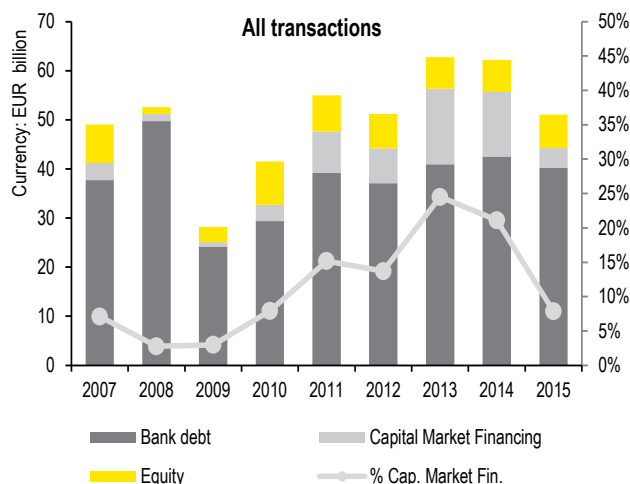
All projects were signed with the unfunded PBCE mechanism.

The initiative has been rolled-out within a European competitive environment

The European project finance market has seen substantial fluctuations since 2007, particularly the greenfield market in Europe. In contrast to 2012, when the greenfield market significantly declined, the market strongly recovered in 2013 and 2014. The graphs below illustrate these findings.<sup>3</sup>

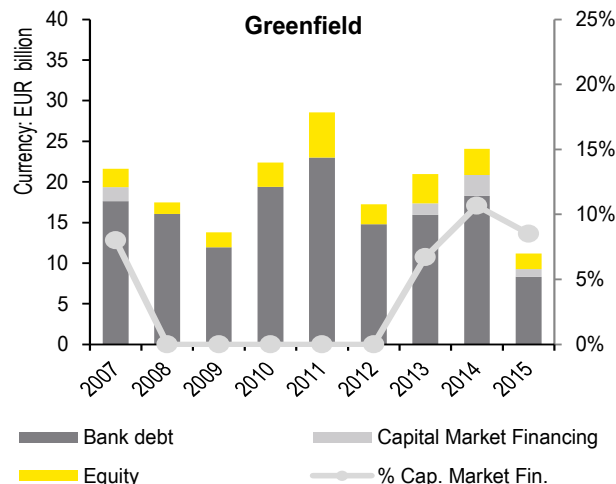
### All transactions

Source: Infradeals



### Greenfield transactions

Source: Infradeals



As from 2010, the withdrawal of banks in infrastructure projects created a clear shift in the financing of long-term assets away from banks and towards a mix of banks and institutional investors. Today, the climate has reversed again to a certain degree. Banks returning to fund projects has again resulted in fierce competition amongst senior debt providers. So far this has resulted in lower margins, increased tenors and for sponsors less restrictive terms and covenants. As a result, some debt providers are targeting more risky asset classes and less developed infrastructure or PPP markets. Even if risk remains a key factor in investment decisions (especially when moving to cover certain risks – e.g. greenfield and traffic - in certain sectors, geographies and levels of rating), some respondents indicated that they currently tend to prefer lower investment grade projects without a credit enhancement in order to protect their yield.

<sup>3</sup> The dataset includes European countries except for Turkey and Russia and the following sectors: environment, power, renewables, social infrastructure, telecommunications and transport. In 2015, statistics are reported until June.

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### Scope of the ad-hoc audit

In view of EU Regulation N°670/2012 the PBI requires a full scale independent evaluation of the PBI pilot phase to be concluded in 2015 in order to:

- ▶ **Assess the effectiveness** i.e. the extent to which the PBI pilot phase has achieved its objectives, i.e. to help finance priority projects of EU added value and to contribute to the development of debt capital market financing of infrastructure projects.
- ▶ **Assess the efficiency** of Union spending i.e. the extent to which the EU contribution allocated to the PBI pilot phase was commensurate with the outputs achieved.
- ▶ **Assess the relevance** i.e. the extent to which the PBI pilot phase proved relevant to address the market needs for the financing of priority projects in transport, energy and ICT, and contributed to the development of debt capital market financing of infrastructure projects.
- ▶ **Assess the value added and additionality**, derived from a comparison with other EU or Member States' instruments and other existing forms of long-term debt financing.
- ▶ **Draw lessons** from the implementation of this financial instrument since its establishment until the time of the evaluation.

EY conducted this ad-hoc audit on the basis of stakeholder interviews and desk research.

The conclusions of this evaluation will enable the Commission to consider proposing appropriate regulatory changes, if deemed necessary, in view of the full implementation of the initiative.

**The main objective of the Pilot, i.e. developing capital markets has been achieved. All projects were eligible and one TEN-T core network project under the new regime and one TEN-E priority project under the old regime have been financed**

The PBI pilot phase was set up with the following objectives:

- ▶ Contribute to the development of capital markets as an additional source to finance infrastructure projects in the areas of Trans-European Transport networks (TEN-T), Trans-European Energy Networks (TEN-E), ICT and broadband; and
- ▶ Help finance priority projects with a clear EU added value.

The pilot phase implementation allowed for delivering on the first policy objective in the form of exploration of a new financial instrument. The product's ability to achieve the envisaged credit enhancement, establish product documentation and introduce the product to market participants was tested.

The cooperation agreement signed by the EC and the EIB define the eligibility criteria to obtain PBI support which include amongst others, the obligation to be either an ICT and Broadband Project, a TEN-E or a TEN-T Project.

Beside this, shortly after the launch of the PBI pilot phase, the EU adopted new guidelines for the TEN-T and TEN-E policies. For TEN-T, the concept of priority projects has been replaced by 'core network' projects. The revision also entailed a revised list of priority and core network projects for TEN-E and TEN-T respectively. For the ICT and broadband networks, priority projects were not defined at the time of the Pilot.

During the Pilot, all projects achieved were eligible and in line with the related policy. For TEN-T, the Port of Calais may be considered as belonging to the core network under the new guidelines, for TEN-E Greater Gabbard was a priority project under the old regime.

While the cooperation agreement allowed the use of PBCE on refinancing of projects, this was less effective from an immediate TEN policy perspective which focuses on realising new infrastructure or upgrading the existing one.

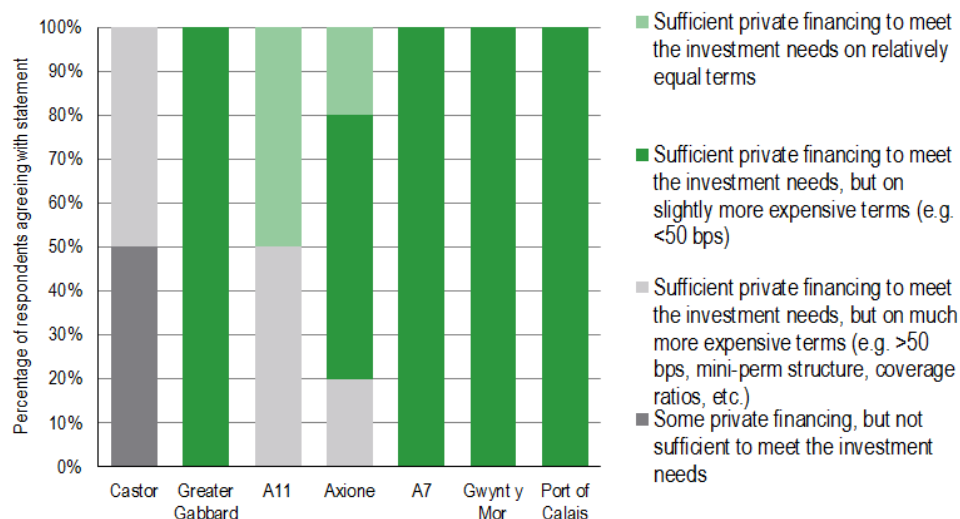
Concerning PBI's contribution in mobilising additional volume from the debt capital markets, it is difficult to fully isolate with objective data the effect of the initiative from (i) the impact of the low interest rate environment and absence of attractive investment alternatives for institutional investors (e.g. government and corporate bonds) and (ii) the EIB involvement. Our interviews with various stakeholders (cf. graph below) revealed that PBCE was crucial to obtain debt financing for Castor. Axione, probably the A11 and to a lesser extent Greater Gabbard required PBCE to obtain capital market financing, but could have been financed with bank debt although at less favourable terms. For the other projects, bank financing was available and credit enhancement was not critical for some of the bond investors but was selected by the Sponsor/Procurement Authority as the most competitive solution. The Port

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of Calais is an exception because it would have been able to attract capital market debt without the enhancement but was not able to attract bank financing.

### Respondents' feedback with respect to expected private finance support without PBCE

Source: EY analysis



Bond purchaser	1			1			1	3
Equity investor			1	1	2			4
Other	1	2	1	3	1	1	1	10
<b>Total</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>17</b>

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Within the capital market, PBI made a very important contribution in raising awareness and in encouraging institutional investors to look into infrastructure assets and reassess their business models. The initiative pioneered the use of bond financing in different sectors and geographical areas. It encouraged debt capital market financing with public bond issues for the OFTO's and Castor and private placements for the greenfield projects in the transport sector. It shows that PBI can support different types of structuring and attracts different types of investors.

Today, the private placement market for infrastructure project finance is dominated by a select group of institutional investors that account for a large proportion of recent deals. This feature of the market comes from the high level of sophistication that is needed from investors in this space. With the support of the PBCE catalysing further transaction activity, the know-how in the market may spread and the number of actors could increase.

### The EU contribution met expected leverage and contributed to the development of capital markets in the areas of TEN-T and TEN-E projects

The EC allocated a budget of €230 million to support the pilot phase of the PBI. At the establishment of the initiative, the EU expected leverage effect was set between 15 and 20 and was therefore expected to support project costs for a total amount between €3.5 and €4.6 billion.

As of 31 July 2015, seven transactions have been closed for a total project cost amount of €5,252 million. The total PBCE enhancement amounted to €612 million and the EU budget of €230 million has been deployed in full: €200 million from the TEN-T budget, €20 million from the ICT budget and €10 million under the TEN-E budget.

On the closed transactions, five transactions were signed with EU budgetary support for a total project cost amount of €2,970 million. On top of these transactions, two transactions, i.e. the N25 New Ross Bypass and the Passante di Mestre, are expected to be signed with EU budgetary support for a total project cost amount of €1,300 million. Therefore, for the projects supported with EU budget, the total project costs are expected to amount to €4,270

<sup>4</sup> 17 out of 26 interviewees expressed an opinion.

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million. The resulting expected multiplier effect (computed as the ratio between the total projects costs divided by the aggregate amount of the EU contribution) is 18.6 and is thus in line with the expectations.

Not included in the above leverage computation are projects which were carried at EIB own risk, i.e. the Castor Gas storage and Gwynt y Mor projects. On top of these two transactions, the project West of Duddon Sands was also signed at EIB own risk (in August 2015).

The results of our analyses suggest that EU contribution was sufficient to contribute to the development of capital markets as an additional source to finance infrastructure projects in the areas of TEN-T and TEN-E projects.

For the ICT market, PBI successfully highlighted capital markets as an alternative source of finance through the Pilot Axione transaction. Nevertheless, as of today, there has not yet been any project bond (with or without credit enhancement) in the sector post Axione. This is mainly due to the fact that ICT project financed deals have not been very common overall (neither with debt financing nor with bond financing).

The achievement of priority and core network projects is challenging as they are complex by nature. For TEN-E, the amount allocated (i.e. €10 million) was limited and totally used for Greater Gabbard and did not therefore allow to contribute capital for other energy projects. EIB conducted the other TEN-E projects at its own risk.

The upstream work of preparation of the PBI pilot projects with Member State Administrations and project promoters and the negotiations leading to the establishment of the PBI pipeline and final closed transactions have brought significant added value in terms of the experience gained by all actors involved. The PBI pilot has covered a start-up period and, after three years of operation, it is considered as an alternative option for project finance, with strengths and weaknesses that are well known by stakeholders in capital markets.

The number of projects that will be supported by the end of the Pilot is therefore in line with the targets set i.e. 5 to 10 transactions.

**While PBCE offers significant benefits as compared to other risk sharing facilities, competitiveness of the resulting bonds with alternative financing is being challenged under the current market conditions**

According to stakeholders, project bonds supported by PBCE proved significantly more competitive than bank financing on Castor and the A7 and marginally on Axione and Port of Calais. For the OFTO's there is no clear-cut comparison since PBI was the only financing option considered although pricing was lower than previous OFTO transactions. On the A11 consortia had to submit a bank and a PBCE bond solution. The PBCE bond solution was selected when deferred drawdowns were introduced and PBCE pricing was reduced. We cannot assess how much of the competitiveness of PBI was derived from the PBCE arrangement fee pricing and how much competitiveness was increased by reduced margins on the bonds following the credit enhancement. However, in general, decisions on financing alternatives are based on NPV terms.

The PBCE solution prevailed on the 7 beneficiary projects, but not on all projects where it has been tested. Other projects that did not use PBCE chose other financing solutions primarily because it was not competitive in the tender or not desired by bond investors in case of a refinancing.

In the current economic environment, due to lower margins the differences in margin pricing between adjacent credit rating classes are decreasing. As a result a credit uplift with PBCE may result in lower pricing advantages compared to bonds without enhancement. This could evolve in the future when interest rates will rise again.

When asked about their satisfaction with PBCE's structure and characteristics the majority of the stakeholders rate the instrument positive to very positive and only a small portion negative. The graph below shows that the items mainly valued by stakeholders are the credit enhancement feature and the ticket size, whereas the majority were neutral on the conditions precedent. In addition, some stakeholders mentioned that the product is more complex as compared to other instruments (e.g. bank loans). The complexity arises especially in the intercreditor arrangements and drawing mechanism. Some sponsors prefer EIB's senior loans when in terms of NPV the solution is close to a PBCE enhanced bond solution because of lower transaction risk, refinancing potential and the possibility to avoid the automatic drawing mechanism (rebalancing). In comparison with LGTT, PBI has a broader applicability and was applied more often than the LGTT during the first 3 years (7 projects for PBI<sup>5</sup> versus 5 for LGTT).

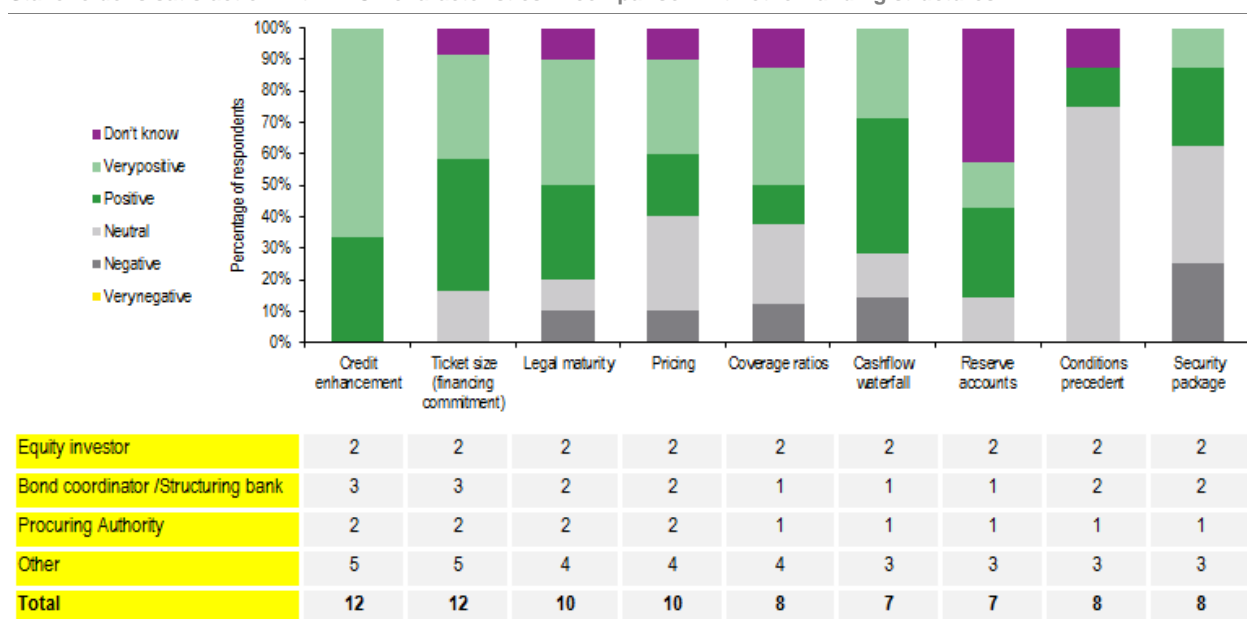
<sup>5</sup> 8 projects if the West of Duddon Sands project is included which is closed in August 2015

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As compared to the other risk-sharing facilities, interviewees outlined the following benefits of PBI: the long-term sustainability and supranational aspect of the product due to EU and/or EIB support, the yield protection resulting from a partial guarantee (versus a complete cover), for sponsors the visibility and accessibility of the investors involved, the size of the projects which can be covered and the cheaper pricing of the instruments.

Compared to other risk sharing facilities (e.g. LGTT, PEBBLE and monoline wraps) PBCE is currently considered to be more attractive and competitive. But on one recent project, it has not been able to offer a more competitive financing solution than a bank solution.

Stakeholder's satisfaction with PBCE characteristics in comparison with other funding structures



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### The design features of the PBCE addressed particularly well the needs of bond investors for greenfield

The overall structural design of the instrument served the needs of bond investors for greenfield projects particularly well. The protection for pre-completion cash shortfalls mitigates construction risk, one of the foremost reasons why institutional investors did not want to enter the infrastructure market. The PBI covers up to 20% of the senior debt. Given the relatively high recovery rate on project finance operations, the 20% recovery from the PBI reduces significantly the Expected Loss and corresponds to the level of guarantee required.

The overall opinion of interviewees with respect to the design is that PBCE is well structured. When asked to cite other forms of credit enhancement that could better respond to market needs, none of the interviewees responded with better current alternatives.

In order to make the PBI solution more attractive, several options have been identified including (i) reconsidering the added value of the rebalancing mechanism and its impact on the attractiveness of PBCE for equity; (ii) increasing the size threshold for riskier transactions; (iii) deferring the timing of the payment of PBCE letter of credit fees; and (iv) extending the scope of the applicability of PBI by making it eligible for bank debt.

### The instrument credibility increased due to the EU involvement on policy and marketing but more importantly due to the EIB involvement in the implementation

The EU involvement was appreciated for initiating and campaigning PBI prior to the launch of the projects. During the implementation of the projects, the EU contribution was less perceived by the market as they predominantly observed the involvement of EIB. The risk sharing loss mechanism between the EU and EIB contributed little to the PBCE's credibility as few private sector respondents were aware of the sharing mechanism. For them the EIB involvement was sufficient to obtain adequate credibility given the bank's AAA rating and due diligence capabilities.

<sup>6</sup> 12 out of 26 interviewees expressed an opinion.



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### Stakeholders reported elements where the EU involvement adds value for PBI

The EU contribution in the risk-sharing mechanism has been essential to enable EIB to implement the initiative. Respondents reported that the EU involvement allows the initiative to target riskier, larger transactions and to widen the investor base.

### The additionality of the instrument needs to be assessed from a long term perspective

PBCE offered distinctive advantages as compared to the other risk sharing facilities proposed by the private sector (i.e. PEBBLE and the monoline insurers) and the other forms of credit enhancement or insurance (i.e. market funded subordinated debt and the EIB unfunded guarantee).

As compared to the other financial instruments launched by EU or MS (i.e. LGTT, the UK Guarantee Scheme and the Marguerite fund), PBI seems to be additional to a large extent. It is the sole EU financial instrument that specifically addresses, simultaneously, (i) the enhancement of project bonds for (ii) greenfield infrastructure projects; (iii) in the whole EU zone and (iv) for the TEN-T, TEN-E and ICT/ broadband sector. However, the PBI might overlap with LGTT on TEN-T projects entailing traffic risk and when bank and bond financing are both viable options.

The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment. Looking back at the PBI pilot phase the instrument proved additional as it was necessary to develop debt capital markets funding for a new infrastructure project bond asset class. Although on some projects, there were questions raised by investors whether the project bond did not replace potential private financing. Looking forward, given the characteristics of the investment objectives of the EU under CEF and EFSI we expect that PBI will prove more additional (i.e. will add to the existing market alternatives) in the future as there may be more projects that have less alternative sources of financing.

### Conclusions and recommendations

#### Summary of findings

- ▶ The PBI was useful in facilitating the development of the capital market financing of infrastructure. All projects achieved were eligible. For TEN-T, the Port of Calais may be considered as belonging to the core network under the new guidelines. For TEN-E, Greater Gabbard was a priority project under the old regime (effectiveness)
- ▶ The EU contribution was proportionate with the number of projects supported and the achieved /expected leverage effect (efficiency)
- ▶ PBI responded to the market needs at the time of its inception and was relevant in terms of achievement of policy objectives on certain projects. In the future, PBCE should be targeted towards specific projects (i.e. with more risk for the investors) to remain relevant (relevance)
- ▶ The PBI instrument demonstrated EU value-added as it allows the initiative to target riskier, larger transactions and to widen the investor base (EU added-value)
- ▶ PBI provided additionality over existing risk-sharing schemes both at EU and national level. The PBI was additional to alternative sources of financing on certain projects (additionality)

At the time of the product conception, access to long-term finance and public funding was not readily available and the debt capital market for infrastructure projects was not sufficiently developed.

The Pilot supported seven eligible projects in three sectors and five Member States which includes one core network project in TEN-T under the new regulation and one TEN-E priority project under the old regulation. The Pilot has been successful in achieving its objective of development of the debt capital market financing of infrastructure projects.

However, during the PBI pilot implementation, the infrastructure financing market witnessed significant changes. Noticeable developments include a growing appetite of some institutional investors for infrastructure assets coupled with the resurgence of bank financing and a shift of investors' focus from risk protection towards return concerns. As a result, these recent years, the market experienced significant competition. Therefore, we are of the opinion that the initiative was particularly highly relevant at its inception. During the Pilot, due to changes in the macro-economic environment the market's need for the instrument compared to the need at PBCE's inception reduced. This made the PBI less relevant for some of the projects. In the future to remain highly relevant, PBCE should be targeted even

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more towards specific types of projects (i.e. projects located in geographical areas with market failure and/or projects with significant risk).

The risk-sharing arrangement between the EC and the EIB, as well as the EU contribution, has been crucial to develop the initiative, to allow EIB to target riskier, larger transactions and to widen the investor base. The outputs achieved were in line with the targets and objectives.

PBI proved to be additional to the other risk sharing facilities and to the other forms of credit enhancement or insurance. However, we noted that cyclical market developments, but also professional development of investors in the infrastructure sector, have led to a change in the market needs which indicate that, while the product is well designed, it should be continuously targeted towards specific areas in order to further improve its relevance and additionality in line with market movements.

Taking into account stakeholders' opinions and the EU 2020 objectives, we esteem there is a clear necessity to continue the PBCE solution from EU and EIB in the future.

We developed a set of recommendations which we believe will help increase the instrument's effectiveness, efficiency, relevance and additionality and the EU added value while better achieving the EU infrastructure targets (i.e. reaching investments of about €1.5 to €2 trillion over the next decade in the targeted sectors):

- ▶ In order to increase effectiveness, we recommend to increase focus on the projects with the highest EU added value which lack financing and to further develop the debt capital market financing for infrastructure projects (reducing the potential concentration risk, extending the scope and targeting the riskier projects).
- ▶ To improve the efficiency, we recommend further knowledge build-up on PBI throughout EIB centrally and regionally so that the PBCE product can be applied by the Bank, where appropriate. Moreover, the transaction delivery within the EIB by a specialist team should be maintained in order to leverage expertise gained. Furthermore, specific financing and non-financing solutions replying to market needs for the TEN-E and ICT sectors should be developed (e.g. bundling to increase the project size).
- ▶ In view of the higher relevance of the PBI, current market needs should be addressed in a more appropriate way and the design of the PBCE should be made more attractive. In particular, credit enhancement seems to be more needed on certain projects i.e. projects located in Southern and Eastern Europe and projects involving substantial risk. Another area to improve the product's relevance according to stakeholders interviewed is to enhance PBI's design (e.g. a less stringent rebalancing mechanism and introduction of phased payments of the Letter of Credit Fee).
- ▶ The EU added value can be maximised in focusing on sub-investment grade projects, renewable energy projects, extending further a higher PBI risk coverage, in making it eligible for bank debt and in eliminating barriers for a stable European project pipeline (e.g. improving the regulation framework for infrastructure). To maximise additionality, we suggest to continue fostering project consultations between sponsors and procuring authorities with the private debt sector before envisaging the inclusion of PBCE for any individual project. Besides this, EIB could strengthen the measures addressing potential internal competition between its senior loans and the PBCE solution.

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## Introduction

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1. Context of the initiative
2. A short introduction to PBI and PBCE
3. Objectives and scope of the Ad-hoc audit

## Context of the initiative

In order to reach the EU 2020 policy objectives, significant investments in Europe's transport, energy, information and communication networks are required. Infrastructure financing needs are estimated to be of € 1.5 trillion to € 2 trillion over the next decade.<sup>7</sup> In the same time, as a result of the crisis, European governments became increasingly reliable on private financing due to limits on public funding, indebtedness and fiscal constraints.

Following the 2008 financial crisis, private investments in infrastructure projects declined significantly. Banks were confronted with growing constraints on their long term bank lending capacity due to regulatory restrictions (Basel III) and the need to de-leverage their balance sheets. Furthermore, debt capital market financing for greenfield infrastructure fell. Prior to the global financial crisis institutional investors were primarily investing senior debt in the infrastructure market through monoline insurers. The monolines provided a full wrap which improved the credit ratings of project bonds based on their triple A ratings. During the crisis the monoline ratings plunged and this type of credit enhancement no longer worked. The lack of funding on the private market contributed to an inflation of EIB's balance sheet with respect to infrastructure finance.<sup>8</sup>

Despite the monoline collapse, institutional investors were seen as a potential source of financing to clear the infrastructure finance gap. Institutional investors are one of the largest sources of private and public capital with over USD 70 trillion in assets.<sup>9</sup> Furthermore, infrastructure as an asset class is very suitable for institutional investors amongst others for the following reasons:

- Infrastructure offers diversification as it has low correlation with other investments and business cycles;
- Projects financed through project finance techniques are historically robust with low probability of default and low loss given default ratios when compared to for instance corporate bonds;
- The long term nature of infrastructure projects matches their long term liabilities;
- Infrastructure debt has an illiquidity advantage which results in higher returns than assets with similar rating and duration.

However at the time of the deterioration of the traditional sources of private finance for infrastructure projects, the debt capital markets were not readily available for greenfield infrastructure financing in the EU following the demise of monoline insurers. Investors, unfamiliar with the asset class, were seeking well rated assets in the A rating category, which did not fit with the greenfield projects proposed in the sector.

At a time during which infrastructure investment projects were no longer supported by the markets or were penalised by harsh financing conditions in several MS and in order to encourage capital market investments, the EU and EIB developed an alternative financial instrument, i.e. the PBCE, to provide credit enhancement for bond investors which would facilitate investments in infrastructure. Since the PBI pilot became operational in November 2012 and until July 31<sup>st</sup> 2015, there have been 7 projects signed with the use of PBCE. The projects are summarised in the timeline below.<sup>10</sup>

<sup>7</sup> [http://ec.europa.eu/economy\\_finance/financial\\_operations/investment/europe\\_2020/investment\\_needs\\_en.htm](http://ec.europa.eu/economy_finance/financial_operations/investment/europe_2020/investment_needs_en.htm)

<sup>8</sup> EIB, An outline guide to Project Bonds Credit Enhancement and the Project Bond Initiative

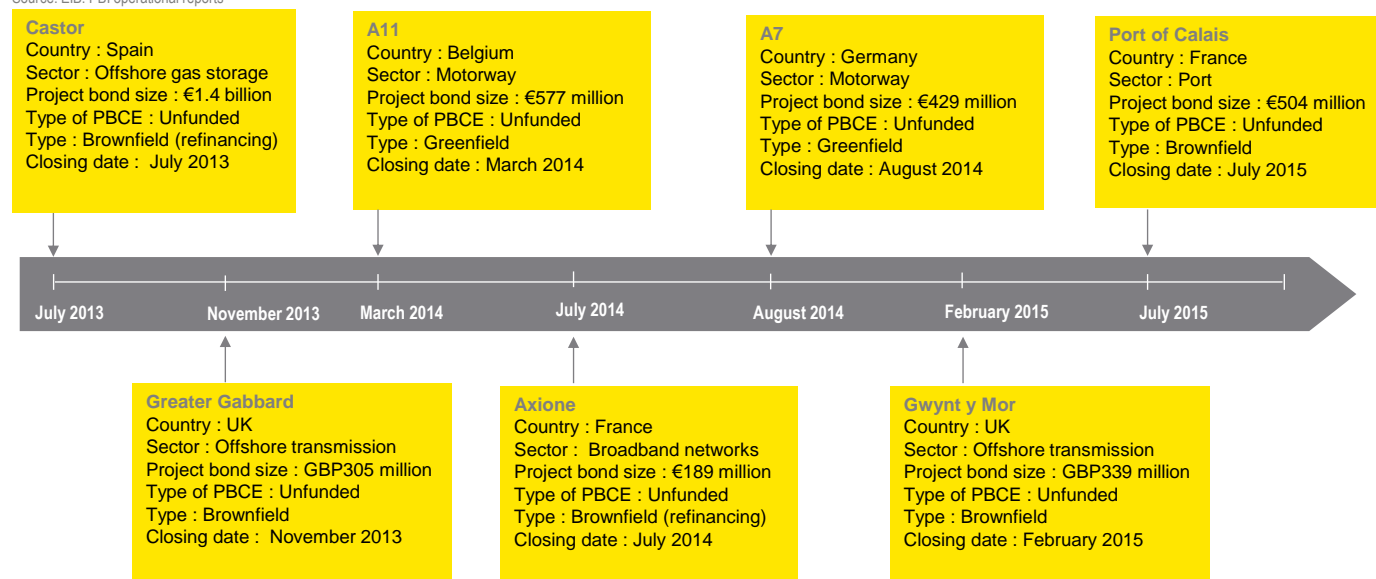
<sup>9</sup> Della Croce, R., Yermo, J. (2013), Institutional investors and infrastructure financing, OECD Working Papers on Finance, Insurance and Private Pensions, No.36, OECD Publishing.

<sup>10</sup> Another project, the sale of the West of Duddon Sands OFTO project reached financial close in August 2015 representing a PBCE size of GBP 38 million and a selling price of GBP 269 million. However this project was not included in the scope of this study.

## Context of the initiative

### Timeline based on financial close date

Source: EIB: PBI operational reports



## PBI, how does it work? A brief introduction to PBCE<sup>11</sup>

The separation of debt into senior and subordinated tranches is the core mechanism to enhance the credit rating of the projects and to mitigate the project risks.

EIB provides a subordinated tranche, the Project Bond Credit Enhancement Facility (PBCE), to support senior project bonds issued by a project company. The PBCE is available until the scheduled final repayment date of the bonds, or earlier if preferred by sponsors and bond investors.

This subordinated tranche will be provided as either (i) a subordinated loan (i.e. the funded PBCE) or as (ii) a letter of credit (i.e. the unfunded PBCE), which can be drawn if the cash flows generated by the project are insufficient to ensure senior debt service, or in order to cover construction cost overruns. The funded and the unfunded PBCE have significant differences in how each affect default risk and improve recovery prospects for bondholders should a default occur.

The improved credit quality of the senior bonds is expected to facilitate their placement with long-term institutional investors and therefore widens financing options for infrastructure projects in terms of both margin and tenor.

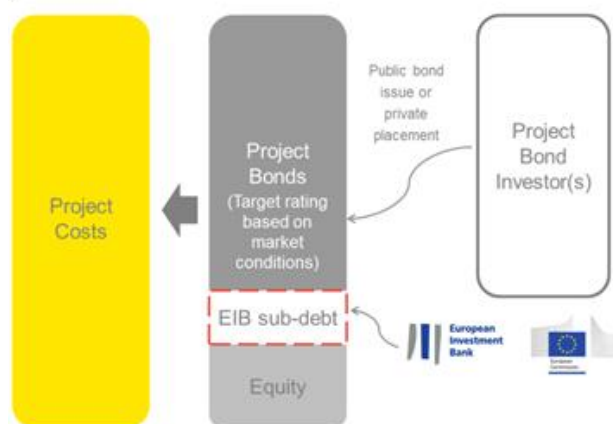
The maximum size of the PBCE is limited to 20% of the nominal credit enhanced Senior Bonds. The EU contribution serves to partly cover first losses on the portfolio basis, allowing the EIB to engage in riskier transactions.

Each funded project should fall within the sectors that qualify for support i.e. trans-European networks of transport (TEN-T) and Energy (TEN-E), broadband and ICT (ICT). In addition, they should meet EIB's normal eligibility criteria.

The diagrams below illustrate the functioning of the funded and unfunded PBCE. Examples have been also presented, below the diagrams.

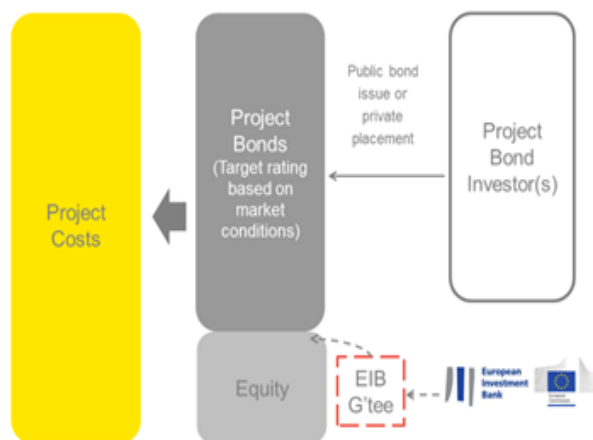
### The funded PBCE

Source: An outline guide to Project Bonds Credit Enhancement and the Project Bond Initiative



### The unfunded PBCE

Source: An outline guide to Project Bonds Credit Enhancement and the Project Bond Initiative



### The funded PBCE, example

Sources of funds :	Without EIB funded PBCE (€ million)	With EIB funded PBCE (€ million)
Senior Bond	100	83
Funded PBCE facility (subordinated)	0	17
Equity	20	20
<b>Total sources of funds</b>	<b>120</b>	<b>120</b>

Source: An outline guide to Project Bonds Credit Enhancement

### The unfunded PBCE, example

Sources of funds :	Without EIB unfunded PBCE (€ million)	With EIB unfunded PBCE (€ million)
Senior Bond	100	100
Equity	20	20
<b>Sub-total</b>	<b>120</b>	<b>120</b>
Unfunded PBCE facility (LoC)	0	20
<b>Total available funding</b>	<b>120</b>	<b>140</b>

Source: An outline guide to Project Bonds Credit Enhancement

<sup>11</sup> The PBCE mechanism is further discussed in appendix B.

## Objectives and scope of the Ad-hoc audit

The PBI pilot phase was set up by Regulation of the European Parliament and the Council (EU) N°670/2012 of 31 July 2012 as a precursor for the main phase of the PBI, which may be rolled out under the EU Regulation N°1316/2013 establishing the Connecting Europe Facility.

The pilot phase was implemented following the signature of a cooperation agreement on 7 November 2012 between the EC and the EIB, with operations to be approved by the EIB Board of Directors before the end of 2014 and to reach Financial Close until the end of 2016. At the end of 2013, the Commission finalised an Interim Report that highlighted the developments and achievements since the launch of the pilot phase of the Europe 2020 Project Bond Initiative. Furthermore, an external evaluation of the PBI pilot phase was concluded in June 2014 in the context of the Commission reporting exercise to the European Parliament and the Council on the implementation of the pilot phase.

### Purpose of the Ad-hoc audit

EU Regulation N°670/2012 (art. 1(1)) requires a full scale independent evaluation of the PBI pilot phase to be concluded in 2015. This evaluation will draw upon the results of the previous external evaluation concluded in June 2014.

1. Assess the **effectiveness** of the PBI pilot phase, defined as the extent to which the initiative has achieved the objectives, i.e. to help finance priority project of EU added value and to contribute to the development of debt capital market financing of infrastructure projects;
2. Assess the **efficiency of Union spending**, defined as the extent to which the EU contribution allocated to the PBI pilot was commensurate with the outputs achieved;
3. Assess the **relevance** of the PBI pilot phase, defined as the extent to which the initiative proved relevant to address the market needs for the financing of priority projects in transport, energy and ICT, and contributed to the development of debt capital market financing of infrastructure projects;
4. Assess the **value added** and **additionality** of the PBI pilot phase, derived from a comparison with other EU or Member States' instruments and other existing forms of long-term debt financing;
5. Draw lessons from the implementation of this financial instrument since its establishment until the time of the evaluation.

The conclusions of the evaluation will serve to enable the Commission to consider proposing appropriate regulatory changes, if deemed necessary.

### Scope of the Ad-hoc audit

The scope of the evaluation covers the following:

- ▶ Evaluated programme: Project Bond Initiative pilot phase
- ▶ Cut-off date: projects approved by EIB prior to 31 December 2014 and closed prior to 31 July 2015
- ▶ Eligible area: The 28 Member States of the European Union (EU-28)
- ▶ Related programmes / Directorate Generals: The trans-European networks (TEN-T, TEN-E), DG CNCT (Digital Agenda), DG MOVE, DG ECFIN, DG ENERGY and the EIB. Emphasis is particularly on trans-European infrastructure, e.g. transport corridors, energy priority projects.

The Tender Specifications indicate the evaluation questions to be answered in order to formulate appropriate findings and draw conclusions for each evaluation issue. In particular, an assessment will need to be made on the following issues:

- a. The added value and additionality of the PBCE product compared to other Union or Member State instruments and other existing forms of long term debt financing;
- b. The impact of the PBI pilot phase on the EU project bond market;
- c. The achieved multiplier effect in relation to the EU budget; and
- d. A comparative analysis of the competitiveness of the project bond solution, covering, inter alia, a comparison of the non-price characteristics of the PBI, the costs of the PBI product versus alternative means of project finance, including bank lending, and its advantages and disadvantages in terms of integral lifetime cost to the project.



## Objectives and scope of the Ad-hoc audit

### Process

The ad-hoc audit methodology was broken down into three distinct phases:

- ▶ Inception Phase – five weeks
- ▶ Fieldwork Phase – eleven weeks
- ▶ Reporting Phase – three weeks

### Inception Phase

The Inception Phase of our assignment consisted of the following steps:

- ▶ Kick-off meeting
- ▶ Documentary review of key documents
- ▶ Drafting an analytical methodology for each evaluation question
- ▶ Project assessment and benchmarking
- ▶ Preparation of the field phase and data collection tools
- ▶ Preparing Interview Guides for stakeholder interviews
- ▶ Validation of the stakeholders to be contacted
- ▶ Delivery of the Inception Report

During this phase, our analysis and findings have been primarily based on the following sources of information:

- ▶ A kick-off meeting with the EC (DG ECFIN, DG CONNECT, DG BUDG, DG MOVE) and EIB
- ▶ Information provided by the Commission and the EIB, including:
  - Six-monthly reports from the EC and EIB
  - The pipeline of eligible projects for the PBCE product
  - The generic term sheet for the PBCE product
  - EIB PBI financial statements
  - Operational reports on the PBI from EIB to EC
  - The pipeline schedule for the PBI
- ▶ Third party data providers, a.o.:
  - Inspiratia
  - Infrastructure Journal
  - Moody's
  - Standard & Poor's
  - Project Prospectus for publicly listed projects
- ▶ Conversations with our client on draft deliverables.

## Objectives and scope of the Ad-hoc audit

### Fieldwork Phase

The Fieldwork Phase consisted of the following steps:

- ▶ Conducting interviews with EC and EIB officials
- ▶ Conducting interviews with other stakeholders
- ▶ Performing case studies on similar projects that did not make use of PBCE
- ▶ Completing the initial desk research
- ▶ Analysis of the data collected and formulating answers to the ad-hoc audit questions
- ▶ Internal quality review
- ▶ Delivery of the (Draft) Final Report

Twenty-six interviews have been conducted as part of the project with several interviews covering multiple projects. We selected the stakeholders to interview in agreement with the European Commission and in consultation with the EIB. The interview breakdown per type of stakeholder is presented in the table below.

Breakdown of interviewed stakeholders per type

	Number
Bond coordinator / Structuring bank	4
Bond purchaser	1
Contractor	1
EIB	2
Equity investor	6
European Commission	5
Initial bond issuer	1
Legal advisor	2
NGO	1
Procuring authority	2
Rating agency	1
<b>Total</b>	<b>26</b>

Source: EY Analysis

The interviews conducted by us with each interviewee typically lasted two hours, and followed a structured Interview Guide. The Interview Guide is presented in Appendix D.

The analysis of the data collected in the course of these interviews and our findings with relation to the ad-hoc audit questions are presented in the following sections.

### Caveats

The analyses and conclusions brought up in our report were based on a combination of stakeholder interviews and desktop research. The information received faces limitations due to the confidentiality of the information of the assessed projects. The desk research conducted was based mainly on publicly available information and opinions of the interviewed stakeholders.

## Answers to the ad-hoc audit questions

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4. Effectiveness
5. Efficiency
6. Relevance
7. Value added and additionality

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

### 1. EFFECTIVENESS

#### Question 1.1.: Did the Project Bond Initiative help achieve priority projects on the TEN-T, TEN-E and ICT and broadband networks?

Proportion of beneficiary projects of the PBCE that are priority or core network projects

Shortly after the launch of the PBI pilot phase, the EU undertook a revision of the TEN policies, with the adoption of new guidelines for TEN-T (in December 2013) and TEN-E (in April 2013).

The new TEN-T regulation integrates the old TEN-T 'priority projects' in the much more extensive TEN-T core and comprehensive networks dual concepts<sup>12</sup>. The comprehensive network consists of all existing and planned transport infrastructures of the trans-European transport network. The core network consists of those parts of the comprehensive network which are of the highest strategic importance for achieving the objectives for the development of the trans-European transport network.<sup>13</sup>

In order to assess the TEN-T pilot projects to be considered as 'priority' under the new regime, we have therefore retained the concept of the core network. In that sense, the Port of Calais may be considered as belonging to the core network.

Similarly for TEN-E, the old regime defined the concept of projects of common interest (i.e. TEN-E projects) and axes for the priority projects.<sup>14</sup> Priority projects are to be carried on these axes and should meet specified criteria. Among these priority projects, projects which are of cross-border nature or which have significant impact on cross-border transmission capacity are declared to be of European interest and are given priority. Under the new regime (Regulation 347/2013), the concept of projects of common interest was redefined with a stronger focus on European added value, cross-border impact and priority corridors.

For TEN-E, under the old regime, Greater Gabbard is part of a priority axe but is not a project of European interest.

For the ICT and broadband networks, priority projects were not defined at the time of the Pilot.

PBI supported eligible projects under the *Cooperation Agreement* between the EC and the EIB

All the beneficiary projects met the eligibility criteria settled under the *Cooperation Agreement* signed between the EC and the EIB, among which, the obligation to be either an ICT and Broadband Project, or a TEN-E Project or a TEN-T Project. Under this agreement, the eligibility criteria differ from the criteria used to determine priority or core network projects under the related regulations. In the cooperation agreement, the first priority was to explore a new financial instrument in order to test the product's ability to achieve the envisaged credit enhancement, establish product documentation and introduce the product to market participants.

The Pilot targeted projects that were, among others:

- (i) Available on the market;
- (ii) Of sufficient size;
- (iii) Investment grade;
- (iv) Across different sectors;
- (v) Dispersed in different geographies;
- (vi) At different stage (greenfield vs brownfield);
- (vii) In countries with developed PPP markets which allow comparison with previous projects completed without PBI.

Moreover, the experiences of the EIB in the sector and of the procuring authority in the procurement process also played a major role.

<sup>12</sup> Under the old regime, 30 priority axes/projects were identified. The priority list was composed of 18 railway projects, 3 mixed rail-road projects, 2 inland waterway transport projects and 1 refers to Motorways of the Sea.

<sup>13</sup> Source: REGULATION (EU) No 1315/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013.

<sup>14</sup> Under decision 1364/2006 (old regime), these projects of common interest (PCI) present the following criteria: (i) they relate to electricity or gas networks, (ii) they promote the interconnection, interoperability and development of TEN-E and access to such networks, (iii) they are compatible with sustainable development and (iv) they display potential economic viability.

Nine axes have been identified for electricity networks and six for gas networks. Refer to Decision 1364/2006 to obtain the complete list.

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

Under PBI, seven<sup>15</sup> projects reached financial close as of 31 July 2015 and all opted for the unfunded form. The initiative has been applied in different European markets and across all the sectors targeted by PBI.

The *Cooperation Agreement* allowed the use of PBCE on refinancing's and/or acquisitions projects (in the case of Castor, Greater Gabbard, Gwynt y Mor and Axione). This might be less relevant from an immediate TEN policy perspective as they neither create new infrastructure nor upgrade existing ones to support EU's growth strategy. Nevertheless, as mentioned above, the first priority was to explore the benefits of a new financial instrument.

### Status updates of the priority and core network projects

In the current policy context, the EC is putting emphasis on supporting the completion of the CEF priorities (which have broadened the list of priority projects initially envisaged in 2012) through the use of financial instruments.

Concerning TEN-T, in the majority of the cases, a core network project entails the completion of several sub-projects as multiple sections must be realised. During the PBI pilot phase a limited number of TEN-T core network projects have been supported. The completion of a large transport infrastructure project (TEN-T priorities) faces various obstacles as among others facts:

- ▶ Several jurisdictions might be involved depending on the cross-border nature of the project;
- ▶ Diverging opinions and priorities might result in lack of cooperation between countries;
- ▶ Lack of available public funding might result in financial constraints;
- ▶ Some public authorities might be reluctant to complete a project;
- ▶ The public opinion might be hostile vis-à-vis an infrastructure project;
- ▶ Change of administration might occur during the completion of a project;
- ▶ For some priority projects, only part of the investment costs may be covered by the revenues of the project (which restrict therefore the use of the financial instruments).

The Action plan report by H. Christophersen, K. Bodewig and C. Secchi identified projects in the core network corridors in which PBI might suit in the case of a potential roll-out of the instrument.<sup>16</sup>

For TEN-E, following the regulation change, it is difficult to assess how many projects were supported (priority axes versus priority corridors). Each priority axe/corridor also entails the completion of sub-projects as various works need to be completed in multiple jurisdictions. Based on the last update made until 2013, we note that several works have been completed on the priority axes.<sup>17</sup>

The completion of priority and core network projects is very challenging. Interviewees reported that financing was not the main issue. We will see in section 4 that other considerations should also be taken into account in order to achieve these projects.

<sup>15</sup> Following seismic activity, operation of the Castor project was suspended in September 2013. Hence the project has not been completed. For more information on the Castor project, please refer to Appendix C.

<sup>16</sup> Source: Action plan: Making the best use of financial schemes for European transport infrastructure projects

<sup>17</sup> Source: EU: TEN-E financed projects 1995-2013 for Europa.

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

### Key findings

- ▶ All the beneficiary projects met the eligibility criteria set under the Cooperation Agreement between the EC and the EIB.
- ▶ The first priority was to build a new market, demonstrate proof of concept and set standards. The Pilot was implemented under various circumstances to demonstrate the feasibility and replicability of the instrument.
- ▶ As of 31 July 2015, seven projects have reached financial close under the PBI.
- ▶ The EU adopted new guidelines for the TEN-T and TEN-E policies in 2013.
- ▶ The EU revised the list of priority and core network projects for TEN-E and TEN-T respectively. For the ICT and broadband networks, priority projects were not defined at the time of the Pilot.
- ▶ For TEN-T, the Port of Calais may be considered as belonging to the core network under the new guidelines.
- ▶ For TEN-E, under the old regime, Greater Gabbard is part of a priority axe but is not a project of European interest.
- ▶ While the cooperation agreement allowed the use of PBCE on refinancing of projects this was less effective from an immediate TEN policy perspective which focuses on realizing new infrastructure or upgrading the existing ones.
- ▶ The completion of priority and core projects is challenging as these projects are complex by nature. In order to achieve these projects, we will see in section 4 that other considerations should also be taken into account.

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

### Question 1.2.: To what extent has the PBI helped mobilise additional volume of financing for infrastructure projects in the TEN-T, TEN-E and ICT and broadband sector?

Would banks or investors have invested in the projects without PBCE?

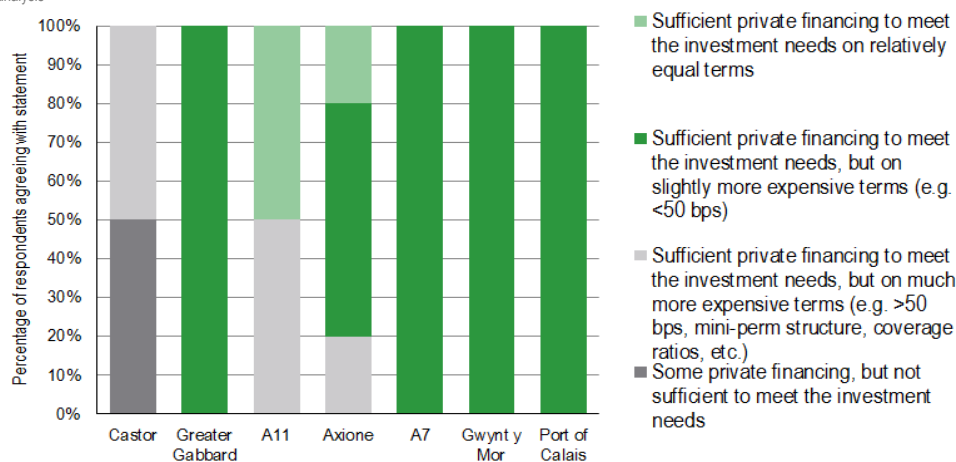
It is difficult to fully isolate the effect that the PBI had on the increased volumes of bank and capital market debt in the infrastructure sector:

- ▶ According to many interviewees the low interest rate environment and absence of investment alternatives (e.g. government bonds) observed in the last years also have had a very significant impact on the investment allocation. In parallel to this economic environment PBCE was launched in a nascent project bond market and did support its development.
- ▶ At the time of the product conceptualisation, there clearly were liquidity issues for infrastructure financing with more liquidity available on the A- basket than in the BBB and below range. Throughout the pilot stage of the PBI, that problem was partly resolved because certain investors preferred the additional yield for below A-investments.
- ▶ The benefits of the PBCE cannot be isolated from the presence of the EIB which provides comfort to the market.

PBCE certainly has proven able to produce competitive offers on the individual projects. The results of the analysis are less unambiguous regarding the extent to which PBI has helped mobilising additional volume of financing for the three sectors. The graph below summarises the estimated gains triggered by the credit enhancement for the beneficiary projects and includes estimates from interviewees / organisations who have been closely involved in the deals.<sup>18</sup>

#### Respondents' feedback with respect to expected private finance support without PBCE

Source: EY analysis



Bond purchaser	1			1			1	3
Equity investor			1	1	2			4
Other	1	2	1	3	1	1	1	10
<b>Total</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>17</b>

- ▶ The PBCE enhancement did play a major role in mobilising additional volume of financing for Castor. For Castor, the majority of stakeholders believed that without the PBCE the project would not have been able to close given the economic turmoil and the difficult Spanish market at that time. Following the project debt enhancement, the project obtained a credit rating of BBB and BBB+ from S&P and Fitch, respectively, which was a notch above the Spanish sovereign rating at that time.<sup>19</sup>

<sup>18</sup> 17 out of 26 interviewees expressed an opinion.

<sup>19</sup> Following seismic activity, operation of the Castor project was suspended in September 2013. The project company ESCAL, as concessionaire of the Castor project, requested the consent of the EIB as PBCE guarantee provider, to relinquish their concession. Relinquishment of the concession was presented to the Spanish Ministry of Industry, Energy and Tourism in July 2014. Acceptance of this relinquishment was approved

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

- ▶ For Axione, the project entailed technology risks and the bundling of various SPVs into one entity. The PBCE inclusion was critical to obtain financing via a bond structure although a bank financing solution would have been possible although at less favourable terms.
- ▶ For Greater Gabbard it would have been possible to obtain bank financing (although at less favourable terms) without credit support and perhaps even bond financing. While the bonds potentially could have been sold without the PBCE, we have been informed that it was the express request of the procuring authority to switch from the bank financing route to a PBCE-enhanced public bond. This allowed the procuring authority to achieve the lowest cost of financing of all the OFTOs up to that date. The fact that this was repeated on 2 subsequent transactions is evidence of the positive role of PBCE from a promotor's and UK taxpayer's perspective.
- ▶ Following Greater Gabbard the PBCE was not considered needed for Gwynt y Mor (the 2<sup>nd</sup> OFTO) for a bond financing, but it helped to smooth the process and sell the transaction ('déjà vu').
- ▶ The A11 is the first 'greenfield' project (i.e. a development project for the construction of infrastructure) using the PBCE product. Allianz who is an investor in the debt of the project has underwritten greenfield roads after the A11 but it is questionable if the project could have attracted bond financing without PBCE. One respondent involved in the A11 deal argued that without PBCE probably more institutional investors would have been involved in bank plus bond structured solutions. In that sense, the PBI directed the way of thinking towards a bond structure but it might be that bond investors would also have looked at the deal without the enhancement.
- ▶ For the A7 the winning consortium assessed three funding options (bank, bond and bond + PBCE). Both bond options (in- and excluding PBCE) had the same investor base so it can be argued that the investors would have invested without PBCE. Nevertheless, PBCE was selected by the Sponsor/ Procurement Authority as the most competitive solution.
- ▶ The Port of Calais was financed entirely with bond financing and no bank debt. The deal was privately placed. Before the bond route was explored the (international) banking market was approached and informed on the basis of a project information memorandum. Banks at that time were not comfortable with the traffic risk and guarantee structure that was in place. The security from the grantor was further developed when the bond route was explored. We understand that the project was already investment grade without PBCE and that the instrument was 'nice to have' but not crucial to obtain financing. Therefore PBCE did not attract additional volumes of financing.

### Key findings

- ▶ PBI has been extremely useful in facilitating the development of a project bond market and it has helped to mobilise additional volume of financing on some of the beneficiary projects
- ▶ The PBCE was crucial to obtain debt financing for Castor
- ▶ Axione and to a lesser extent the A11 and Greater Gabbard required PBCE to obtain capital market financing, but could have been financed with bank debt
- ▶ The other projects could have been financed by the debt capital markets without enhancement by PBCE
- ▶ Nevertheless, in all projects, the enhancement provided by the instrument enabled sponsors and therefore also the procuring authorities and public finances to obtain more favourable conditions in terms of pricing and/or alternative financing solutions

by Royal Decree in October 2014. Senior Bonds have been fully repaid. The €200 million letter of guarantee (PBCE) has been discharged accordingly. For more information on the Castor project, please refer to Appendix C.



## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

### 1.3.: To what extent has the PBI encouraged debt capital market financing for infrastructure projects?

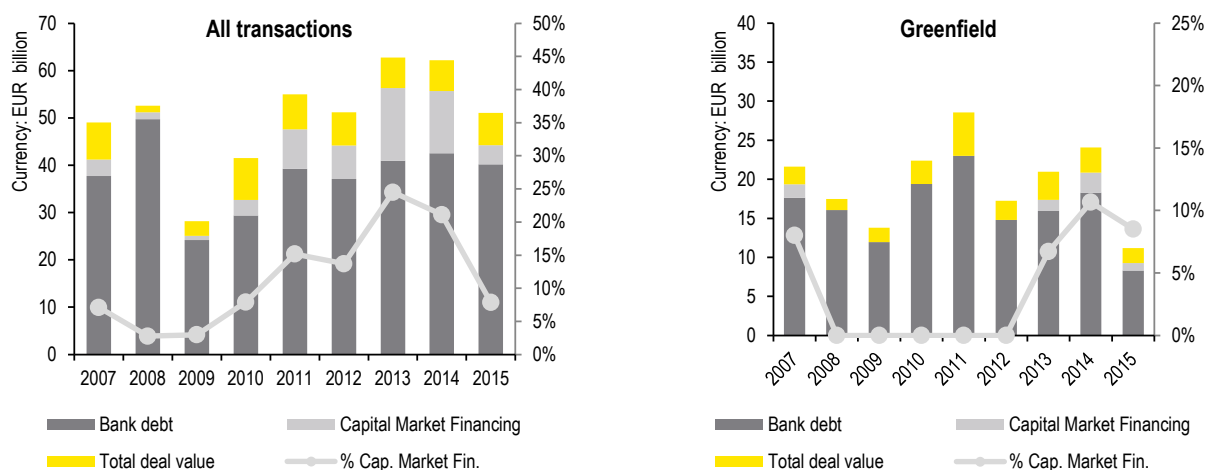
#### Overview of investment volumes in the European infrastructure market

The European project finance market has seen substantial fluctuations over the last years. In 2009, infrastructure funding from all financing types fell, bank loans representing the largest decline. The withdrawal of banks in infrastructure projects created a substantial funding gap.

While in the period 2009 - 2014 capital market financing has been gradually increasing as a percentage of total transaction value, it took until 2013 for the first projects with greenfield risk to be financed with institutional money (see graph below). These were primarily social infrastructure projects in the UK. The transport project L2 Bypass in Marseille did close with use of capital market financing that year as well, with support from a post-construction guarantee of receivables from the French State.

#### Project finance volume (private financing) in European market, excluding Turkey and Russia

Source: Infradeals



#### PBI pioneered different sectors, geographical areas and structuring types

Since 2010, the European Investment Bank (EIB) and the European Commission (EC) have been engaged in an extensive consultation exercise to develop new financing products to respond to the funding gap. Interviewees agree on the important contribution that PBCE made in raising awareness and in encouraging institutional investors to look into infrastructure assets from 2010 onwards. In fact, PBI pioneered the use of bond financing in different sectors, geographical areas and structuring types:

- OFTO sector: Greater Gabbard was the first OFTO project to attract financing from the capital markets;
- Road sector: in Belgium as in Germany, the A11 and the A7, respectively, were the first road greenfield projects funded through capital markets;
- ICT sector: for the refinancing of Axione, it was the first time that a project bond was used to finance a European telecom asset;
- Port sector: the Port of Calais was the first project to use project bonds and first PBI project where bank financing was not available.

By pioneering bond investments in infrastructure financing, the PBI created precedents which facilitated further investment in infrastructure bonds:

- On Gwynt y Mor (the second OFTO project financed with PBCE), the similarities of the deal structure with Greater Gabbard helped the deal arrangers to smooth the process and sell the transaction;

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

- Inspiratia reported that the Arranger used documentation of Axione for Port of Calais;<sup>20</sup>
- Bonds have become more efficient since the introduction of deferred drawdown (A11) and acceptable make whole clauses.

The relationship between the PBI and the revival of debt capital market financing after the decline of the monoline solution is apparent and generally our respondents and various literature sources agree that PBI has catalysed the awareness and interest for investors in infrastructure project bonds. This is substantiated by the fact that greenfield financing by institutional investors took off in the year that the first PBCE project closed.

Which types of bond financing were applied on the beneficiary projects?

The debt component of infrastructure projects may be financed in a variety of ways, including by way of the debt private placement market and the public institutional investor capital markets. Whilst public bonds have traditionally been used for larger infrastructure transactions, private placements have been used for smaller transactions. Listing a project often requires a public credit rating and may enhance the investor base and liquidity. But a listing also requires the issuer (SPV) to comply with listing-related regulations and information requirements. Listing a project can sometimes help to exempt the investors from withholding tax.

The use of PBCE can be considered for the credit enhancement of either public bonds or private placements. The table below shows which types of bond financing were used for the beneficiary projects and confirms the broad applicability of the instrument. PBCE has encouraged debt capital market financing with public bond issues for the OFTO's and Castor and private placements for the greenfield projects in the transport sector. In that sense EU and EIB have not directed the development of a specific class within debt capital market financing by limiting the PBI for either private placements or public listings.

The pricing of a public bond pricing is largely market-driven resulting in a risk of price fluctuation between final offer and financial close. However, for the government it is important that the procurement authority secures committed financing at final offer stage, which is a requirement in some jurisdictions. Castor, the A11, Axione and the OFTO projects were not hindered by the problem of committing finance at final offer. Castor and Axione were refinancing's and for the A11 it was the government and on the OFTO's the onshore transmission system operator, National Grid Electricity Transmission (A3 stable) that accepted pricing risk.

The risk of price fluctuations did play a role for the greenfield projects (which coincidentally are the TEN-T projects A11, A7 and Port of Calais). The A11 is a specific case because it was underwritten by EIB and Allianz before it was listed. For equity investors and bond investors there are more reasons why a private placement is favoured above a listing:

- The privileged contact between equity and debt investors
- The costs, administrative burden and the disclosure requirements imposed under a listing issue.

Types of bond financing on the beneficiary projects

Project	Public or private placement; Listed or unlisted bond	Greenfield / Brownfield / Refinancing	Types of investors
Castor	Publicly listed	Refinancing	29 investors located in: Germany (28%), Benelux including EIB (23%), Spain (18%), France (11%), the UK (10%) and Italy (10%)
Greater Gabbard	Publicly listed	Greenfield asset completed and in operation at time of sale	UK fund managers 78%, insurance companies and pension funds 22% (UK, Canada and EU)
Axione	Publicly listed	Refinancing	European institutional investor base, likely less than 8 investors
Gwynt y Mor	Publicly listed	Greenfield asset completed and in operation at time of sale	37 subscribers to the bonds, 78% fund managers, 22% pension funds and institutional investors. 98% UK-based
A11	Private placement, listed	Greenfield	EIB, one institutional investor
A7	Private placement, unlisted	Greenfield	Syndicate of 6 experienced institutional investors from Europe, Canada and the U.S.
Port of Calais	Private placement, unlisted	Greenfield	One institutional investor

Source: Infradeals; IJ Global; Inspiratia

<sup>20</sup> Source: Inspiratia, Port of Calais, July 2015

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

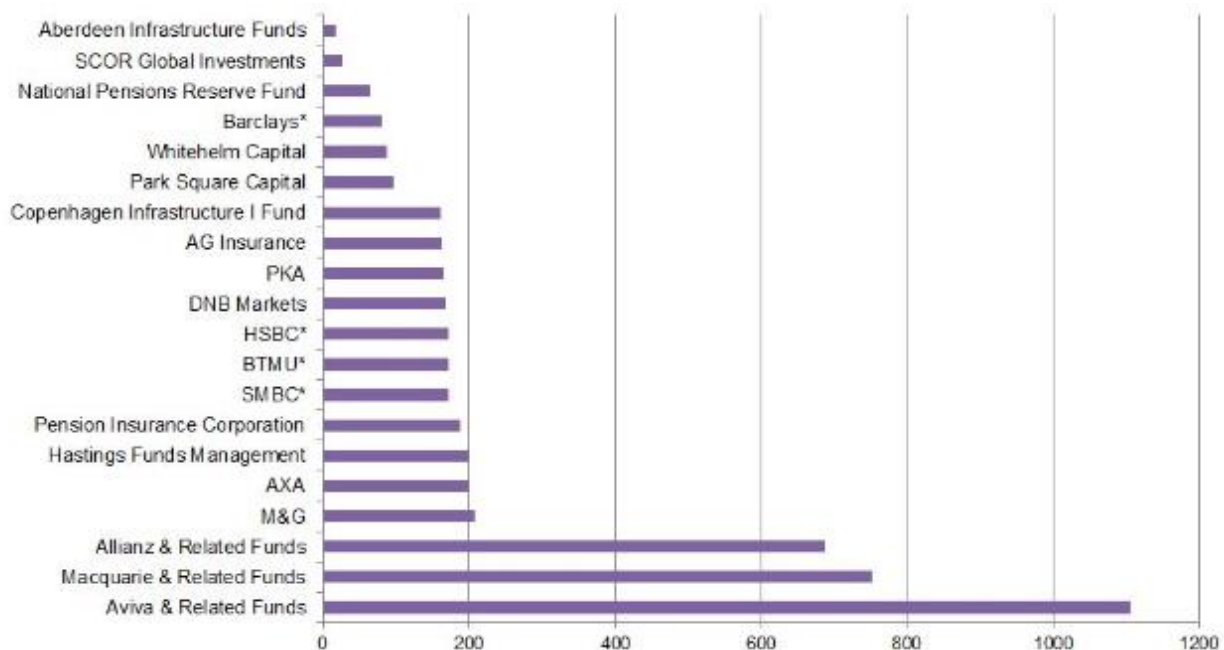
What types of investors were attracted to the beneficiary projects and the EU project bond market generally?

The PBI has attracted investors from continental Europe, the UK, Canada and the U.S. The investments in the beneficiary projects have been made (i) directly by pension funds or insurance companies or (ii) through fund managers. The funds bring a wider range of institutional investors to the projects.

But when we look at the growing volume of institutional money dedicated to infrastructure assets, the market is concentrated among big bond investors (a.o. Aviva, Macquarie and Allianz) as the figure below illustrates. This feature of the market comes from the high level of sophistication that is needed from investors in this space.

Project finance debt from institutional lenders EU Q2 2014 – Q1 2015

Source: Inspiratia, dataLive



These institutional investors have set-up the appropriate teams and developed the necessary systems and procedures (risk policy guidelines, governance, credit rating models, pricing models, internal education process). Private placements and the requirement of committed financing do restrict the pool of investors. Certainly not all institutional investors have the capabilities to commit financing for a period of up to six months or to be heavily involved during a tender.

There is however a sufficient number of investors on the private placement market to serve the current pipeline:

*'There are probably about 20 investors currently active on the private placement market. Together they can raise somewhere between €3 and €5 billion. For projects that have received a rating from one the agencies this pool increases to ca. 35 investors.'*

*'There are a lot of investors that do not understand the infrastructure asset class. This learning process requires a lot of investment. At the moment the infrastructure market will not benefit from additional players entering to the market. There is already too much liquidity and not enough projects to finance.'*

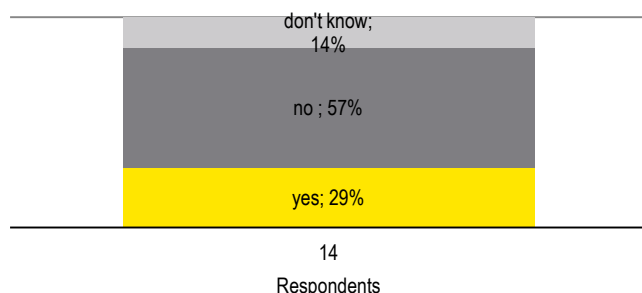
These private placement institutional investors and investment managers are able to pick up big stakes (e.g. one institutional investor subscribed to all senior bonds on Port of Calais – €504 million).

So we may conclude that the bond market for private placements has now been established.

## The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.

### Will PBCE help to establish the infrastructure sector as a more liquid asset class?

Source: EY analysis



### To what extent will PBCE help to create a liquid bond market?

In its communication to the European Parliament the EC refers to the exhortation of the Monti report to '[...]explore all combinations between public and private funding [...]', to '[...] improve incentives for long term investors [...] to direct their resources to long term infrastructure projects' by encouraging '[...] the development in Europe of a liquid bond market for very long maturities'.<sup>21</sup>

The development of a secondary market is not expressed as one of the policy objectives of the PBI. Albeit the illiquid nature of infrastructure debt results in an extra cost for project promoters, investors view illiquidity of a.o. infrastructure debt as a risk premium to be exploited (and not feared). Whilst it must be conceded that the illiquidity of such assets is more pronounced and that secondary liquidity cannot be guaranteed, this should not detract from the potential marketability of such assets in the future. The development of secondary activity will focus on the quality of underlying credits. Many participants will require external ratings of underlying projects and will require investment grade assets.<sup>22</sup>

Theoretically PBCE can make it easier for primary investors to trade their assets to secondary buyers. But less than 30% of the respondents expect that PBI will help to create a liquid project bond market with active trading of assets for various reasons.

- Institutional investors especially like the infrastructure sector because of the asset and liability match. Therefore it is arguable that there is little motivation for investors to seek a total return on their investments by selling their positions prior to the end of the maturity of the bond. Secondly, a buy and hold strategy with private placements provides investors with a cushion for the volatility of their portfolios.<sup>23</sup> With a public listing investors are required to value their investments on a mark-to-market basis with the risk of adjustments.

*'Each asset is different and the market is segmented. Fixed income investors with huge liquidity do not understand this market. Documentation is not standardised, data is limited and reporting requirements are not standardised.'*

*'The infrastructure assets still represent a small portion of insurance companies' assets. To enlarge this class, insurance companies need more data on infrastructure, for instance on spreads. PBI cannot help in that.'*

*'It will not become a fixed-rate income type asset class, it's too specific. The class that it is currently in is fine. This is what investors want.'*

*'For example, the R1 in Slovakia has no price on Bloomberg. However, it may still be too early to assess if investors in infrastructure projects have a buy and hold strategy. It may not be a sustainable strategy. This 'buy and hold' behaviour might be the result of the zero interest rate environment and lack of investment opportunities.'*

We conclude that while PBCE was not intended to help develop a secondary market with frequent trading, it should definitely be able to increase the marketability of assets and facilitate trading amongst institutional investors. In the

<sup>21</sup> Source : European Commission (COM 2011-660) A pilot for the Europe 2020 Project Bond Initiative

<sup>22</sup> Source : Allianz (2015), The illiquidity advantage of Infrastructure Debt

<sup>23</sup> Source : Allianz (2015), The illiquidity advantage of Infrastructure Debt

## **The PBI pilot contributed to develop capital markets for infrastructure projects. All projects achieved were eligible.**

future this may help to reduce the illiquidity premium paid by promoters. In any case, the first PBI projects have already helped to provide information on the pricing of infrastructure debt to the market.

### **Key findings**

- ▶ PBCE has made a very important contribution in raising awareness and in encouraging institutional investors to look into infrastructure assets and reassess their business models
- ▶ PBI pioneered the use of bond financing in different sectors, geographical areas and structuring types
- ▶ PBI encouraged debt capital market financing, especially for greenfield projects in the transport and energy sectors which took a flight after the year in which the first PBCE project closed
- ▶ Institutional investors have both invested directly or through investment funds into the beneficiary projects
- ▶ The private placement market is currently established well enough to finance the current pipeline

## The EU contribution achieved output that was in line with the targets and objectives

### 2. EFFICIENCY

**Question 2.1.:** How does the target leverage of the project bond instrument compare with the achieved (and expected) leverage on the signed (and expected to be signed) PBCE transactions? *(Differentiation will be made between the leverage of the transactions with EU budget support and the leverage of the transactions without EU budget contribution /at the own risk of the EIB).*

The PBI is a joint initiative by the European Commission and the EIB. The EC role is to (i) define sector eligibility criteria and (ii) provide the EIB with the capital contribution required to enable the bank to credit enhance project bonds (i.e. policy and capital contribution). The EIB is in charge of the financial assessment, structuring and monitoring of the projects (i.e. implementation of the budget by indirect management)<sup>24</sup>. The projects are preliminary selected by the EIB and then approved by the EU.

The EC allocated a budget of €230 million to support the testing phase of the PBI of which €200 million for the TEN-T sector, €10 million for the TEN-E sector and €20 million for the ICT sector. The EU budgetary support act as a cushion to absorb the first losses encountered on the beneficiary projects. This partial risk protection should allow EIB to offer PBCE that absorbs higher risk while conserving the bank's AAA rating and optimising its balance sheet structure.

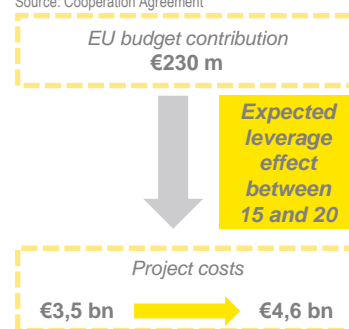
The targeted leverage was set between 15 and 20

The leverage or multiplier effect means the effect whereby the EU budget contribution to PBI mobilises a global investment exceeding the size of the budget contribution. The leverage effect is quantified as the aggregate of the amounts raised to finance the PBI projects (including inter alia equity, quasi-equity, subordinated debt, mezzanine debt and senior debt; referred thereafter as project costs) divided by the aggregate amount of the EU contribution.<sup>25</sup>

At the establishment of the initiative, the EU expected leverage effect was set between 15 and 20.<sup>26</sup> Therefore, the allocated EU amount of €230 million targeted to support project costs for a total amount between €3.5 and €4.6 billion. The targeted leverage effect is illustrated in the opposite diagram.

#### Targeted leverage effect

Source: Cooperation Agreement



As of 31 July 2015, seven transactions have been closed for a total project cost amount of €5,252 million which comprise projects supported by EU funds (€2,970 million) and projects entirely supported by EIB (€2,282 million). The total PBCE enhancement amounted to €612 million. The table below summarises the achieved PBCE transactions per sector in term of (i) total bond size, (ii) total project costs and (iii) PBCE size. The results have been distinguished between the transactions with EU budget support and the transactions at the own risk of the EIB.

For TEN-E as for ICT, the EU budgetary support was totally absorbed by one transaction: Greater Gabbard and Axione, respectively.

#### Overview of PBCE signed transactions per sector

in million €	# of transactions	Bond size	Project costs	PBCE size
TEN-T	3	1,511	2,293	250
TEN-E	1	365	420	55
ICT	1	189	257	38
<b>PBCE signed using EU support</b>	<b>5</b>	<b>2,065</b>	<b>2,970</b>	<b>343</b>
TEN-E	2	1,858	2,282	269
<b>PBCE signed at EIB own risk</b>	<b>2</b>	<b>1,858</b>	<b>2,282</b>	<b>269</b>
<b>PBCE transactions</b>	<b>7</b>	<b>3,923</b>	<b>5,252</b>	<b>612</b>

Source: Operation reports

<sup>24</sup> Source: Article 58 of the EU financial regulations

<sup>25</sup> This calculation allocates the entire leverage volume of private financing raised to the EU budget contribution. It should be noted that PPP transactions are highly leveraged by nature.

<sup>26</sup> Source: EC/EIB (2012): Cooperation Agreement between the European Commission and the European Investment Bank in respect of the Project Bond Instrument: Pilot phase.

## The EU contribution achieved output that was in line with the targets and objectives

The leverage achieved on the PBCE transactions closed so far with EU budget support equals 12.9

On the seven closed transactions, five transactions used EU budgetary support (A11, A7, Port of Calais, Greater Gabbard and Axione) for a total project cost amount of €2,970 million.

The ratio between the total projects costs (i.e. €2,970 million) and the EU budgetary support (i.e. €230 million) is 12.9. The table on the next page summarises these results.

The expected leverage of all the PBCE transactions to be closed with EU budget support is 18.6 and is therefore in line with expectations

As the EU contribution has been allocated on a portfolio basis and not on a project basis, expected transactions to be closed have been taken into account.

In addition to the 5 EU supported transactions described above, two transactions, i.e. the N25 New Ross Bypass (TEN-T) and the Passante di Mestre (TEN-T), are expected to be signed using EU budget contribution for a total project cost amount of €1,300 million. Therefore, the total number of transactions that are expected to be signed, using EU budgetary support of €230 million, amounts to seven and the expected total project cost amount to €4,270 million.

The ratio between the expected total projects costs (i.e. €4,270 million) and the EU budgetary support (i.e. €230 million) is 18.6. The table on the next page summarises these results.

The EU multiplier is in line with the expectations set between 15 and 20 at the establishment of the initiative.

The overall expected leverage, which includes projects at EIB own risk, is 30.3 and is far above the expectations

For the purpose of our evaluation, we have computed an overall leverage which takes into account (i) projects supported by the EU budget (signed and expected to be signed) and (ii) all transactions supported at the own risk of the EIB (signed and expected to be signed).

The Castor Gas storage and Gwynt y Mor projects were carried at EIB own risk for a total project cost of €2,282 million. On top of these two transactions, the project West of Duddon Sands is expected to be signed, at EIB own risk, for a total project cost of €409 million. Therefore the total value for the projects supported at EIB own risk amount to €2,691 million.

When aggregating project costs of (i) transactions supported by the EU budget (i.e. €4,270 million) and (ii) transactions supported at the own risk of the EIB (i.e. €2,691 million.), the total amount of the project costs for all beneficiary projects amount to €6,961 million.

The ratio between the expected total projects costs (i.e. €6,961 million) and the EU budgetary support (i.e. €230 million) is 30.3. The overall expected multiplier is far above the expectations which were set between 15 and 20 at the establishment of the initiatives. The table on the next page summarises these results.



## The EU contribution achieved output that was in line with the targets and objectives

### Overview of all PBCE operations signed and expected to be signed

<i>in million €</i>	Status	Date of closing	Policy	Private bond investment	EIB bond investment	Bond size	Other contributions	Project costs	EU contribution	EIB contribution	PBCE size	EU multiplier effect
A11	Signed	Mar 2014	TEN-T	433	145	578	80	658	n.m.	n.m.	115	n.m.
A7	Signed	Aug 2014	TEN-T	358	71	429	343	773	n.m.	n.m.	85	n.m.
Port of Calais	Signed	July 2015	TEN-T	504	-	504	359	863	n.m.	n.m.	50	n.m.
TEN-T, achieved				1,295	216	1,511	782	2,293	200	50	250	n.m.
TEN-E, i.e. Greater Gabbard	Signed	Nov 2013	TEN-E	365	-	365	55	420	10	45	55	n.m.
ICT, i.e. Axione	Signed	July 2014	ICT	189	-	189	68	257	20	18	38	n.m.
<b>PBCE signed using EU support</b>				<b>1,849</b>	<b>216</b>	<b>2,065</b>	<b>905</b>	<b>2,970</b>	<b>230</b>	<b>113</b>	<b>343</b>	<b>12.9</b>
N25 New Ross Bypass	Expected	n.a.	TEN-T	n.a.	n.a.	n.a.	n.a.	250	n.m.	30	30	n.m.
Passante di Mestre	Expected	n.a.	TEN-T	n.a.	n.a.	n.a.	n.a.	1,050	n.m.	170	170	n.m.
<b>Expected PBCE using EU support</b>				<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>1,300</b>	<b>n.m.</b>	<b>200</b>	<b>200</b>	<b>n.m.</b>
<b>(1) All PBCE using EU support</b>				<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>4,270</b>	<b>230</b>	<b>313</b>	<b>543</b>	<b>18.6</b>
Castor Gas Storage	Signed	Jun 2013	TEN-E	1,100	300	1,400	363	1,763	n.m.	200	200	n.m.
Gwynt y Mor	Signed	Feb 2015	TEN-E	458	-	458	61	519	n.m.	69	69	n.m.
West of Duddon Sands	Expected	n.a.	TEN-E	347	-	347	62	409	n.m.	52	52	n.m.
<b>(2) All PBCE at EIB own risk</b>				<b>1,905</b>	<b>300</b>	<b>2,205</b>	<b>486</b>	<b>2,691</b>	<b>n.m.</b>	<b>321</b>	<b>321</b>	<b>n.m.</b>
<b>(1)+(2) Overall PBCE transactions</b>				<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>6,961</b>	<b>230</b>	<b>634</b>	<b>864</b>	<b>30.3</b>

Source: Operational report

Remark: The other contributions include equity, grants and other funding necessary to cover the whole project costs

### Key findings

- ▶ The EC allocated a budget of €230 million to support the testing phase of the PBI of which €200 million for the TEN-T sector, €10 million for the TEN-E sector and €20 million for the ICT sector
- ▶ The leverage or multiplier effect has been computed as the ratio between the total projects costs divided by the aggregate amount of the EU contribution
- ▶ At the establishment of the initiative, the expected leverage effect was set between 15 and 20
- ▶ The leverage achieved on the PBCE transactions closed so far with EU budget support equals 12.9
- ▶ The expected leverage of all the PBCE transactions to be closed with EU budget support is 18.6 and is therefore in line with expectations
- ▶ The overall expected leverage, which includes projects at EIB own risk, is 30.3 and is well above expectations



## The EU contribution achieved output that was in line with the targets and objectives

**Question 2.2.: Has the size of the EU contribution allocated to the initiative been sufficient /appropriate to achieve the related policy objectives?**

The PBI pilot phase used the budget of the multi-annual financial framework 2007-2013 for an amount of €230 million. The initiative was set up with the objective to:

- i) Contribute to the development of capital markets as an additional source to finance infrastructure projects in the areas of Trans-European Transport networks (TEN-T), Trans-European Energy Networks (TEN-E), ICT and broadband;
- ii) Help finance priority projects with a clear EU added value.

The pilot phase was intended to deliver 5 to 10 precedent transactions.

Extent to which the level of the EU contribution was sufficient to meet the needs of the targeted projects

Under PBI, the EIB provides eligible infrastructure projects with PBCE in the form of a subordinated loan or subordinated contingent facility. The PBCE does not cover the entire amount of the senior bonds. The maximum size for a single transaction is capped at 20% of the nominal of credit enhanced senior bonds. Going forward, the PBCE exposure can be less than these limits. The table below summarises the PBCE size of each beneficiary project financed with EU funds and the phase in which the support is effective.

**Beneficiary project: PBCE overview**

in million €	Policy	PBCE size	PBCE as a % of project costs	PBCE as a % of bond size	Phase
A11	TEN-T	115	17	20	Construction (20%) Operation (10%)
A7	TEN-T	85	11	20	Construction
Port of Calais	TEN-T	50	6	10	Operation
Greater Gabbard	TEN-E	55	13	15	Operation
Axione	ICT	38	15	20	Operation
<b>Signed PBCE using EU fund</b>		<b>343</b>	<b>12</b>	<b>17</b>	

Source: Operational report, Inspiratia

Depending on the risk assessment, the PBCE cover has been applied on either (i) the construction phase, (ii) the operational phase, or (iii) both. The maximum size of the protection varies between 15% to 20% of the senior bond exposure. When opining about the PBCE ticket size, overall, respondents agreed that the level of the EU contribution was sufficient to meet the needs of the targeted projects.

Moreover, Moody's reported that the credit enhancement improved the default probability and recovery prospects for all the projects rated by the agency (i.e. A11, A7, Greater Gabbard and Axione).<sup>27</sup>

Finally, for two TEN-E projects, i.e. Castor and Gwynt y Mor, the PBCE was fully carried at EIB own risk as the EU amount allocated for TEN-E was fully utilised for Greater Gabbard.

Extent to which the level of the EU contribution was sufficient to contribute to the development of capital markets

The EU contribution targeted the transport, energy and ICT/broadband sectors.

The graph on the next page illustrates the capital market financing in the mentioned sectors. As illustrated, in 2015, no ICT transactions have been financed via bond. The transport is the sector with the largest uptake in terms of bond financing.

During the Pilot, ICT projects funded via a project finance scheme have not been very common overall even with bank financing. In Europe, most ICT/broadband infrastructure used to be historically funded by the balance sheet of telecom providers rather than through project finance.

In France, for the particular case of the broadband sector, this can be explained to some extent when analysing the Axione transaction. The French broadband market is split into regions which launch auctions for the development of the networks. Concessions for individual regions are too small for a bond financing and use therefore corporate facilities. For a company like Axione, it takes time to build up a portfolio of projects that can be refinanced. Refinancing the portfolio opens up the bank credit lines for new auctions. Knowing that the financial market offers

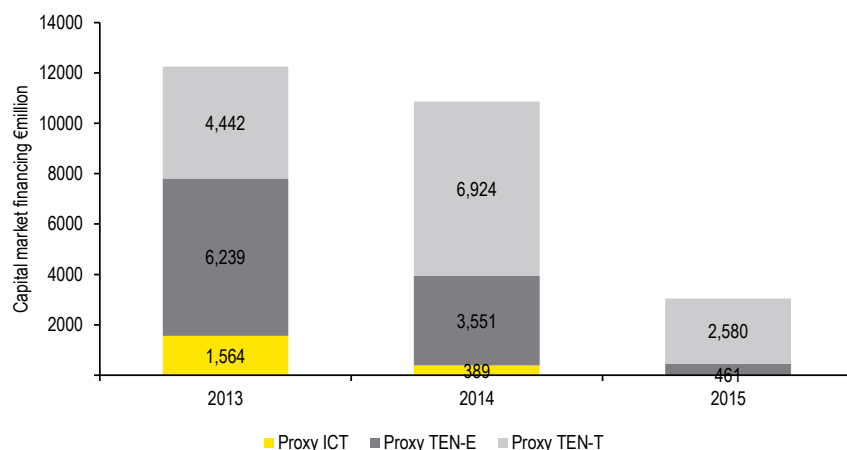
<sup>27</sup> Source: Moody's (2014): Pilot phase of the Project Bond Initiative demonstrate early proof of concept.

## The EU contribution achieved output that was in line with the targets and objectives

several competitive alternatives (including PBI) triggers confidence to deploy more projects. In that sense, PBI has supported awareness for capital market finance but it has not yet resulted in additional new transactions. Moreover, the financial robustness of the big players enabled them to have an easy access to bank financing.<sup>28</sup>

### Capital market financing in TEN-E; TEN-T and ICT/ broadband sectors (proxy)

Source: Infradeals



### Status update of the priority and core network projects under TEN-E and TEN-T respectively

As reported in section 1, during the Pilot, the first priority was to explore the potential benefits of a new financial instrument to develop the debt capital market. All the beneficiary projects met the eligibility criteria settled under the *Cooperation Agreement* between the EC and the EIB. The Port of Calais may be considered as belonging to the core network.

For TEN-E; the EU budget was totally used for Greater Gabbard which was under the old regime part of the defined priority axes.

The completion of priority and core network projects is challenging as they are complex by nature. In order to achieve these projects, we will see in section 4 other considerations should also be taken into account in order to achieve these projects..

### Number of projects supported and expected to be achieved during the Pilot

The pilot phase was intended to deliver 5 to 10 precedent transactions. As per 31 July, seven transactions have been supported. Beside this, three transactions are expected to close by the end of the Pilot. We refer to the previous question for a detailed breakdown of these transactions.

### The CEF and EFSI initiative

The EU has developed other programs over the last years in order to facilitate investment in infrastructure among which the CEF and EFSI.

The CEF established a pool of EU funding to finance projects which fill the missing links in Europe's energy, transport and digital backbone. In addition to grants, the purpose of the CEF is to better mobilise private financing through the use of financial instruments such as guarantees and project bonds. The CEF allocate approximately €30.4 billion to trans-European infrastructure projects until 2020 of which €2.6 billion (8.4%) can be used in the form of a financial instrument.<sup>29</sup>

<sup>28</sup> Major fibre projects have recently been launched in France in the regions of Alsace (Alsace Tres Haut Debit) and Nord-Pas-de-Calais (Syndicat mixte Nord-Pas-De-Calais Numerique).

<sup>29</sup> This amount may however change during the implementation period and the ceiling of 8.4% may be raised to 10% under certain conditions.

## The EU contribution achieved output that was in line with the targets and objectives

The EFSI aims to overcome the current investment gap in the European Union (EU) by mobilising private financing for strategic investments which the market cannot finance alone. By providing €21 billion in initial funding, the European Commission expects the Investment Plan for Europe to mobilise at least €315 billion in additional investment in Europe over the next three years.

### Key findings

- ▶ The number of projects that will be supported by the end of the Pilot is in line with the targets set i.e. 5 to 10 transactions
- ▶ The EU contribution was not sufficient to support all the projects in the Pilot. Two TEN-E projects have been funded at EIB's own risk. Nevertheless, on EU funded projects, the size of the PBCE was sufficient to meet the needs
- ▶ The results of our analysis suggests that EU contribution was sufficient to contribute to the development of capital markets as an additional source to finance infrastructure projects in the areas of TEN-T and TEN-E
- ▶ However, for the ICT and broadband sector, the contribution seems to be limited. When comparing capital markets financing with the other targeted sectors, the ICT and broadband sector lag behind. This failure might be related to the sector preference for corporate financing schemes and to the small size of the individual projects which require to be pooled together in order to reach a critical size
- ▶ The achievement of priority and core network projects is challenging as they are complex by nature. The Port of Calais may be considered as belonging to the core network. For TEN-E, the EU budget was totally used for Greater Gabbard which was under the old regime part of the defined priority axes

## The EU contribution achieved output that was in line with the targets and objectives

### Question 2.3.: To what extent are the PBI instrument and the resulting bonds competitive with other available sources of financing?

The PBI does not necessarily limit itself to upgrade the rating of a transaction to increase available funding and encourage debt capital markets (questions 1.2 and 1.3). Credit enhancement can also be useful to lower the cost of financing and thereby enhancing value for money.

#### Price competitiveness of PBI

The following table provides an assessment of the price competitiveness of the PBI for the beneficiary projects. The information in the table has been based on EY interviews and desk research.

#### Assessment of price competitiveness of the beneficiary projects

Project	Assessment of price competitiveness
Castor	The minority of the stakeholders involved in the Castor deal that do believe that the project could have been refinanced with bank financing, underline that it would be substantially more expensive in addition to not being able to cover the rest of the project period and therefore would have required an additional refinancing moment.
Greater Gabbard	Financing cost are ca. 30-35bps more competitive than bank financing (incl. 50% EIB loan) on a previous OFTO project.
A11	<p>The procurement process required each of the four bidders to make two separate bids; one based on bank financing (of which the NPV scored for 75%) and one on bond financing (of which the NPV scored for 25%), which could either include a bank or the PBCE.</p> <p>Bank financing needed to be fully committed at the final bid. Bond financing was uncommitted. Pricing of the bond at final bid was based on a prescribed matrix with tenor and credit rating. So it cannot be ascertained how the market would have priced the bond at that time.</p> <p>For the winning consortium the bond solution with PBCE was at final offer stage not the cheapest finance solution. Their bank financing solution resulted in the lowest NPV.</p> <p>After selection of the preferred bidder the bond solution was further optimised. Together with other conditions that were duplicated from a bank deal the consortium introduced quarterly drawdowns providing significant cost reductions through the mitigation of negative carry. The winning consortium increased their certainty to acquire the anticipated rating and finally the PBCE arrangement fee was reduced. All these efforts resulted in the bond solution to prevail over the bank solution. Finally, at financial close the market priced the bonds more competitively than was assumed in the matrix used for pricing of the financial offers.</p>
Axione	<p>The project includes a re-financing of part of Axione's short-term debt and financing of a new investment programme. Although the primary objective was to achieve long-term debt, the pricing achieved on the deal was more competitive than the bank debt it replaced (in the range of 40 bps).</p> <p>Yet, according to one respondent, while the margins on the bank debt were lower, due to the relative small size of the deal, the overall costs (including fees, advisory costs, etc.) resulted in the PBCE + bond option to be slightly higher. However, other respondents confirmed that the PBCE solution provided cheaper economic cost. In any case, besides pricing consideration, sponsors decided to opt for the bond route in order to: (i) make the asset class known to investors, (ii) try to decrease the dominance of the banks, (iii) brand Axione to the market for future (2<sup>nd</sup> generation) auctions and (iv) allow Axione to free up its bank facilities. So sponsors actually embraced the PBI objective of opening up new sources of finance for the asset class.</p>
A7	For the A7, there was sufficient private financing to meet the investment needs but at more expensive terms. The difference was substantial, about 30/40 basis points due to the PBCE rating uplift. Eventually the PBCE solution prevailed over a bank solution (with EIB support) and a bond solution without PBCE. According to stakeholders involved in the deal, the PBCE fee was very attractively priced. The involvement of the EIB on every finance solution encouraged pricing tension within EIB (bank vs. bond).
Gwynt y Mor	The pricing is lower than the Greater Gabbard OFTO bond (110 bps vs. 125 bps). According to IJGlobal Gwynt y Mor's lower coupon reflects that (1) the reduction in the underlying benchmark gilt yields, (2) the

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market's increased familiarity with the OFTO sector and (3) Sterling has been under-supported and there's an appetite for this kind of stable, regulated asset.

Port of Calais We understand that the rating uplift for the 10% unfunded PBCE during the first 18 years of operation was worth one notch – because there was already sufficient demand risk protection from a government guarantee and a significant reserve facility – and bond pricing improved (< 10bps). The PBCE covers the first 18 years of the operational period because during this period debt repayments are higher which exposes the bond holder to higher risk. Given the long period of the contract we assume that the bonds were more competitive than bank financing because of available tenor.<sup>30</sup>

In our 2013-2014 mid-term evaluation<sup>31</sup> the feedback from interviewees on the PBCE was that it was very interesting in terms of financing cost. When asked about the magnitude of the difference, the majority of those who considered there were other financing alternatives for the pilot phase projects said that the financing would be much more expensive (measured as a difference of more than 50bps on the all-in interest rate) if the PBCE had not been involved. The market has lowered its expectations in that sense.<sup>32</sup> It should be noted that this time the respondents were asked to relate their questions to the projects of the pilot phase. We refer to section 3.1 for future expectations of the PBCE's competitiveness.

As illustrated in the graph below, the loan margins have shown a decline since the start of PBI in November 2012. In stable, creditworthy countries increased competition is pressuring both banks and institutional lenders to accept margins below 150 bps and even coming close to 100 bps. Due to lower margins the differences in margin pricing between adjacent credit rating classes are decreasing. As a result it will become more difficult for PBCE to remain competitive with other sources of financing assuming different sources of funding available. Commercial lenders are racing each other to the bottom. The loan product of EIB (up to a maximum of 50% of senior debt) is also becoming increasingly competitive. So ultimately, the pricing of the PBCE has to come down as well in order to remain cost competitive. According to many interviewees the PBCE pricing has come down during the procurement processes of various projects. Yet, we cannot assess how much of the competitiveness of the PBCE finance solution was derived from the PBCE arrangement fee pricing and how much competitiveness was increased by reduced margins on the bonds following the credit enhancement. One interviewee commented on the pricing of the product.

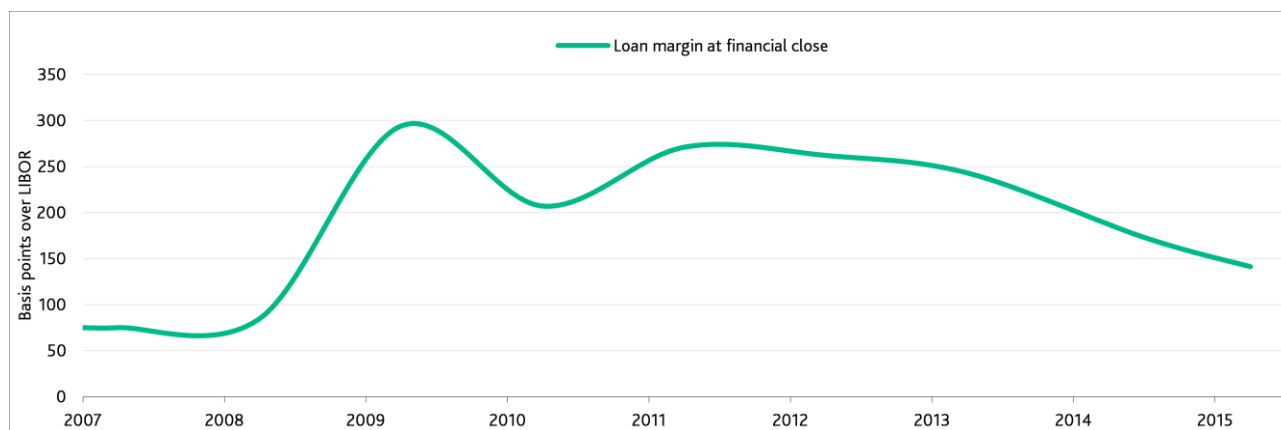
*'A balance needs to be found between the cost of enhancement and the cost incurred via the decreased coupon. It would be interesting to see what pricing third parties would offer for the PBCE product and take over the subordinate position from EIB. It would also provide EIB the possibility to recycle the funds allocated to the financial instruments'*

Currently the market does not have a very clear view on the pricing of PBCE. In order to improve transparency in pricing, other entities may be involved to offer PBCE. While this role is unsuitable for the private sector, National

**Loan margins at financial close for European Public Private Partnership (PPP) infrastructure projects have fallen since peaking in 2009 (Loan margins, 12-month moving average)**

Source: A wave of capital for infrastructure, but mismatched with investment opportunities, Moody's, May 2015

Development Banks could come into play. They could team up with EIB. This could potentially increase the applicability of the instrument, but also help to obtain an additional external pricing assessment.



<sup>30</sup> Further reference is made to section 1.3 for further details.

<sup>31</sup> Source: EY : Ad-hoc audit of the pilot phase of the Europe 2020 Project Bond Initiative, June 2014

<sup>32</sup> Further reference is made to section 1.2 for further details.

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### Qualitative aspects of PBI

We have asked respondents to indicate their satisfaction with specific qualitative elements of the PBCE product in comparison with other funding structures in general. Results as illustrated in the diagram on the next page display a positive to very positive view on PBCE. The items mainly valued by stakeholders are the credit enhancement feature and the ticket size, whereas the majority were neutral on the condition precedent. In addition to the instrument's merits the subordinated position of EIB compels them to negotiate better conditions from which the bond investors will benefit as well.

When asked about the pricing of the product the response is twofold. The product proved cost effective in terms of overall project costs (as is shown in the diagram on the next page). However, especially in the pilot phase, the structuring of the product did result in extra legal fees and was more time consuming, but forward looking these transaction costs should be similar to other EIB products. The most important items that result in additional fees due to higher complexity are:

- Intercreditor complexity (relation with other financing documents)
- Mechanism for drawing (incl. rebalancing) although the mechanism has been simplified. It is easier now to understand when the amount can be drawn

The complexity of the product was not addressed separately in the questionnaire, but was mentioned frequently by respondents. Even now that PBCE has become a more or less standardised product, both the senior loan product of EIB and the unenhanced bonds are perceived as less complex products. This may incline equity investors to prefer the senior loan facility when costs for both products would be the same (although the sponsors on Axione preferred the PBCE solution for different reasons). One respondent stated in relation to the complexity of the product:

*'When a PBCE + bond and plain bank solutions are close, equity investors prefer the bank solution because of lower transaction risk, better refinancing potential and the avoidance of the rebalancing mechanism in the PBCE solution.'*

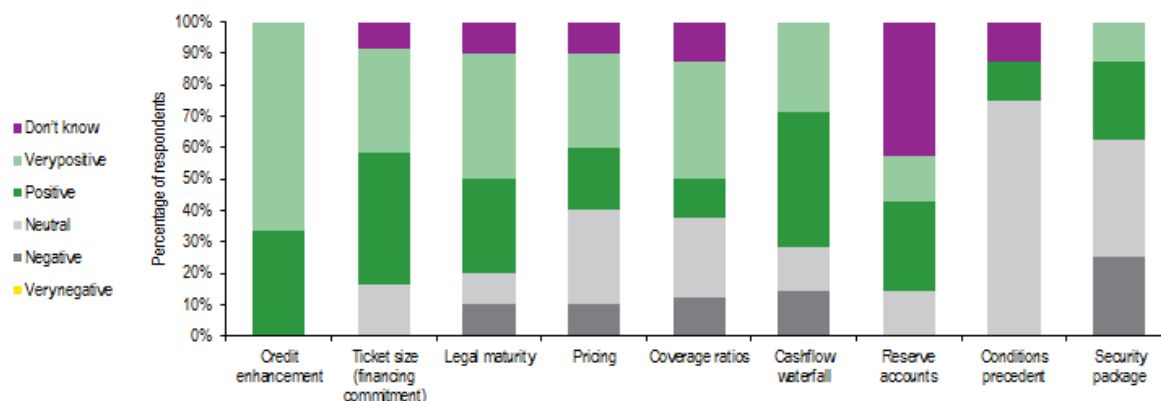
The flexible maturity of the instrument is appreciated plus the disciplinary effect that EIB has on the structure (e.g. on A11 the EIB wanted a 2 year tail on the PBCE during the tender). Respondents appreciate the flexibility that EIB has shown in the automatic rebalancing and the level of its triggers (a.o. coverage ratios).

The security package required for a bond financing with PBCE support is higher than for a bank loan which is appreciated by bond investors and equity sponsors but puts a higher strain on the industrial partners. According to one of the respondents who scored 'negative' on this aspect EIB should be less strict in setting its rating requirements as it puts too much pressure on contractors.

## The EU contribution achieved output that was in line with the targets and objectives

### Respondents' satisfaction of PBCE in comparison with other funding structures in general

Source: EY analysis



Equity investor	2	2	2	2	2	2	2	2	2
Bond coordinator /Structuring bank	3	3	2	2	1	1	1	2	2
Procuring Authority	2	2	2	2	1	1	1	1	1
Other	5	5	4	4	4	3	3	3	3
<b>Total</b>	<b>12</b>	<b>12</b>	<b>10</b>	<b>10</b>	<b>8</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>8</b>

### Projects that didn't use the PBCE

Next to the 7 projects that have been signed with PBCE we have assessed a set of recent projects that were signed with different financing solutions. We summarise the assessment of these projects in the following list:

#### Projects with EIB Board of Directors approval for PBI

M8 Edinburgh-Glasgow, UK	The bonds, listed on the Luxembourg Stock Exchange, are pre-agreed to be sold to investors. The bonds are rated A- by S&P and do not require further enhancement.
Tangenziale Est Esterna Milano PPP, Italy	<p>This project was approved by the EIB Board of Directors in December 2013 but reached financial close in the same month with a bank solution.</p> <p>The EIB and CDP provided a large part of the loan, €475 million and €350 million respectively. €375 million was provided by nine commercial banks. The bank deal has a tenor for 8 years so the project is faced with refinancing risk.</p> <p>In 2012, the sponsors considered using project bonds to secure the long term finance for the project due to a shortage of interest in the project from commercial banks, but this route was abandoned. This project clearly was a bridge too far for bond investors.</p>
R1, Slovakia	This project was very robustly structured and project bonds were rated BBB+ by S&P. The PBCE was considered for this project and would have resulted in a 1 notch uplift. But PBCE would have increased overall costs, because investors did not lower their costs with the credit enhancement and already were very comfortable with presence of the EBRD and KfW. Presence of these institutions gave similar comfort as EIB's presence has on smaller investors.
Offshore project	<p>A European Transmission System Operator has been involved with EIB to investigate whether a structure such as PBCE instrument could be applied to an offshore project. They explored possibilities of creating a separate corporate entity in which to undertake their investments in offshore transmission connections with support of PBCE.</p> <p>The TSO has a solid rating and usually finances its business at corporate level. For the offshore project it required several billions so it wanted to seek access to the bond market and therefore investigated the PBCE. However PBCE was only available for project financing of SPV's, while the TSO wanted to incorporate it into a financing structure for a separated corporate entity,</p>

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where the company could recycle the PBCE instrument to undertake new projects, once the initial projects were in operations. It did not succeed in structuring the business case so it could accommodate PBCE.

The TSO would prefer to have a financial instrument that could support equity (instead of debt) of the separated corporate entity during projects' construction phase. This was predominantly because their goal was to attract equity investors into the projects ownership and transfer the projects outside of the domain of TSO rating agency sphere of influence. This proved to be difficult:

- ▶ The TSO would have preferred to sell a majority stake, but regulatory requirements dictate TSOs to construct the connectors and connect the wind parks and keep the operational maintenance obligation. This is different from the way the Ofo projects in the UK are structured. Therefore handing over control is not logical when operational responsibility remains with the TSO.
- ▶ Secondly, selling their stakes would not free the TSO from this obligation and therefore rating agencies argued that selling its stakes would not enable the TSO to deconsolidate its debt obligations for the assets for rating purposes and thus would not have a positive effect on its rating.
- ▶ Thirdly, for onshore assets on the electricity grid it is not possible to separate revenue streams (unlike for gas assets) which is needed for project finance structures on an individual basis. Revenue streams are based on the entire assets base of the TSO in that country (interconnectors do on occasion have their own revenue mechanism). The TSO indicated that this restriction for electricity grids applies to all countries in the EU region. This is unfortunate because the investment needs are substantial, but access to project finance is severely impeded (e.g. the TSO has a multi-billion investment agenda including Projects of Common Interest). This has led the TSO to continue to provide debt for its investments through its corporate entity. Fortunately the conditions to finance project on this basis are currently very favourable compared to financing individual projects at SPV level.

### Projects that were not approved by the EIB Board of Directors for use of PBI

Mersey Gateway Bridge, UK	The PBCE was shortly considered for the project by its promoters but it was never eligible because it was not a TEN-T project. Eventually the UK guarantee scheme was preferred. During the tender the project promoters have been in contact with EIB but considered some drawbacks of their involvement (lot of processes which may delay the project; too much interference with deal structuring; lack of reactivity; internal competition (PBCE vs EIB loan).
Autovia de la Plata, Spain	The Spanish authority required a 20% equity buffer in the project which provided substantial protection for investors. This refinancing was three times oversubscribed and had excellent ratios and an aggressive margin (<190 bps). There was no shortage of financing, thus PBCE would have crowded out investors and deprived them from yield upside.
A9 Road PPP and the IJmuiden Locks PPPs, the Netherlands	PBCE has not proven to be cost competitive on all projects. According to interviewees the PBCE was also tested on the A9 Road and the IJmuiden lock PPPs. On these projects the instrument and resulting bonds provided competitive financing against market conditions but appeared to be more expensive than bank debt with EIB lending and therefore were not selected for the final bid by bidding consortia.
Aberdeen Western Peripheral Route (AWPR), UK	The availability based road project – not a TEN-T project and therefore not eligible for PBI – closed in December 2014 including GBP 193.9 million of senior secured private placement bonds. The project's bonds were rated A-. The investment has been made via the Allianz UK Infrastructure Debt Fund and the bonds were subsequently privately placed with UK public and private sector pension funds, EU pension funds and insurance companies and Japanese insurance companies. <sup>33</sup> EIB provided support with a GBP 274.2m bank loan.

<sup>33</sup> Source: Infranews



## The EU contribution achieved output that was in line with the targets and objectives

### Key findings

- ▶ For the projects where other financing options were available (all except for Castor) we can conclude that the PBI solution proved significantly more competitive on A7 and marginally on Axione and Port of Calais
- ▶ For the OFTO's there is no clear-cut comparison since PBI was the only financing option considered although pricing was lower than prior transactions
- ▶ On the A11 where consortia had to submit a bank and a PBCE bond solution, the PBCE bond solution prevailed when deferred drawdowns were introduced and PBCE pricing was reduced
- ▶ We cannot assess how much of the competitiveness of the PBCE finance solution was derived from the PBCE arrangement fee pricing and how much competitiveness was increased by reduced margins on the bonds following the credit enhancement
- ▶ Due to lower margins the differences in margin pricing between adjacent credit rating classes are decreasing. As a result a credit uplift with PBCE will result in lower pricing advantages
- ▶ The projects that we assessed which did not use PBCE chose other financing solutions primarily because it was not competitive in the tender (M8, Dutch projects, AWPR) or not desired by bond investors in case of a refinancing (R1, Autovia de la Plata) or because the project was not eligible (Mersey). For Tangenziale Est Esterna Milano it is unclear whether PBI was seriously tested to enhance the bond solution; and for the Offshore project, PBI proved to be no match because of its corporate character

## The EU contribution achieved output that was in line with the targets and objectives

### Question 2.4.: How does the PBI compare to the other risk-sharing facilities in terms of results at a similar stage of maturity of the instrument?

How does the PBI compare to its predecessor LGTT?

LGTT is the acronym for Loan Guarantee Instrument for Trans-European Transport Network Projects. The LGTT is very much similar to PBI in terms of structure. Both are subordinated tranches provided by EIB (with EU support) to credit enhance infrastructure projects and make them more attractive for senior debt investors. The LGTT is similar to the unfunded PBCE in the sense that it provides a standby liquidity facility up to 20% of senior debt. The differences between the instruments are highlighted in the table below. The LGTT is designated to provide credit enhancement for the banking sector, instead of the bond market and its application is more limited to a specific type of projects in the infrastructure sector

#### Comparison between PBI and LGTT

Risk-sharing instrument	Period	Eligible Sectors	Scope	EU Funds allocated (€)	# of projects financed
PBI	2012–2015	TEN-T, TEN-E, ICT	Enhancing debt capital market financing during construction and entire operational period	230 million	7 with more projects in the pipeline to be signed before end of 2015
LGTT	2008–2014	TEN-T	Enhancing bank loans during first seven years of the operational phase of projects with traffic risk	Initially set at 500 million; Currently 250 million (200 million was reallocated to the PBI and another 50 million to grant funding (1)).	7 of which 5 in the first three years (2)

Source:

(1) [http://www.eib.org/attachments/press/2008-005-fact\\_sheet\\_en.pdf](http://www.eib.org/attachments/press/2008-005-fact_sheet_en.pdf)

(2) Ramboll (2014), ex-post evaluation of the loan guarantee instrument for ten-t projects

#### Take-up rates of PBI versus LGTT in the first three years of operations

The first LGTT deal was closed after more than two years from the start-up of its operations. In the first three years of its operation LGTT (2008 – 2010) facilitated five projects to close. In total during the period 2008-2012, the LGTT has been signed with five motorway projects, one maritime project, and one high speed rail project. The total LGTT amount signed is €517 million. During the financial crisis the application of the LGTT halted because traffic risk projects were no longer procured by authorities and investors become more cautious towards traffic risk.

By comparison, PBI became operational in November 2012 and in less than 3 years it has supported the closing of an equal amount of projects as LGTT has done in the period 2008-2014.

For the LGTT communication and awareness campaigns did take place but stakeholder awareness was relatively low. The PBI campaign has been more successful and appeals to a wider range of projects. There is a high awareness among stakeholders on the PBI. EIB and the EC have been proactive in informing the market about the PBCE instrument PBI is aimed at an investor base that were out of the infrastructure debt market. Therefore it does make sense that campaigning was more intensive compared to LGTT which was aimed at banks that were already in the market to accept traffic risk.

Both its broader applicability and its successful campaigning are likely to have contributed to the higher take-up rate of the PBI compared to LGTT.

#### Comparison of the PBI versus LGTT in terms of achieving policy objectives in the first three years of operations

The overall objectives of the LGTT are to support the completion of the TEN-T network by providing a mezzanine loan guarantee facility from the EIB to enhance the credit rating of senior bank loans and making them less exposed to traffic risk. There are no indications that the LGTT has had an important impact on the realisation of TEN-T priority projects. Due to its narrow scope LGTT only a limited amount of TEN-T projects were eligible for LGTT. Further, due to challenges in its implementation, LGTT probably has had limited effect on stimulating commercial lenders into the development of the TEN-T network.<sup>34</sup> Of the 7 projects only the Tours-Bordeaux High-Speed Rail link was a priority project.

<sup>34</sup> Source : Ramboll: Ex-post evaluation of the loan guarantee instrument for Trans-European Transport Network projects (LGTT), 2014

## The EU contribution achieved output that was in line with the targets and objectives

PBI has been much more successful in encouraging debt capital market financing (see question 1.3) than LGTT was towards the bank market.

*Satisfaction of project stakeholders of PBI compared to other risk sharing facilities*

We have asked the interviewees to rate their satisfaction of the PBI in comparison with other risk sharing facilities. PBI scores better in terms of overall satisfaction against the following risk sharing facilities:

- ▶ LGTT
- ▶ PEBBLE: the Pan European Bank to Bond Loan Equitisation (PEBBLE), a private initiative from ING, was announced in December 2012. PEBBLE is intended to provide project bonds with credit enhancement through the provision of a subordinated cushion during construction and ramp up phase of a project, whilst during this phase the B Lenders, as commercial banks, control the project by responding to waiver and consent requests as controlling creditor.
- ▶ UK Guarantee scheme: a guarantee of scheduled principal and interest for a lender in a UK infrastructure project issued at a market fee. The project company's credit rating is substituted by the UK Government's rating.
- ▶ Monoline insurance: a private insurance company with a high credit rating, like Assured Guarantee, that provides a 100% guarantee and as such simplifying the investment decision and broadening the base of potential investors.

*Sustainability*

A big advantage of the PBCE instrument is that it is perceived to have a high sustainability compared to private instruments. For instance, Assured Guaranty used to have a triple A rating but it has been downgraded to AA. Some investors are afraid that monoline insurers may again encounter economic turmoil and are perceived as uncertain. A downgrade of a monoline would also result in a downgrade of the project bond for which it has provided a credit enhancement. Subsequently this could result in a value adjustment of the bond.

*EU supra-national and cross-jurisdiction character*

A second big advantage of PBCE is that it is deployed by a supra-national and cross-jurisdiction entity and therefore it is not hindered by potential state aid issues compared to Member States. Compliance with State aid regulation must be ensured where investors receive direct or indirect government support from the Member States.

*Credit enhancement*

Both the UK Guarantee scheme and monoline insurers like Assured Guarantee provide a guarantee for 100% of the debt. These instruments take away project risk and replace it with counterparty risk. As such the instruments are different from the PBCE which reduces both project and credit risk to a certain degree. In the current climate where investors are becoming more and more comfortable with project risks, including construction risks, these types of risk sharing facilities lower the yield for bond investors. These instruments are suitable for investors who are in search of extremely low risk. PBCE, with a maximum subordinated tranche of 20%, provides less credit enhancement and leaves more yield uptake for private investors.

*Competitiveness on pricing*

On competitiveness in terms of pricing respondents generally agreed that PBCE is very competitive in comparison with private risk sharing facilities. Private risk sharing facilities generally will not be able to compete with EIB pricing.

*Transparency and deliverability*

For both PEBBLE and a monoline insurance from Assured Guarantee the investors behind the risk sharing facility are not known to the equity sponsors. Therefore it is difficult to assess the credit quality of the investors and therefore the funding risk. Equity sponsors are not in direct contact with the bond investors behind these risk sharing facilities and therefore cannot compare these products and resulting bonds with financing solutions with the same investor base but without the risk sharing facility. These issues are overcome by PBCE for which the instrument is assigned a higher deliverability.

*Size*

Private sector instruments, such as Assured Guaranty's monoline instrument have limited capacity (typically deal size of €100-€300 million investment value) and are focused on investment grade projects, such as availability-based PPPs in north-western Europe. PBCE is available for larger scale projects and sovereign risk (e.g. Castor).

## The EU contribution achieved output that was in line with the targets and objectives

### Key findings

- ▶ LGTT has not yet proven to be able to fully support the achievement of priority projects. PBI has supported a TEN-T core network project and a TEN-E priority project under the old regime
- ▶ The take-up rates in the first three years of operation of both instruments are in favour of PBI. The quicker take up rate rose from the broader applicability of the instrument and better campaigning by EU and EIB representatives
- ▶ Respondents show more satisfaction with the PBI than with other risk sharing facilities. Distinctive advantages mentioned include a higher sustainability, a tailored credit enhancement, a better pricing, the divulgation of the investors in the sharing facility and the extended capacity in term of the project size and sovereign risk.

## PBI has a high future relevance regardless of the competitive climate during the pilot phase

### 3. RELEVANCE

This section discusses the relevance of the PBI defined as the extent to which the PBI pilot phase proved relevant to address the market needs for the financing of priority projects in transport, energy and ICT, and contributed to the development of debt capital market financing of infrastructure projects.

**Question 3.1.: To what extent has this funding been better able to match the requirements of long-term infrastructure projects, for example in terms of product design and maturity of projects?**

*How did the design of the PBCE match with the requirements of long-term infrastructure projects?*

The PBI was designed to help develop priority projects in the EU. These projects have in common that they involve construction risk. PBCE can mitigate key risks such as construction risk, operational risk and market risk. Construction risk was one of the foremost reasons why institutional investors did not want to enter the infrastructure market.

The PBI has two alternatives, a funded and an unfunded guarantee. All projects that have been signed with the PBCE have used the unfunded guarantee. The unfunded guarantee provides protection in the following circumstances:

- ▶ Pre-completion cash shortfall
- ▶ Shortfall in scheduled debt service
- ▶ PBCE rebalancing
- ▶ Payments following acceleration

According to Moody's the instrument is credit positive during the construction phase. Loss given default for senior debtholders will be substantially reduced, and in some potential loss scenarios may be eliminated altogether.<sup>35</sup>

Fitch states in its report on PBI that the unfunded PBCE instrument can improve the construction phase risk profile of a project by providing additional subordinated liquidity to fund cost overruns or to replace a defaulted contractor. This would provide benefits similar to an enhanced performance bonding package.<sup>36</sup>

The monoline insurers, for which the PBI was designated to be an alternative, provide a 100% cover in case of a default. The PBI covers only up to 20% of the senior debt. This threshold corresponds to the average Loss Given Default (LGD) for project finance bank loans. When a project finance senior debt loan defaults, the lenders ultimately suffer no economic loss almost two thirds of the time. Overall, the ultimate recovery rate on the defaulted bank loans averaged 80%.<sup>37</sup> Consequently the 20% recovery from the PBI, significantly reduces the LGD for investors, and corresponds to the level of guarantee required by the investors.

*Market need for PBI amidst the current surplus of liquidity*

Since the crisis and the launch of the PBI, there has been substantive change in the macroeconomic environment. The low interest rates environment, in stable European countries, has had a significant impact on the behaviour of debt providers and banks. According to Moody's there is substantial long-term debt capacity available from banks and institutional investors to finance well-structured infrastructure projects located in creditworthy, stable economies. However, access to long-term finance remains constrained where projects are located in less creditworthy countries, or face significant or speculative risks that are difficult for the private sector to quantify and mitigate.<sup>38</sup>

A report based on a survey conducted among 100 senior investment officers indicates that a rating of BBB or BBB+ could be sufficient to attract bond investors. Parenthetically, BBB is the rating at which a large part of project bonds were concentrated in the period 2006-2010.

Investors generally only have a small budget for below BBB- (speculative grade) and this budget should also stay available for potential future distressed projects. So instead of the availability based PPPs in stable markets which have been targeted so far with the PBI, the future use for the PBCE instrument is expected to be in sub-investment grade projects, for example:

- ▶ greenfield projects for toll roads and those involving volume risk

<sup>35</sup> Source : Moody's (2011), Europe 2020 Project Bond Initiative

<sup>36</sup> Source : Fitch (2012), EIB Project Bond Credit Enhancement Proposal

<sup>37</sup> Source : Moody's (2013), Default and Recovery Rates for Project Finance Bank Loans, 1983–2011

<sup>38</sup> Source : Moody's (2015), A wave of capital for infrastructure, but mismatched with investment opportunities

## PBI has a high future relevance regardless of the competitive climate during the pilot phase

- ▶ complex technology driven projects such as off-shore wind projects
- ▶ countries with lower sovereign ratings and less developed regulatory procurement environments (southern and eastern Europe)
- ▶ weaker contractors

Nonetheless, one of the respondents, a debt fund manager, still found the PBCE instrument useful in stable regulatory environments, e.g. the Netherlands. Due to the increasing competition amongst debt providers, sponsors are able to structure deals overly aggressively. For these robust projects, structured too aggressively, a credit enhancement may be required for bond investors. However, such possibility is excluded in the PBI case: from an EU perspective this would be an unpermitted use of its funds as there is no case of market failure or a sub-optimal investment situation.

While investors' appetite is increasing lower investment grade projects, the question is whether that is because of their search for yield, or because they genuinely are better equipped to assess, price and manage the associated risks. In that sense it would be interesting to see how investors will behave when the yields in other asset classes will increase and compete with the infrastructure asset class. Several respondents, both from the public and private sector, stress that the PBI should be seen as a product that is future proof and should remain available also for times when liquidity for the infrastructure sector becomes more scarce again.

### *Potential hurdles for development of debt capital market financing of infrastructure projects in eastern and southern Europe*

The PBCE instrument has proven on Castor to be able to pierce through sovereign rating and as such pave the way for bond investors. But mitigating sovereign risk is not the only hurdle to take. Public bond financing has been less prevalent in countries for a variety of reasons:<sup>39</sup>

- ▶ lack of a deep capital market, resulting in illiquidity in the asset;
- ▶ lack of a large private pension system, resulting in insufficient demand for the asset;
- ▶ insufficient knowledge of the bond market on the part of both the public sector and private sponsors leading to the perception that the bond execution is 'difficult'; and
- ▶ a strong local banking market willing to maintain market share through aggressive pricing and terms

During our interviews we received more feedback from investors on potential hurdles:

- ▶ some investors from non-euro countries are restricted and they would welcome a product to cover currency risk. In addition to regular currency risk, following the Greek crisis, investors may be cautious to enter countries where a Euro exit is not inconceivable.

The PBCE instrument is not designed to overcome all of these barriers. The instrument is designed to credit enhance the debt. But when there are other issues, where credit risk is not the only barrier for investors to step in, additional measures may be required.

### Key findings

- ▶ PBI was a very relevant response to market needs at the time of its inception as it mitigates the construction risks which were one of the foremost reasons why institutional investors did not enter the market
- ▶ The overall structural design of the instrument, specifically the unfunded guarantee, served the needs of bond investors for greenfield projects particularly well
- ▶ Due to changes in the macro-economic environment the market's need for the instrument has been reduced to specific geographic areas and project types. In particular, the relevance of the PBCE instrument has been challenged by the growing appetite of the investors and the acquired experience of the institutional investors
- ▶ The PBCE is nonetheless a tool that will remain relevant for future use and then it should be directly available in the face of liquidity challenges on the spot
- ▶ In the less creditworthy countries, it remains to be seen how much the instrument can help to develop capital markets and realize projects of high value added

<sup>39</sup> Source : Epec (2010), Capital markets in PPP financing, EIB, Luxembourg

## PBI has a high future relevance regardless of the competitive climate during the pilot phase

### Question 3.2.: Has the EU involvement in both reputational and budgetary terms increased the credibility of the PBI vis-à-vis investors?

Respondents acknowledge that, prior to the launch of PBI in 2012, EU involvement as kick-starter of the initiative was of great importance for PBI's credibility and development. The support of EU policy makers was fundamental and EIB would not have been able to develop it on their own.

During the implementation of the pilot phase, the PBCE has become a generic instrument, but its applicability and deployment depends heavily on national governments' willingness to apply the instrument. EU involvement remains important to campaign the instrument. The market may consider the PBI unnecessary because it can finance the project without enhancement. Yet, bidding consortia cannot ignore PBCE when it is offered by EIB because of its attractive pricing.

On an individual project level, once the procurement phase has started, the EU involvement in terms of reputation is less relevant. During the procurement phase the involvement of EIB is more important. EIB's involvement in terms of reputation is especially relevant for small investors and investors new to the sector. It is not only EIB's triple A rating and the stamp of the rating agencies, but also EIB's involvement that provides comfort as these projects need to meet EIB's eligibility criteria. For example, on Castor, ca. four out of five investors were from small to medium size.

Post procurement, if a project is encountered with a distressed situation and is faced with execution, then EU (and EIB) involvement will become more relevant because both organisations can speak with procuring authorities on a different level than the private sector.

Nevertheless, in some cases, the EU involvement during the procurement phase was seen as a risk by certain private stakeholders. On certain projects, EIB was required to request approval to the EC for certain aspects in the financing structure that were not foreseen or allowed in the Cooperation Agreement that EIB and EC signed. Amendments were needed to improve the terms of the cooperation agreement and to account for a wider applicability of credit enhancement. These extra approvals did not only lead to additional processes, in the eyes of investors, but it also created increased deliverability risk because EU could have obstructed the approval for these measures. For instance EIB needed separate consent from the EU for a.o.:

- ▶ including the short term bank facility under the PBI protection on the A7
- ▶ including hedge providers under the PBI protection on the OFTO's

In budgetary terms the EU involvement has been less relevant to increase the credibility of the PBI. Investors are generally not interested in which organisations are providing funds for the PBCE instrument given the AAA rating of EIB, for them this is behind the scenes.

*'It's outside our scope, which is good! The political support for a financial instrument should not affect the market's appetite for it'*

#### Key findings

- ▶ EU involvement is primarily appreciated for initiating PBI and for campaigning it prior to the launch of projects
- ▶ During the procurement phase of a project, the EIB involvement is seen as more important. Separate Commission approvals should be avoided as much as possible to ensure a smooth planning and delivery of a PBCE solution.
- ▶ In budgetary terms, the EU involvement is less relevant in terms of credibility. Investors are generally not interested in which organizations are providing funds for the PBCE instrument given the AAA rating of EIB

## PBI has a high future relevance regardless of the competitive climate during the pilot phase

### Question 3.3.: Has the funding been a relevant response to the achievement of related policy objectives?

The PBCE aims to leverage existing resources for the realisation of priority projects. Under the PBI, the risk-sharing between the EC and the EIB follows a portfolio First Loss Piece (FLP) model. In this model, the EC absorbs the first losses on the lending portfolio up to a predetermined percentage. The percentage is typically set at just above the historical average loss, which can be modelled from previous lending performance of the financial partner (in this case the EIB) in the sectors.

The 'first-loss' principle has been applied in PBI by dividing the portfolio into two tranches: the Portfolio first loss piece (PFLP) and the 'Residual Risk Tranche' (RRT). The PFLP is the most risky tranche. In case of a loan default it is split between the EU budget and the EIB, with the former retaining 95 % of the PFLP, and the EIB 5 %. The PFLP is set at 30 % and in case of default the EU budget will be exposed up to 28.5 % of the global portfolio value. In practice there is a low probability that the RRT will be touched as the PFLP should normally be able to absorb the losses.<sup>40</sup>

As 'first losses' are more likely to occur than losses above a specified level, the multiplier effect of EU budgetary funds is optimised as it provides the most efficient guarantee in terms of total guarantee liability versus size of portfolio.<sup>41</sup> Therefore the funding is relevant for the development of a capital market because it aims to minimise crowding out investors. Secondly the limited enhancement requires investors to understand the asset class as the instrument does not replace project risk entirely with counterparty risk (in comparison with monoline insurance).

In our previous report we already commented on the possible synergies that could be achieved between the separate EU budgets based on Modern Portfolio Theory. Instead of having the EU resources allocated to the three different sectors, potential diversification benefits might be achieved by merging the individual first-loss piece contributions in order to pool the risks of different projects. This pooling of risks will allow for better diversification which would result in more leverage with less resources. This reduction in volatility and in the risk of losses might enable the EU to set aside a lower provision for the FLP by obtaining a higher leverage from its resources.

Merging EU budgets for the two TEN and the ICT sectors is not the only way to optimise the PBCE portfolio of projects under CEF and EFSI. Adding low risk projects to the portfolio lowers overall portfolio volatility. Implementing PBCE on low risk availability based road schemes in north-western Europe has enabled the establishment of a strong portfolio of projects. This creates the basis on which EIB and EU can engage priority projects which are by their nature more complex and have a higher risk profile. This theory lays the foundation for the relevance of the EU funding in relation to the policy objective to achieve priority projects.

Furthermore, the PBCE allows revolving the funds. For instance, the funds absorbed by the A7 in Germany will become available once construction is completed and then can be recycled and deployed to new projects.

Under CEF however the eligibility criteria are set more strictly than for PBI.<sup>42</sup> There will be less (to none) low risk projects in the set of priority projects. So while it makes sense to start with priority projects that are rated higher on the credit curve, in order to obtain an acceptable level of risk for EIB, the EU may need to increase its first-loss piece contribution when it will enter emerging markets outside north-western Europe.

Whilst we conclude that the funding is relevant to achieve the policy objectives, we do want to make one marginal comment with respect to the instruments relevance. Therefore we refer to recent OECD research:<sup>43</sup>

*'Empirical evidence indicates that financial public support is not the most relevant factor investors look at when deciding to allocate resources to infrastructure in a given country. More important factors are a clear institutional framework, transparent bidding and awarding procedures, a robust rule of law, and the absence of political interference. Incidentally, higher public intervention with financial support typically triggers a higher probability of political interference in project management and of contract renegotiation, something that private investors are not comfortable with.'*

<sup>40</sup> Source: EU (2015): OPINION No 4/2015

<sup>41</sup> Source : EY (2014), Interim report Ad-hoc audit of the pilot phase of the Europe 2020 Project Bond Initiative

<sup>42</sup> In regulation (EU) No 1316/2013 which establishes the (CEF) article 3 states: 'The CEF shall enable projects of common interest [...]. In particular, the CEF shall support the implementation of those projects of common interest which aim at the development and construction of new infrastructures and services, or at the upgrading of existing infrastructures and services [...]. The CEF shall also contribute to supporting projects with a European added value and significant societal benefits which do not receive adequate financing from the market.'

<sup>43</sup> Source : OECD (2014) PRIVATE FINANCING AND GOVERNMENT SUPPORT TO PROMOTE LONG-TERM INVESTMENTS IN INFRASTRUCTURE



## PBI has a high future relevance regardless of the competitive climate during the pilot phase

The importance of other factors has been confirmed during our interviews and we will discuss this shortly in section 4 on EU added value.

### Key findings

- ▶ The EU contribution is relevant in terms of developing a capital market for infrastructure projects. The portfolio theory on the basis of which the EU first loss piece has been structured, provides the most efficient use of guarantees compared against the size of the portfolio and minimizes potential crowding out of investors
- ▶ The EU contribution also allowed EIB to engage into priority projects with higher risk profiles. The volatility of the priority or core network projects portfolio is reduced by its diversification

## PBI has a high future relevance regardless of the competitive climate during the pilot phase

### Question 3.4.a.: Would other forms of credit enhancement or insurance better correspond to market needs?

We have already addressed some other forms of credit enhancement under question 2.4. and concluded that PBI was preferred over these instruments. When asked if they were aware of other forms of credit enhancement that could better respond to market needs, none of the interviewees responded with a better alternative. In addition to the instruments mentioned under 2.4 some referred to instruments that are no longer in use or no longer cater to current market needs:

- ▶ Hadrian's wall (no longer available)
- ▶ Market funded subordinated debt. Interviewees stated that they would not value private sector subordinated debt the same as PBCE. The institution's AAA rating, its political influence and its due diligence capacities are of great importance to investors.
- ▶ EIB used to provide construction loans for which the credit risk was guaranteed by commercial banks. This allowed banks to involve their distinct credit assessment capabilities while liquidity was provided by EIB. Post construction, once certain criteria were met, the guarantee was released and EIB took the operational risk. This type of instrument however does not provide a solution for capital markets as pension funds are often not rated.

### Question 3.4.b.: How, if necessary, could the PBI solution be made more attractive?

The PBCE instrument is well structured and fairly standardised. The instrument will continue to evolve though since every project has its specific needs and may require incremental adjustments (e.g. percentage of protection, drawing mechanism and voting rights). The following elements are mentioned specifically as they address more structural elements of the instrument.

#### *Reconsider on a case by case basis the added value of the rebalancing mechanism*

Generally the various stakeholders think that the allocation of risk (between equity sponsor, EIB and bond investor) is well balanced, with the exception for the rebalancing mechanism that is highly unpopular amongst equity sponsors. Upon the occurrence of the PBCE Rebalancing Event<sup>44</sup>, 100% of the available amounts under the Letter of Credit will be drawn and used for a (partial) redemption of the senior bonds. Following a rebalancing, EIB shall receive 100% of the available cash-flow after the service of scheduled principal and interest amounts. For an equity sponsor this means that following a rebalancing (with PBCE cover for 20% of senior bonds) the cash sweep will prevent equity distributions for a period of approximately 10 years. Such a relatively long 'dividend holiday' takes away sponsor's incentive to deploy its experience and resources to restore the project. In these situations there is a possibility that sponsors would prefer to relinquish the contract.

The rebalancing clause led the A11 consortia to decide to reduce the PBCE to respectively 10% for the operational phase. Subsequently this required an increase to the security package in order to maintain the credit rating that needed to be obtained for the construction phase. For instance on the A11, a €658 million project, the consortium had to set a bank guarantee of approximately €100 million and a 100% liability cap on top of the €116 million PBCE.

The rebalancing trigger found its origin in the LGTT which credit enhanced projects with volume risk. Interviewees offered the following important considerations with respect to rebalancing:

- ▶ Projects with traffic risk historically had longer contract tenors than current availability based PPPs. If the PBCE is drawn following a PBCE rebalancing event, because of the longer contract period, a traffic risk project is better able to absorb the impact on shareholder return. Projects should have sufficient size / contract duration to accommodate the inclusion of a subordinated debt tranche from a sponsor perspective. In contrast to the A11 and A7, the Port of Calais (50 year concession) is a good example where sponsors welcomed the PBCE for the operational phase because it provides enhancement without putting a significant part of the shareholder return at stake.
- ▶ Deleveraging a project by way of a mandatory redemption of the bonds through a rebalancing trigger is less apparent for availability based schemes. On availability based schemes a catastrophic failure which stops payments requires different enhancement (triggers) than diminishing income risk on toll roads.

<sup>44</sup> Indicative term sheet for the unfunded PBCE

## PBI has a high future relevance regardless of the competitive climate during the pilot phase

- ▶ Bond investors typically do not appreciate an early redemption of their principal. Therefore an automatic trigger may not always be in their interest. PBCE should much more focus on debt service instead of prepayments in term of its design.

### Size

Especially for the less creditworthy countries and projects within higher risk categories respondents advised to increase the maximum amount of subordinated debt as a percentage of the total amount of the senior debt issued. The EU has already catered for this potential additional enhancement required and increased the maximum amount to 30% in the CEF regulation (1316/2013). It is untested whether this increase of the maximum amount will be able to enhance projects in the double B rating to an investment grade.

### Payment of the PBCE Letter of Credit fee

The PBCE Letter of Credit fee to EIB has to be paid upfront at the start of the guaranteed period (e.g. start of construction). This early payment has a significant effect on the net present value (NPV) calculation, which is the evaluation criterion for infrastructure PPPs in Europe. In that sense the product could have been tailored more cohesively to procurement & evaluation criteria. A phased payment of the Letter of Credit fee would make it more attractive in NPV terms and it would make more sense as the credit risk increases during the construction period. Usually standard bank Letter of Credit fees are also payable on a periodical basis based on the amount outstanding.

### Credit enhancement for bank loans

In the future a rise in interest rates and maybe other developments can impact investors' appetite for infrastructure assets. The market may then rely more heavily on bank loans again. Respondents suggested making the instrument more 'open source' and make it eligible for bank debt in addition to project bonds. PBCE would then replace LGTT. Compared with the narrow application of LGTT the PBCE could be utilised to a much wider range of projects. To accommodate bank debt, the EIB should facilitate refinancing by preventing swap breakage costs. The EIB acting as a swap counterparty can keep the swap intact in case of a refinancing.

### Key findings

- ▶ PBCE is considered as the credit enhancement instrument that best serves current market needs
- ▶ The documentation of the PBCE has been fairly standardized and is considered balanced in terms of risk allocation except for the rebalancing mechanism
- ▶ Nonetheless, the instrument will continue to evolve since every project has its specific needs and may require incremental adjustments (e.g. use of rebalancing, drawing mechanism and voting rights)
- ▶ To make the instrument more competitive and aligned with procurement evaluation criteria the timing of fee payments can be optimized (spread over time)
- ▶ In the future the applicability of PBCE could be broadened to cover bank debt as well, as is the case for LGTT

## Several areas of improvement have been identified in order to increase the EU added value

### 4 ADDED VALUE AND ADDITIONALITY

#### Question 4.1.a: What is the EU added value of the PBI to the TEN-T, TEN-E and ICT and broadband projects?

In 2010, in order to tackle structural weaknesses in Europe's economy, the EU and its MS launched a strategy for sustainable growth for the coming decade: the Europe 2020 strategy. The strategy deals both with short-term challenges linked to the crisis and with the need for structural reforms through growth-enhancing measures needed to make Europe's economy fit for the future. Initiatives launched to boost infrastructure, including PBI, have been set up in that context.

The EU added value is the value resulting from an EU intervention which is additional to the value that would have been otherwise created by isolated action. It reflects broader European relevance and significance of the action with a view to presenting models and mechanisms which can be applied EU widely.

EU added value is an important criterion to justify spending at EU level. In the context of this section, it refers to the extent to which the EU supports to PBI added value to the initiative.

We note that the Cooperation Agreement signed between the EC and EIB also refers to the EU added-value.

The EU contribution in the risk-sharing mechanism has been essential

The EU was the initiator of the PBI. One respondent noted in this respect the following: *'Without the EU, EIB has no incentive to support bonds. EU contribution is essential in that sense.'*

As explained in precedent sections, under the risk-sharing mechanism, the EU and EIB share the credit risks and associated revenues of each portfolio. For EIB, this structure has been essential to offer PBCE that absorbs higher risk while conserving the AAA bank's rating. The risk-sharing arrangement between the EC and EIB has served to develop the initiative and allowed EIB to target riskier, larger transactions and to widen the investor base.

Stakeholders reported elements where the EU PBI adds value

As compared to the other forms of instruments and long-term debt financing, stakeholders reported that the EU adds value through its support of PBI for projects characterised with the following properties:

- ▶ Non-investment grade projects;
- ▶ Projects with revenue risk
- ▶ Projects exposed to sovereign risks;
- ▶ Large infrastructure projects (greater than €300 million);
- ▶ Projects using complex technologies;
- ▶ Projects with construction risk, i.e. greenfield;
- ▶ Cross-border projects.

Moreover, some respondents mentioned that the EU/EIB involvement helped in widening the investor base for capital market debt. (including the attraction of smaller investors that lack resources and rely on EIB's involvement and due diligence). They also highlighted that the PBCE has the advantage of being distributed by a supranational entity and can be deployed throughout Europe.

## Several areas of improvement have been identified in order to increase the EU added value

**Question 4.1.b: To what extent and by which means can the EU added value of the instruments be maximised?**

Respondents reported 5 primary obstacles to realise investments in European infrastructure projects

The future value of PBI is increased when projects are procured and structured properly in an investor friendly regulatory environment. Taking away obstacles for infrastructure development will increase the pool of projects that meet the eligibility criteria for PBI support.

When opining on today obstacles to realise investments in European infrastructure projects, the majority of interviewees outlined the fact that the underlying problem does not lie on the demand side but rather on the supply side i.e. the lack of projects in the pipeline. It should be noted that at the time of the launch of the initiative, this was not the main obstacle. When the initiative was launched, infrastructure projects faced difficulties in gaining access to long-term private finance or public funding.

The lack of a pipeline is a symptom with underlying barriers. Respondents reported the following 5 primary barriers as illustrated in the above diagram:

- 1 Lack of national and local governments' support
- 2 Strong public opposition<sup>45</sup>
- 3 Too many fiscal, legal and regulatory barriers
- 4 Budget constraints at Member States
- 5 Lack of cooperation between public authorities of MS

Interviewees are of the opinion that PBI cannot override these barriers because PBCE is primarily an instrument designed to solve lack of financing issues. Such statement may appeal for EU intervention.

The next paragraphs elaborate on how the EU added value can be used to partially tackle these barriers and difficulties in the areas of (i) regulations, (ii) practise enhancement and capacity building and (iii) clear communication. We will also introduce propositions regarding (iv) the complementarity with other EU initiatives and (v) the achievement of the priority and core network projects.

### Fostering conducive regulations

MS and EU regulations strongly affect investors' behaviour. In order to encourage investments in infrastructure and maximise the EU added value of the instruments, several areas have been identified.

### The EU accounting framework of PPP

A Public-Private Partnership (PPP) contract implies the government purchase of a service produced by a partner through the creation of an asset. They may potentially have large impacts on public budgets as they may represent contingent liabilities. The ESA 2010 regulation is the accounting framework applicable in Europe which sets the criteria to evaluate if a PPP should or not be part of the MS expenditure and should therefore be on or off-balance sheet.

**The top 5 barriers and the current market paradigm**

Source: EY analysis



<sup>45</sup> For instance, a project might experience disruptions if there is public opposition due to project location, environmental impacts, budget constraints...

## Several areas of improvement have been identified in order to increase the EU added value

We have obtained confirmations throughout the conduct of our interviews that procuring authorities are concerned with the way the statistical treatment of PPP impacts the MS budget. A procuring authority reported that they have stalled projects because they are not always able to determine what the statistical treatment will be.

In order to alleviate the MS' concern regarding the statistical treatment of PPPs, EU actions could clarify and streamline conditions to keep PPPs off-balance sheet. To this end, early exchanges with EUROSTAT on the statistical treatment of potential PPP projects should be encouraged.

### *Prudential regulations*

Respondents considered that prudential regulations, i.e. Solvency II and Basel III, are crucial to help reaching Europe's Infrastructure investment objectives. Promoting banking and financial regulations consistent with EU infrastructure objectives is paramount.

Currently, while Basel III aims to increase both the quality and quantity of capital held by banks, Solvency II aims to align capital positions to the risks to which insurers are exposed. Therefore, it can be argued that Basel III shall impact negatively infrastructure assets in term of capital requirements to be held by banks while Solvency II (via the assets and liabilities matching) shall foster the holding of these assets by insurers.<sup>46</sup>

### *Simplification and harmonisation of permitting procedures*

Permitting procedures can sometimes prove to be burdensome and/or uncertain. For several interviewees, these are to be viewed as the most important causes for difficulties in closing financing of large European infrastructure projects. Specific measures cited in the literature include (i) the definition of a comprehensive procedure for environmental appraisal and permitting and (ii) the set up of measures to limit blocking appeals.<sup>47</sup>

### *Enhance the practise and build capacity*

Another area for EU intervention relates to practise enhancement and capacity building at MS' level.

Respondents highlighted that (i) within the design phase, poor project preparation and procurement procedures jeopardise a project and that (ii) experience in developing succesful PPP's varies from one MS to another.

EU actions might be directed towards initiatives that would:

- Reinforce MS' skills and capacity to structure infrastructure projects;
- Promote guidelines for procurement procedures which foster project financing schemes;
- Share and standardise the best practises.

### *Market the EU initiatives*

Another area prone to improvement relates to the opinion of informed stakeholders.

When referring to specific projects, a NGO expressed concerns regarding:

- The lack of attention brought up to environmental aspects. According to the NGO, the PBI focused too much on fossil fuel projects;
- The insufficient consideration to potential fraud risks (when referring to the media attention on Passante di Mestre),
- The dual position taken by EIB when acting both as a subordinated and senior debt provider within the same transaction;
- The lack of public consultation.

<sup>46</sup> Nevertheless, even with tighter capital requirements, the banks seem very able and eager to lend long term (up to 20-25 years). The Solvency II regime will become fully applicable on 1 January 2016.

<sup>47</sup> Source EC (2015): Action Plan: Making the best use of new financial schemes

## Several areas of improvement have been identified in order to increase the EU added value

Other interviewees highlighted the following point for consideration :

- ▶ There is still a lack of confidence at MS level for the involvement of private sector involvement. EU and EIB have not been able to convince all MS yet about the value for money that private finance - supported with PBCE – can bring.
- ▶ Although grants are allocated by means of a public call and are subject to an internal and an external evaluation, some interviewees expressed concerns about the possible political interference with the use of PBCE.<sup>48</sup>

Stakeholders opposition might be alleviated via measures that will market the EU initiatives by either (i) promoting clear communication and/or (ii) aligning sustainability preoccupations. As reported by the Commission, *'European citizens should be able to have a better view of what the EU budget is for, and how the key choices have been made'*.<sup>49</sup>

Streamline the EU initiatives by increasing complementarity of EFSI and CEF<sup>50</sup>

The EC and the EIB should facilitate the blending and pooling by combining the grants from the CEF and the ESIF with the financial instruments and products available under these both initiatives to optimise the benefits from aggregation and risk diversification of project portfolios at EU level and across sectors.

Achieving priority and core network projects<sup>51</sup>

The PBI pilot phase has supported a limited number of projects. Apart from EU budget constraints (the EU allocation for the PBI pilot has been fully used), major impediments for the achievement of the core projects relate to, among others, (i) their financial sustainability and (ii) their cross border nature.

Some core projects are not financially sustainable without grants. Therefore, in order to achieve them, a combination of grants and financial instruments might be needed. We note nevertheless that this is foreseen in the CEF regulation and that it is the intention of the EIB to, after completion of the pilot phase, focus on priority and higher risk projects.

Finally, the EU, acting as a supranational entity, might address cross-border projects to improve cooperation between MS, foster adequate harmonisation of procedures towards a single legal framework and a public common procurement

### Key findings

- ▶ EU added value is an important criterion to justify spending at EU level
- ▶ The EU contribution in the risk-sharing mechanism has been essential to enable EIB to implement the initiative
- ▶ The EU involvement allows the initiative to target riskier, larger transactions and to widen the investor base
- ▶ Further actions to maximise the EU added value of the instrument should aim at increasing the project pipeline, streamline the EU initiatives (i.e. EFSI and CEF) and achieve priority and core network projects
- ▶ To develop an adequate pipeline, areas of improvements identified include:
  - Fostering conducive regulations in the areas of national accounting treatment of PPP, prudential regulation and permitting procedures;
  - Enhancing the practise and building capacity at member states to undertake infrastructure;
  - Marketing the initiatives via more clear communication and alignment of sustainability concerns.

<sup>48</sup> In particular, on a non PBCE beneficiary project, stakeholders mentioned during the interviews that during the tender they had concerns about the perceived additional grant that procuring authorities could receive if PBCE would be applied. For a while, this created a sense of nervousness amongst bidding consortia because it could influence the procuring authority in its selection of the preferred bidder. In order to alleviate this concern and to deny the rumours, the procuring authority released, to the satisfaction of the bidders, a statement to confirm that the evaluation of the bid would not be affected by the use or not of the PBCE.

<sup>49</sup> Source : October 2010 Communication on the budget review

<sup>50</sup> 'Source EC (2015): Action Plan: Making the best use of new financial schemes

<sup>51</sup> 'Source EC (2015): Action Plan: Making the best use of new financial schemes

## The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment

### Question 4.2.a: To what extent has the EU Contribution to the PBI been additional over the market alternatives available for long-term debt financing?

The principle of additionality refers to the extent to which the EU contribution to the PBI adds to the existing market alternatives instead of replacing them and results in a greater aggregate.

In section 2.4, we present the results of our comparison of PBI with the other risk-sharing facilities (LGTT, UK Guarantee Scheme, PEBBLE and the monoline insurance). As compared to the private initiatives, i.e. PEBBLE and the monoline insurance, PBCE offered distinctive advantages as for example the transparency of the investors behind the risk sharing facility. The assessment of the additionality regarding the LGTT and UK Guarantee Scheme is further developed in section 4.3.

In section 3.4, we compare the other forms of credit enhancement or insurance cited by the respondents, i.e. market funded subordinated debt and EIB unfunded guarantee. These instruments offered either other sorts of protection (e.g. full wrap) or were not attributed with the same benefits as PBCE.

In section 4.3, we further develop on the additionality aspect of PBI on equity. It might be useful to highlight here that, from an economic point of view, replacing PBCE with equity would result in higher costs and in a suboptimal investment situation from a project promoter's point of view.

In section 1.2, we develop on the additional volume of financing mobilised with the help of PBI on the beneficiary projects. The PBCE was crucial to obtain debt financing (bond or bank financing) for Castor. For Axione and probably A11 and Greater Gabbard, the PBCE was critical to obtain capital market financing. The other projects could have been financed by the debt markets without enhancement. In most of the cases, the presence of the PBCE increased the competitive tensions benefitting procuring authorities and sponsors.

The additionality of the instrument is intrinsically linked to the economic environment

The PBI pilot phase was set up by Regulation of the European Parliament and the Council (EU) N°670/2012 in July 2012 with a long term view.

At that time, the debt capital market financing was not readily available for infrastructure projects in the Union and infrastructure projects faced difficulties in gaining access to long-term private finance or public funding. Due to the fragmentation of the bond markets across the Union, combined with unknown demand as well as the size and complexity of infrastructure projects, the EU deemed appropriate to address this issue at the Union level.<sup>52</sup>

Moreover, the EU believed that financial instruments could, in some cases, improve the efficiency of budget spending and achieve high multiplier effects in terms of attracting private sector financing. This was particularly relevant in the context of difficult access to credit, constraints on public finances, and in view of the need to underpin Europe's economic recovery.

Nevertheless, from the time when the EU institutions were initially contemplating developing capital market solutions until the operational start of the Project Bond Initiative, the infrastructure financing market continued to develop and market's needs for credit enhancement changed. The use of the instrument has been affected by the differences in the phase of the economic cycle in different groups of MS.

In the current environment, a significant share of investors feel comfortable with the risks of availability-based PPPs in north-western Europe and in established sectors, such as transport and an increasing number are sufficiently equipped to tackle construction risks encountered in greenfield projects. This is, to a large extent, the areas of the beneficiary projects under the PBI pilot phase.

The additionality of the instrument needs to be assessed with a long term horizon as it is intrinsically linked to the economic environment (i.e. the state of the capital markets and public finances, the behaviours of long term private investors, the financial regulatory environment and the monetary policy). In case of future economic downturns and/or liquidity squeeze and risk/return perception shifts, the instrument will be more additional over the market alternatives available for long-term debt financing.

<sup>52</sup> Source : EU (2012): REGULATION (EU) No 670/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 July 2012



## **The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment**

One might challenge more often the value for money for eliminating refinancing risk with a long term loan

While refinancing risk might be alleviated via long term loans, interest rates are higher than for short term tenors. The PBCE facilitates long term financing and as such helps to eliminate refinancing risk at the cost of higher interest rates and costs of credit enhancement.

Though the procuring authorities seem to prefer to eliminate the refinancing risk and to commit long term financing, they could instead accept short term loans for these projects with a refinancing risk.

It could be that the costs for long-term financing (including enhancement) are higher than the costs for short term loans (including costs for refinancing and risk premium). It would be interesting to investigate the value for money for eliminating refinancing risk.

In case refinancing short term loans appears to be a preferable option, a respondent suggested that the EIB should facilitate a refinancing by preventing swap breakage costs (e.g. EIB as a swap counterparty and as such keeping the swap intact at a refinancing).

## The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment

### Question 4.2.b.: How can the EU budget best be used to mobilise the maximum amount of private funding?

In the need of developing a long term view, we identified areas to investigate in order to maximise the amount of private funding and to avoid replacing it. These measures are presented below.

#### *Stimulate procuring authorities and/or project promoters to make thorough preliminary assessments*

The eligibility criteria to select projects under the PBI should be interpreted and adhered to in a more rigid way to prevent enhancement of projects that can be financed without. We note that stricter criteria have already been catered for in CEF<sup>53</sup>.

In order to determine which projects cannot receive adequate financing from the market and should be supported with financial instruments, an assessment of market imperfections or sub-optimal investment situations and investment needs to be carried out by procuring authorities and/or project promoters prior to the launch of individual project tenders to the market. They should consult the private sector to determine market appetite for these projects without support. Currently the approval procedure is addressed by an entrusted entity (i.e. EIB) that will decide on the support with financial instruments.

#### *Focus on geographical areas with market failure and/or projects with significant risks*

Our interim report highlighted the areas where the financing market is much tighter as being in riskier sovereigns of Southern and Eastern Europe and sectors with higher risk. Our final review confirmed the statement.

In the current economic environment, substantial debt capacity is available from banks and institutional investors to finance well-structured infrastructure projects in stable economies. Therefore, PBI should target less-structured projects in riskier geographical areas.

In that sense and as reported in previous section, access to project finance might still be difficult for less creditworthy countries and for projects with significant risks and/or complexity (e.g. projects exposed to significant revenue, construction or technology risks and projects exposed to political, country, legal and regulatory risks).<sup>54</sup>

The EU financial system remains fragmented, even in the current economic context of overflowing liquidity, with certain countries having historically low financing costs, while others are still struggling with high costs for long term financing. Twenty MS reported financing constraints (both in terms of public and private sources of financing) as a barrier to long term investment.<sup>55</sup>

Several respondents confirmed that the PBI should target complex transactions and project entailing revenue risk in riskier sovereign. Some interviewees also highlighted that PBI should provide uplift from non-investment grade to investment grades projects and criticised the enhancement of projects that are already investment grade.

#### *Enlarge sector scope*

Several respondents mentioned that the scope of PBI in term of the sectors targeted was too narrow. For example and as reported by one interviewee, TEN-E targets projects in the energy transmission area but not in the energy efficiency area. We note however that whilst this still may be the case for the CEF which strictly focuses on projects with high EU added value, the EFSI allows for a wider sectorial application of the financial instruments such as the PBCE.

#### *Consider equivalent mechanism for equity*

A stakeholder mentioned that it would have preferred PBCE to be applied to the enhancement of equity rather than bonds (see also the offshore case on page 21). In particular, the respondent would have liked to incorporate PBCE into a financing structure for a separated corporate entity that would not affect the company's rating.

<sup>53</sup> In regulation (EU) No 1316/2013 which establishes the (CEF) article 3 states: 'The CEF shall enable projects of common interest [...]. In particular, the CEF shall support the implementation of those projects of common interest **which aim at the development and construction of new infrastructures and services, or at the upgrading of existing infrastructures and services** [...]. The CEF shall also contribute to supporting projects with a European added value and significant societal benefits **which do not receive adequate financing from the market.**'

<sup>54</sup> Moody's (2015): A wave of capital for infrastructure, but mismatched with investment opportunities

<sup>55</sup> Source EU (2014): Special task force (Member States, Commission, EIB) on investment in the EU.

## The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment

Equity enhancement is supported by the German Insurance Association for projects that have difficulties in attracting equity investments because their risk-return profile is not sufficiently attractive. For example, equity investors might require disproportionately high yields.<sup>56</sup>

*Avoid a dual role i.e. being senior and subordinated debt provider*

In the previous section, we highlighted the concerns of certain respondents when EIB is involved as the provider of the PBCE instrument and as one of the senior bond holders. This dual position occurred on several of the beneficiary transactions (i.e. A11, A7 and Castor Gas Storage). Acting in a dual role creates additional complexities in voting arrangements. Moreover, interests of subordinated debt or LC providers and senior bondholders might not always align. In case of interest's misalignment, the other senior bondholders might be prejudiced.

In the future, if EIB intends to take both roles, additional procedures beside the voting arrangements might be accommodated to protect the other project stakeholders.

*Redefine the role as a subordinated debt provider*

Several interviewees express concern of the EIB in their role as a senior lender. Also, they remark that the Bank should act as a true 'subordinated' lender and felt that it was too involved in the process. Furthermore, it should be noted that EIB operations are dictated by a set of governance rules which must be followed to fulfil its role in Europe.<sup>57</sup>

*Prevent internal competition within EIB*

During the tender processes of the A11 and A7, EIB was involved as bondholder but also proposed bank lending products. On both projects, stakeholders experienced an internal competition within EIB that created additional price tensions. EIB's project finance loans might compete with PBCE on a.o. two aspects:

- ▶ EIB loan might be less expensive. The EIB loan facility can provide up to 50% of the senior debt which is very attractive for projects sponsors.
- ▶ In a scenario where both options are offered and result in equivalent pricing, equity investors will probably prefer the easiest option to implement which favours the lending solution.

This threat has been recognised by various respondents (public and private sector). One stated '*The EIB lending product competes with PBCE and bond financing. This internal competition can lead to distortion of the market [...].*'

In order to alleviate the potential pricing competition, one respondent suggested balancing the firepower of the PBCE and the EIB loan facility upfront with approximately the same NPV effect so that both solutions are equivalent. It would be difficult to assess the right balance at the start of procurement because volume and financing structure are still unknown. Moreover, the maximum EIB loan facility could be decreased to (i) a lower threshold than the standard 50% or (ii) a floor could be set on loan margin and fees to balance internal risk adjusted rates of return.

In our view, EIB should ensure that both products (bonds versus bank loans) continue to be offered by separate teams.

<sup>56</sup> Source GDV (2015): Comments of the German Insurance Association on the legislative proposal by the European Commission for the European Fund for Strategic Investments (EFSI).

<sup>57</sup> For more information regarding EIB governance, please refer to EIB report "The Governance of the European Investment Bank; June 2015", available on EIB website.

## The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment

### Key findings

- ▶ The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment
- ▶ The results presented in previous sections demonstrated that PBCE offered distinctive advantages as compared to the risk sharing facilities proposed by the private sector (i.e. PEBBLE and the monoline insurers) and the other forms of credit enhancement or insurance (i.e. market funded subordinated debt and EIB unfunded guarantee). In comparison with PBCE, these instruments have either a different sort of protection (e.g. full wrap) and / or do not have the same benefits
- ▶ For the beneficiary projects, the PBCE was crucial to obtain debt financing for Castor
- ▶ In order to maximise the amount of private funding and to avoid replacing it, the EU budget can be best used by:
  - Stimulating procuring authorities and/or project promoters to make thorough preliminary assessments of the market imperfections or the sub-optimal investment situations;
  - Targeting geographical areas with market failure and/or projects with significant risks;
  - Enlarging the sector scope;
  - Considering an equivalent mechanism for equity;
  - In case of combining the provision of senior and subordinated debt in the same transaction, additional procedures beside the voting arrangements might be accommodated to protect the other project stakeholders;
  - Preventing internal competition when EIB offers both bonds and senior loans.

## The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment

**Question 4.3.: To what extent is the PBI additional to other relevant EU or Member States financial instruments? Are there any overlaps or contradictions, for example in terms of risk sharing, design etc. across these instruments?**

The PBCE is one of the financial instruments that the EC/EIB have developed in order to facilitate investment in infrastructure. Some of the other initiatives launched by either EU or MS include:<sup>58</sup>

- ▶ The LGTT
- ▶ The UK Guarantee Scheme
- ▶ The Marguerite fund

The first two instruments i.e. the LGTT and UK Guarantee Scheme have been introduced in section 2.4. The Marguerite fund is presented hereafter. The table below summarises the key characteristics of the different EU and MS financial instruments.

### The Marguerite fund

The Marguerite Fund, referred as the '*2020 European Fund for Energy, Climate Change and Infrastructure*' is an independent fund established in 2010.

The fund has raised €710 million with the backing of six major European financial institutions (including EIB) to make investments in capital-intensive European infrastructure. The EU contribution amounts to €80 million. The fund is expected to deliver return to the investors.

Marguerite provides equity financing to long-term greenfield and brownfield infrastructure projects across transport, energy and mature renewable sectors. Ten operations have been signed in 8 countries. Targeted geographical areas include both Western Europe and CEE.

### Mapping of EU and MS instruments

	Product type	Financing supported	Sector coverage	Geographic scope	Project phases covered	Duration	Cover	Maximum size
PBI	Funded/ Unfunded subordinated debt	Bond	TEN-T, TEN-E and broadband, ICT	Europe zone	Construction and/ or operation	Customized to the project financing needs.	1. Funded PBCE: Cover eligible costs in the base case 2. Unfunded PBCE: Shortfalls to ensure Senior Bond debt service.	Up to 20% of the nominal of senior bonds
LGTT	Unfunded mezzanine debt	Bank	TEN-T	Europe zone	Operation	5 to 7 years	Revenues generated are insufficient to ensure payment of the senior debt	20% of the nominal of senior bonds
UK Guarantee Scheme	Financial guarantee	Bond and bank	Infrastructures (including utilities, railway facilities, transport facilities, health or educational facilities, court or prison facilities and housing)	UK	Construction, acquisition, design, conversions, improvement, operation or repair of infrastructure assets	Customized to the project financing needs.	Principal and interest of the relevant borrower/ issuer of debt	Entire amount of the relevant loan/ debt.
Marguerite fund	Equity fund	Equity	TEN-T, TEN-E and renewables	Europe zone	All	n.a.	n.a.	n.p.

Source: EY analysis

<sup>58</sup> Please note that the list is not exhaustive. For example, the Private Finance for Energy Efficiency (PF4EE) and the Natural Capital Financing Facility (NCFF) have not been analysed as a large number of the respondents were not familiar with these instruments.

## The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment

Overall, the PBCE is complementary to other EU and MS financial instruments available

To a large extent, PBI appears to be coherent and complementary with the other EU and MS financial instruments described in the previous section. It is the sole EU financial instrument that specifically addresses, in the same time, (i) the enhancement of project bonds for (ii) greenfield infrastructure projects; (iii) in the EU zone and (iv) for the TEN-T, TEN-E and ICT/ broadband sector.

The other EU risk-sharing instruments address other needs:

- The LGTT targets bank financing in the transport sector;
- The Marguerite Fund is an equity fund.
- The UK Guarantee Scheme specifically addresses the UK market and provides a 100% wrap.

However, PBCE and LGTT may overlap with each other on TEN-T projects entailing traffic risk when bank and bond financing are both viable options.

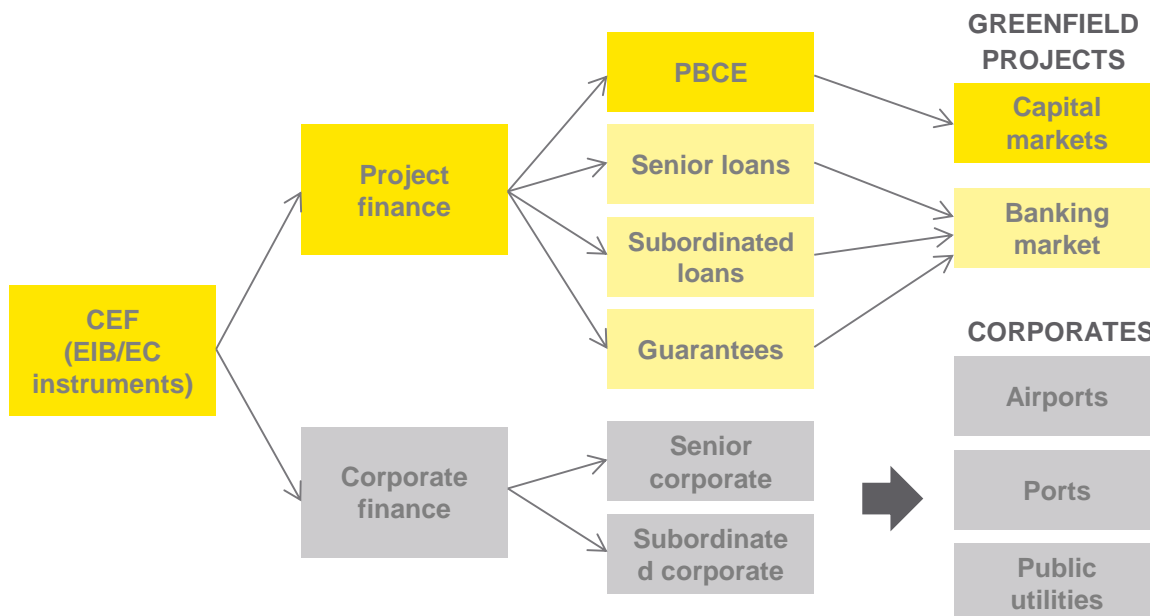
Overall, the PBCE is complementary to other EU and MS financial instruments available in the European market, and can even conceivably sit alongside these other instruments in the financing structure of a project.

Due consideration should be given when choosing the financial instrument

The PBCE will be part of the instruments available under the CEF. The diagram below illustrates the various instruments offered under this program and the targeted market.

### The CEF Toolbox of debt instruments

Source: EIB (2015): EIB's Debt Financial Instruments under the Connecting Europe Facility



Whereas the responsibility for deployment of products supported by financial instruments remains predominantly with the EIB as the entrusted entity, we believe that both institutions, EC and EIB, should strive to focus the use of credit enhancement instruments to projects which are the most in need of accessing credit and thus improve the efficiency of the CEF and EFSI budget.

In the selection of the most effective form of financial assistance the EU, EIB and project promoters, under the CEF, shall give priority to the use of financial instruments above the use of grants. In choosing the appropriate financial instrument due consideration attention should be given to sector and project specific characteristics. According to one of the respondents it is important to consider:

- ▶ The reasons why PBCE is chosen;
- ▶ The collateral effects of using PBCE.

## The additionality of the instrument needs to be assessed from a long term perspective as it is intrinsically linked to the economic environment

PBCE should only be implemented when the project is not capable of attracting debt capital market financing. It should not be used to replace equity with a lower cost subordinated tranche. Eventually subordinated debt remains to be debt and must be repaid. Replacing equity with subordinated debt will increase the leverage and risk of the project from a sponsors' perspective.

This comment is in line with the section on rebalancing in section 3.4.b. When a drawdown of the PBCE results in a 10 year dividend holiday for equity, the interest between the project promotor and equity sponsor (manager) might no longer aligned. In these circumstances it may be in the project's interest to have a higher equity cushion, potentially partially from the Marguerite fund, instead of a credit enhancement from PBCE. In this sense PBCE and Marguerite serve different purposes and can even be coherent. So while there is no overlap it requires a conscientious assessment which instrument serves the project's characteristics best and how they should be sized.

### Key findings

- ▶ Other financial instruments have been launched by either EU or MS in order to facilitate investment in infrastructure. These include the LGTT, the UK Guarantee Scheme and the Marguerite fund
- ▶ PBCE is the sole EU financial instrument that specifically addresses, in the same time, (i) the enhancement of project bonds for (ii) greenfield infrastructure projects; (iii) in the EU zone and (iv) for the TEN-T, TEN-E and ICT/ broadband sector
- ▶ The PBI appears to be additional to these risk-sharing facilities to a large extent except for LGTT on TEN-T projects entailing traffic risk and when bank and bond financing are both viable options
- ▶ The decision on which instrument to use may not always be straightforward and requires a conscientious assessment of the project characteristics and whether these financial instruments can and need to be combined for the optimal financial structure (blending).

## Conclusions and recommendations

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## Conclusions

In 2012, PBI was set with the aim (i) to help finance priority projects of EU added value and (ii) to contribute to the development of the debt capital market financing of infrastructure projects.

At that time, access to long-term finance and public funding was not readily available and the debt capital market for infrastructure projects was not sufficiently developed. Moreover, the use of financial instruments was perceived, in some cases, as being an efficient method to spend the EU budget via the instrument multiplier effect (in terms of attracting private financing).

The EC decided to allocate a budget of €230 million to support the testing phase of the pilot which was intended to deliver 5 to 10 precedent transactions.

During the PBI pilot implementation, the infrastructure financing market witnessed significant changes. In particular, the low interest rates and the prudential regulatory environments have had significant impacts on financing volumes and investors' behaviour within the European infrastructure market. Noticeable developments include a current growing appetite of some institutional investors for infrastructure assets coupled with the resurgence of bank financing and a shift of investors' focus from risk protection towards return concerns. As a result, these recent years, the market experienced significant competition.

Since the PBI became operational in November 2012 and until 31 July 2015, there have been 7 projects signed with the use of PBCE among which 5 have been supported by the EU budget contribution and 2 have been totally supported at the own risk of the EIB. Before year end, two additional projects are expected to be signed with the support of the EU budget and one additional project is expected to close at the own risk of the EIB.

In the light of our mandate, we have been requested to perform an independent evaluation on the pilot phase of PBI to assess (i) its effectiveness, (ii) the efficiency of Union spending, (iii) the relevance of PBI and (iv) its value added and additionality. Our conclusions, based on stakeholder interviews and desk research, are summarised below.

### Summary of findings

The PBI was useful in facilitating the development of the capital market financing of infrastructure. All projects achieved were eligible. For TEN-T, the Port of Calais may be considered as belonging to the core network under the new guidelines. For TEN-E, Greater Gabbard was a priority project under the old regime (effectiveness)

The EU contribution was proportionate with the number of projects supported and the achieved /expected leverage effect (efficiency)

PBI responded to the market needs at the time of its inception and was relevant in terms of achievement of policy objectives on certain projects. In the future, PBCE should be targeted towards specific projects (i.e. with more risk for the investors) to remain relevant (relevance)

The PBI instrument demonstrated EU value-added as it allows the initiative to target riskier, larger transactions and to widen the investor base (EU added-value)

PBI provided additionality over existing risk-sharing schemes both at EU and national level. The PBI was additional to alternative sources of financing on certain projects (additionality)

### Extent to which the PBI pilot has achieved its objectives (effectiveness)

During the Pilot, all the projects met the eligibility criteria set up in the Cooperation Agreement and one TEN-E priority project under the old regime, i.e. Greater Gabbard, and one TEN-T core network project, i.e. Port of Calais, were achieved.

Regarding the Pilot's second objective, i.e. the development of debt capital market financing, stakeholders agree on the important contribution of the Initiative as it (i) facilitated the development of the project bond market, (ii) raised interests of institutional investors and encouraged them to reassess their business models.

The Pilot was implemented under various circumstances to demonstrate the feasibility and replicability of the instrument.

The Pilot has been successful in achieving its primary objective, the development of the debt capital market financing of infrastructure projects.

## Conclusions

Extent to which the EU contribution allocated to the PBI pilot phase was commensurate with the outputs achieved (efficiency)

The amount of projects achieved was 7 before 31 July 2015, and thus fully complies with the target range of 5 to 10 projects. Furthermore, a few more PBCE transactions are aiming at closure before year end 2015.

For the EU supported projects, the expected leverage effect of the EU contribution is 18.6 (i.e. the ratio between all projects costs of achieved and expected to be achieved projects with EU budget support and the EU budget support) and is therefore fully in line with expectations (i.e. 15 to 20).

Although the EU contribution was not sufficient to support Castor and Gwynt y Mor which were enhanced by EIB without EU support, the contribution size was commensurate to facilitate development of the capital markets as an additional source of finance for TEN-T and TEN-E infrastructure projects. However, for the ICT and broadband sector, the contribution seems to be limited because of the sector preference for corporate financing schemes.

Besides this, the PBCE instrument has proven to offer significant benefits as compared to other risk sharing facilities but its competitiveness with alternative financing solutions on some projects is being challenged under the current economic context.

As a result, the EU contribution achieved outputs that were in line with the targets and objectives.

Extent to which the PBI pilot phase proved relevant to address the market needs for the financing of priority projects in transport, energy and ICT, and contributed to the development of debt capital market financing of infrastructure projects (relevance)

At the time of its inception, the PBI instrument proposed solutions to mitigate the construction risks which were one of the foremost reasons why institutional investors did not enter the market. Nevertheless, during the Pilot phase, the relevance of the PBCE instruments has been challenged by the current growing appetite of the investors (banks and institutional investors) and the acquired experience of the institutional investors. This reduced the need of credit enhancement for well-structured projects in stable and experienced European countries.

Nevertheless, the overall opinion with respect to the design is that PBCE is well structured and that the alternatives available on the markets are less relevant.

Cyclical market developments, but also the professional development of investors in the infrastructure sector, have led to a change in the market needs which indicate that, while the product is well designed, it should be even more targeted towards specific areas in order to continuously improve its relevance.

**Therefore, we are of the opinion that the initiative was particularly highly relevant at its inception. During the Pilot, due to changes in the macro-economic environment the market's need for the instrument compared to the need at PBCE's inception reduced. This made the PBI less relevant for some of the projects. In the future to remain highly relevant, PBCE should be targeted even more towards specific types of projects (i.e. projects located in geographical areas with market failure and/or projects with significant risk).** The EU added value and additionality of the PBI pilot phase

The EU contribution, via amongst others the risk sharing mechanism, has been crucial to develop the initiative and allow EIB to target riskier, larger transactions and to widen the investor base.

PBI proved to be additional to the other risk sharing facilities and to the other forms of credit enhancement or insurance. However, we noted that cyclical market developments, but also professional development of investors in the infrastructure sector, have led to a change in the market needs which indicate that, while the product is well designed, it should be continuously targeted towards specific areas in order to further improve its relevance and additionality in line with market movements. The additionality of the instrument needs to be assessed with a long term horizon as it is intrinsically linked to the economic environment and its up- and downturn cycles.

PBI should continue

Taking into account stakeholders' opinions and the EU 2020 objectives, we esteem there is a clear future necessity for the PBCE solution from EU and EIB, in the sense that it can counterbalance the market volatility or uncertainty in bringing long term and competitive solutions to finance crucial infrastructure projects in Europe. An extra argument from various stakeholders is that a temporary interruption in the use of the PBCE instrument might result in the loss of built up knowledge and the developed market.

In addition to this, we would like to catch the reader's attention on certain considerations that we judge relevant:

## Conclusions

- ▶ Each sector targeted by the Pilot has specific dynamics which might vary from one country to another;
- ▶ Within the current context, PBI may help, but is not sufficient to tackle the main obstacles to realise infrastructure investments and should therefore be accompanied by targeted/ tailored actions;
- ▶ In the long run, a continued lack of project pipeline might create market distortions;
- ▶ Accelerating a pipeline is necessary to retain the market practice in financing projects via capital market solutions;
- ▶ In the project bond market, a new potential concentration risk might arise following the dominance of certain groups of institutional investors.

In the following section, we develop a set of recommendations which we believe will help increase the instrument's effectiveness, efficiency, relevance and additionality and the EU added value while better achieving the EU infrastructure targets (i.e. reaching investments of about €1.5 to €2 trillion over the next decade in the targeted sectors).

## Recommendations

Despite the current market circumstances that have changed in comparison to the time of the setup of the PBI pilot phase, and in view of the long term cyclical nature of the markets, we believe the PBI should be continued as an important financial instrument available for infrastructure project financing and we propose the following recommendations.

### Recommendations on the effectiveness of PBI

#### *Increase focus on projects with highest EU added value*

Now that the market has been established, the PBI should even more focus on achieving *EU highest added value* projects under CEF. Appropriate solutions for these complex projects should be developed. These solutions should for instance tackle cross-border constraints that might impede the completion of these projects. Rail projects make up an important part of the TEN-T projects and this sector has not yet been tested for the use of PBCE. This sector traditionally involves a high amount of grants to make projects feasible. When combined with financial instruments that should attract private funding based on revenue risk, it is likely that the projects will require very long tenors. This again advocates for debt capital markets supported by credit enhancement. Although more evident for rail infrastructure, this also applies to road transport infrastructure in countries where it is less likely that they will be able to develop economic viable projects.

#### *Further develop the debt capital market financing for infrastructure projects*

Our analysis suggests that the market for private placements of greenfield transportation projects has developed sufficiently to address the current pipeline for well-structured projects. The preferred route for 'private placement' does introduce a potential new concentration risk. While these institutional investors only have a small portion of their investments allocated to infrastructure assets compared to monoline insurers during the crisis, the greenfield market may become too dependent on a few active and experienced private placement investors. When the pipeline increases under CEF and EFSI and perhaps liquidity becomes scarcer in the future and / or some of these investors reduce their investment allocation or face serious financial adversity, there may again raise a shortage of liquidity, suboptimal pricing or even funding risk for projects that are still under construction.

EU and EIB should continue to facilitate further development of debt capital markets. Actions should be targeted to:

- ▶ Reducing the potential concentration risk by attracting more institutional investors amongst others by encouraging securitisation of project bonds
- ▶ Explaining procuring authorities the potential pricing benefits of increasing the pool of investors through the use of public listings as well as illustrating the pricing security and lower complexity of private placements

### Recommendations on the efficiency of PBI

#### *Maintain a sufficient product utilization rate*

Given its complexity the product should be used on a recurring basis to prevent loss of knowledge and people losing the feeling with the product.

We recommend further knowledge build-up on PBI throughout EIB centrally and regionally so that the PBCE product can be applied by the Bank, where appropriate. Moreover, the transaction delivery within the EIB by a specialist team should be maintained in order to leverage expertise gained.

#### *Develop solutions for TEN-E and ICT*

In the ICT/ broadband and TEN-E sectors, the conditions to develop project bond financing are not always optimal. For example, ICT greenfield transactions for low populated areas are relatively small. This would call for bundling of transactions as was done on Axione to create sufficient deal size for bond investors. Bundling projects could reduce overall risk by diversification. But bundling greenfield transactions also creates additional challenges such as different equity sponsors on individual projects, timing differences in start and completion. Instead of bundling projects, a pool of funds (such as the European Long-term Investment Funds or ELTIF) could be credit enhanced by EIB based on the PBCE principle.

## Recommendations

In the TSO energy sector (part of TEN-E), regulatory constraints might favour a corporate financing scheme in certain jurisdictions. It should be investigated if the principles of credit enhancement can be applied, for example, to enhance loans or bonds for TSO's in the energy sector at corporate level.<sup>59</sup> This would result in an insurance or guarantee against the risk that bonds will not be repaid or repaid in full or that they will be repaid late. Similar to PBCE, the insurance should have an uninsured portion.

Furthermore, where projects involve too many risks for equity investors, a first loss mechanism analogous to the PBCE could be considered for equity investors.

### Recommendations on the relevance of PBI

#### *Better address current market needs*

Credit enhancement seems to be more needed on certain projects i.e. projects located in Southern and Eastern Europe and projects involving substantial risk. Investors may have also bigger concerns about sovereign risks, such as a possible exit from the Euro zone or expropriation, and higher expected losses. For these risks, an insurance product (a full wrap) may be more suitable than a mezzanine product. There is currently no EU product that provides this guarantee, nor is it possible to provide it under CEF where the PBCE is already maximised to 30%. Further investigation on the desirability of full wrapped bonds for very risky projects is recommended to address this potential market failure. In order to optimise the use of EU budgets there should be flexibility in reducing the enhancement for these projects when for instance the sovereign rating increases and political risk is reduced (which is possible during the long term of a concession).

Another hurdle for investors in non-euro countries is the currency risk. It should be investigated if the risk coverage of PBI could be extended to include currency risk.

#### *Improve the PBI design*

The rebalancing mechanism has been quite controversial and decisive in the use of PBCE during the operational phase. The impact of the rebalancing mechanism on the credit uplift should be weighed against the attractiveness of PBCE for equity sponsors (who decide on the use of the instrument).

In addition to this, phased payment of the Letter of Credit fee would make it more attractive in NPV terms and it would be more aligned with the credit risk increases during the construction period.

### Recommendations on the value added and additionality of PBI

#### *Maximise EU added value*

Investors generally only have a small budget for below BBB- (speculative grade). Following the Pilot, in the future PBI should be targeted more often to sub-investment grade projects such as greenfield projects for toll roads and those involving volume risk and projects with complex technologies and weaker contractors.

Furthermore, the EU added value could be increased if PBCE is provided to renewable energy projects such as offshore wind projects and interconnections of renewable energy sources.

Beside this, to prevent future case-by-case EC approval procedures required for amendments and improvements of the instrument (e.g. inclusion of bridge lenders, hedge providers and potentially currency risks), further extension of the PBI's risk coverage as set out in the Cooperation Agreement should be considered.

The instrument can be made more 'open source' by making it eligible for bank debt in addition to project bonds. To accommodate bank debt refinancing, according to some stakeholders, the EIB could consider to facilitate refinancing by preventing swap breakage costs by acting as a swap counterparty and keep the swap intact in case of a refinancing.

The interviews confirm there are other more important factors than public financial support to increase the pipeline of projects and achieve Europe's infrastructure objectives.<sup>60</sup> To eliminate barriers for a stable European project pipeline

<sup>59</sup> E.g. The European Investment Bank has provided Tennet Holding B.V. a loan package of in total EUR 450 million in 2011 to support the construction and operation of a transmission connection.

<sup>60</sup> The responses overlap with the recommendations in the recent report 'Action plan: Making the best use of financial schemes for European transport infrastructure projects' and we endorse its recommendations.

## Recommendations

actions should be targeted towards (i) fostering conducive regulations, (ii) enhance the practise and build capacity at MS level, (iii) market the EU initiatives and (iv) streamline the EU initiatives by increasing complementarity of EFSI and CEF.

*Mobilise the maximum amount of private financing and maximise the additionality*

We suggest to continue fostering project consultations between sponsors and procuring authorities with the private debt sector before envisaging the inclusion of PBCE for any individual project. Eventually grants could be considered if the project is not viable on its own. The Port of Calais is an example where these processes were aligned and first the funding gap was determined before a call for grant support was issued. Some stakeholders uttered the fear that the PBI should not be used to replace equity with a lower cost subordinated tranche which would increase the leverage and risk of the project.

Finally, to prevent any competition between EIB bonds and loans solutions, the Bank could strengthen the measures addressing the potential internal competition between its senior loans and the PBCE solution.

## **Appendix A : Overview of the infrastructure market**

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- 8. Infrastructure financing trends
- 9. Regulatory impacts
- 10. EU financial instruments

## Infrastructure financing trends

The resurgence of banks and the appetite of the institutional investors for infrastructure projects

The consecutive CBS and Eurozone credit crises led to several proposals and actions to strengthen prudential regulation frameworks. The regulation is expected to stabilise the financial system and will probably raise the long-term cost of capital. Many large commercial banks prepared for the implementation of higher capital requirements in 2012 and sold their project finance portfolios.<sup>61</sup>

The graphic below depicts the global volume of project finance transactions. As can be seen, the infrastructure funding from all financing types fell in 2012. In particular, bank loans experienced the largest decline. The withdrawal of banks in infrastructure projects created a funding gap estimated at \$500 billion per year as per Standard and Poor's<sup>62</sup>.

Beside this, following the credit crisis, yields on government bonds dropped. The coupled effect of the regulatory changes on Solvency II and the hunt for yield led insurance companies to consider alternative asset classes including infrastructure assets<sup>63</sup>. Over the past years, insurers have noticeably moved into non-traditional illiquid asset classes to optimise their balance sheets. As an example, UK insurers committed more than £25 billion to infrastructure projects in the UK alone.<sup>64</sup>

Even if the banks still held a predominant share of the European infrastructure financing market, this resulted in a shift in the financing of long-term assets away from banks and towards institutional investors.

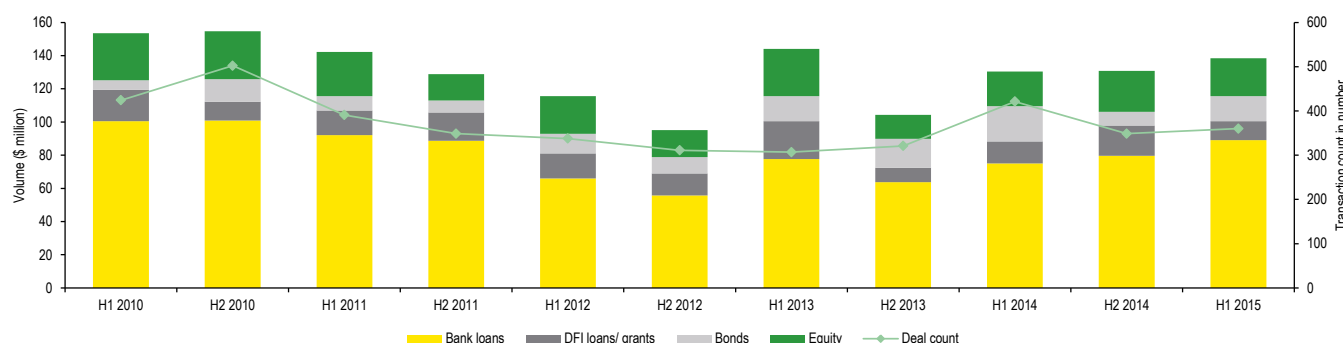
Nevertheless, the climate turned again to a certain degree and as from 2013, funding rebooted. Following the low interest rate environment, the banks returned to fund infrastructure projects.

The resurgence of the banks coupled with a limited deal flow resulted in a fierce competition amongst senior debt providers. So far, this has resulted in lower margins, increased tenors and sponsor friendly terms.

The graph below illustrates the global volume by source of funding. As compared to both first half and second half of year-end 2014, the total amount of investment increased during first half 2015. The majority of this increase can be attributed to bank lending which experienced a year-on-year increase of 19%.

Global volume by source of funding 2010 – H12015

Source: Infrastructure Journal



<sup>61</sup> The impact of the Basel and Solvency regulations are described further in the report.

<sup>62</sup> Source: Standard and Poor's: 'Global Infrastructure: How to Fill A \$500 Billion Hole', Jan 2014.

<sup>63</sup> The impact of the Basel and Solvency regulations are described further in the report.

<sup>64</sup> Source: Commercial real estate debt, EY, 2015



### The European bond market and the institutional investors

Banks have historically been a dominant source of funding in Europe, accounting for 85% of corporate. By contrast, half of corporate financing in the US is provided by the bond market. Bond capital markets in Europe have remained largely untapped even as credit conditions from the banking market have deteriorated.

During the credit crisis, senior debt tenors offered by European banking institutions decreased from 25 to 30 years before the financial crisis to no more than 10 years shortly thereafter.

Following the decline in funding from the banking market, liquidity has only returned to the market today thanks to strengthened balance sheets and monetary easing programs, such as the asset purchase programme currently run by the European Central Bank.

Beside this, the European bond market has experienced remarkably fast development, particularly since the crisis. For many critics, this source of financing might be more reliable to avoid credit crunch during periods of weakness in the banking sector.

In particular, for infrastructure investment, institutional investors have emerged as a new source of liquidity. Life insurers and pension funds have long-dated obligations and project bonds are therefore an interesting investment class.

A number of private sector initiatives to develop capital market solutions for infrastructure have been undertaken in Europe. We give a brief overview of some of these initiatives in the box below.

#### Institutional Investor Structures

A. Pan European Bank to Bond Loan Equitisation (PEBBLE COMMUTE) ING has spearheaded the structuring of the PEBBLE COMMUTE instrument, in which institutional investors and banks provided respectively 85 and 15 percent of debt requirement:

- ▶ 85 percent will be provided via a 25-year tenor A Notes issued to institutional investors;
- ▶ Subordinated first loss 15 percent tranche provided by a B loan facility funded by banks, with a 10-year tenor.

This initiative is a construction revolver facility where banks will underwrite the debt requirement of the borrower. This funding solution was first used for the Zaanstad prison in the Netherlands in September 2013.

B. Capital Lease Infrastructure Program (CLIP) is a consortium of almost 100 of the world's largest pension funds. The funder takes ownership of the 'to be built' asset and leases it to the infrastructure contractor. The funder receives a repayment of capital and earns its return through the capital lease programme. The asset passes to the borrower at the end of the lease. This initiative is intended for use with renewable, nuclear and other energy plants, transport, civil buildings and other social and economic infrastructure

#### C. Assured Guaranty

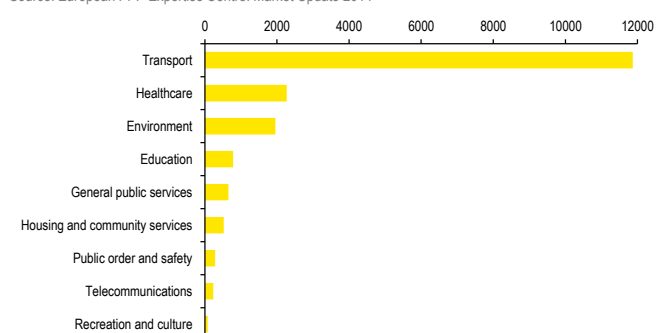
Assured Guaranty is a provider of financial guaranty insurance. The company guarantees the scheduled principal and interest payments when due on municipal, public infrastructure and structured financing. It applies a 100% credit insurance wrap over the life of the financing, allowing bond issues to link both with the concession length (as long as 30 years or sometimes more) and the needs of investors, like pension funds, seeking to match long-term liabilities.

## The European PPP market update

According to EPEC market analysis<sup>65</sup>, in 2014, 82 PPP transactions were closed for an aggregate value of €18.7 billion, which represented a 15% increase over the last year. The transport sector accounted for 63% of the total reported PPP transactions value and counted 23 deals closed (as compared to 16 in 2013). The second and third largest active sectors were, respectively, the healthcare sector (with a value of €2.2 billion for 15 operations closed) and the environment sector (with a value of €1.9 billion for 7 operations closed). The UK remained the largest PPP market in Europe in terms of both transaction value and number of deals (24 transactions closed for a value of €6.6 billions). The second and third largest active countries were, respectively, Turkey (4 transactions closed for a value of €3.5 billion) and Germany (7 transactions closed for a value of €1.5 billion). The sector and country breakdowns by value and by number of PPP transactions are illustrated in the charts below.

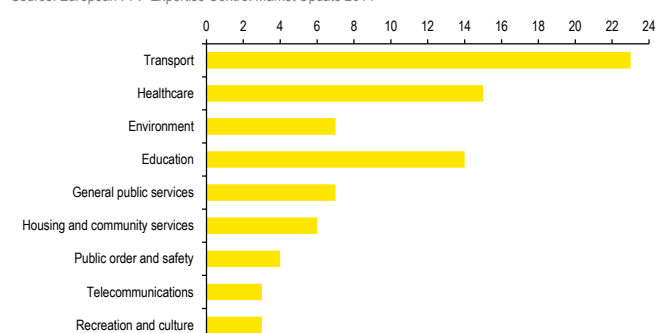
**Total value by sector (in € million)**

Source: European PPP Expertise Centre: Market Update 2014



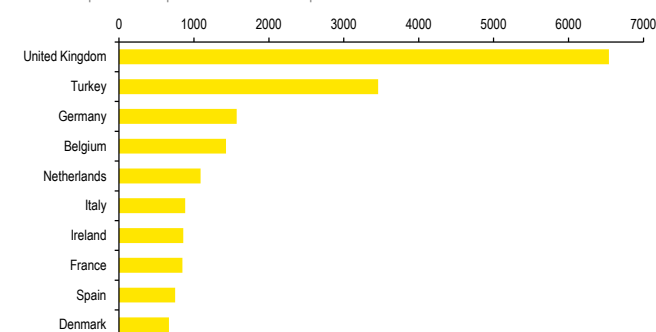
**Number of deals by sector**

Source: European PPP Expertise Centre: Market Update 2014



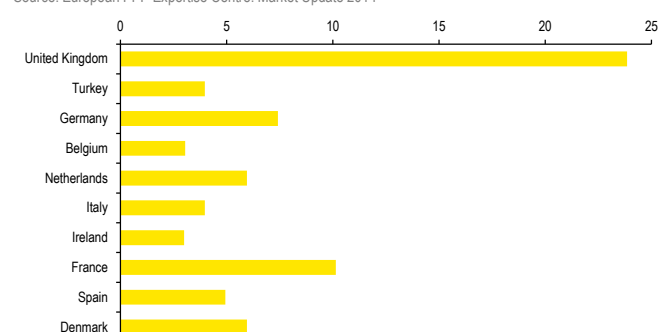
**Total value by country (in € million)**

Source: European PPP Expertise Centre: Market Update 2014



**Number of deals by country**

Source: European PPP Expertise Centre: Market Update 2014



## First half of 2015 market update

EPEC market update reported that 24 PPP transactions were closed for an aggregate value of €4.3 billion during the first 6 months 2015. As compared to the first half 2014, last year-on-year reported value totalled €9 billion for 34 closed transactions. This represents a decrease of more than 50% in terms of value and 30% in terms of number of closed transactions.

In value terms, Turkey was the largest PPP market (4 closed transactions for a value of € 1.9 billion) mainly because of the Bilkent Health Campus project, which was the largest transaction (value of €1.1 billion).

In terms of deal numbers, UK was the largest market active with 8 deals closed (as compared to 16 in first half 2014) for an approximate value of €1.3 billion.

Healthcare was the largest PPP sector in value terms (7 closed transactions for a total value of €2.6 billion) while education was the most active sector by number of deals (8 closed transactions for a total value of €0.7 billion).

<sup>65</sup> EPEC market analysis covers transactions in EU-28 countries as well as Turkey and countries of the Western Balkans region (i.e. Albania, Bosnia-Herzegovina, FYROM, Kosovo, Montenegro and Serbia).

### Institutional investors have specific requirements

From a public sector perspective, procurement authorities need to be aware that the emerging class of institutional investors have specific requirements. The requirements largely comprise the following:

- ▶ Ensure the risk / reward profile of schemes is sufficiently attractive to warrant the extra resources and cost required versus investing in equities and bonds.
- ▶ Proper risk allocation analysis in the project preparation phase.
- ▶ Investment guidelines often requiring credit ratings of investments.
- ▶ Principal contracts will need to consider institutional investors' concerns (e.g. 'make whole' clauses).
- ▶ For infrastructure projects, institutional investors will want to avoid 'negative carry', for example by required delayed draw downs.
- ▶ Government mechanism needs to meet investors' requirements.
- ▶ Standardisation of projects.
- ▶ Alignment of risk and return profiles across the project life cycle to meet the institutions requirements.

Considering the constraints on public finance and changing financial regulation, it will be imperative for infrastructure projects in Europe to be financed increasingly through capital market solutions. Purely for information purposes, below we cite a couple of examples of initiatives undertaken by governments to facilitate capital market financing of infrastructure.

#### National and regional infrastructure initiatives

The UK Guarantees Scheme (United Kingdom), announced in July 2012, is a series of initiatives intended to facilitate and encourage infrastructure investment in the United Kingdom. One of the initiatives is the proposal for Her Majesty's Treasury to provide guarantees in an aggregate amount up to £40 billion to lenders and investors providing bank or bond funding to eligible UK infrastructure projects. In substance, the UK Guarantee is broadly similar to monoline guarantee policies, which would likely be familiar to investors in the infrastructure sector. In March 2015, Infrastructure UK announced the list of prequalified projects eligible for the scheme.

P3 (Canada) P3s are a long-term performance-based approach for procuring public infrastructure where the private sector assumes a major share of the responsibility in terms of risk and financing for the delivery and the performance of the infrastructure. Over the years Canada's P3 market landscape has evolved considerably and has established Canada as one of the world's most stable and significant P3 markets in both volume and capital size of transactions. Through the collaborative efforts of both the public and private sectors, Canadian projects continued to achieve financial close through the 2008-09 financial crisis and maintain private sector participation when new projects are released to the market. When bank lenders became more risk averse the public sector had to adapt to the realities of financial markets. Some of the measures adopted by public procurers for P3 projects during the financial crisis remain today and are likely to continue to be a feature of the Canadian P3 market.

Africa Financial Markets Initiative (AFMI) The AFMI is an initiative from the African Development Bank (AFDB) to advance the development of African capital markets. In 2011, AFMI produced a feasibility report for an African domestic bond fund. This will be an index fund for sovereign credits in the most advanced capital markets. The AFMI has permitted Africa to increase its potential to meet a significant part of its infrastructure investment needs from domestic sources. More specific, some African capital markets across the continent already have the capacity to provide part of the financing that is needed to help build the growing infrastructure needs across the continent.

The Asian Development Bank (ADB) is considering its own scheme to offer credit enhancement for project bonds in the Asia Pacific region such as partial credit guarantees and other risk-sharing arrangements. A joint study of ADB and ADB Institute estimates that Asia needs to invest approximately \$8 trillion in national infrastructure and about \$290 billion in specific regional infrastructure projects between 2010 and 2020. Most recent figures suggest that for Asia and the Pacific region, annual financing needs for infrastructure amount to more than \$800 billion and that the Asian multilateral development banks are only able to finance up to 5 percent of that amount. The ADB has expressed its interest in moving infrastructure into the capital market in order to finance the enormous gap.

## The regulatory impacts

Private financing of infrastructure requires favourable international, European and national regulatory environments. In the paragraphs below, the regulatory frameworks of the (i) Stability and Growth Pact, (ii) Basel III and (iii) Solvency II are further discussed.<sup>66</sup>

### Impact of the Stability and Growth Pact on public infrastructure investments

Public investment in infrastructure has often been a prime target for budgetary cuts. The requirements of the Stability and Growth Pact posed regulatory constraints on investment in public infrastructure. This has affected the capacity of launching PPP for new infrastructure projects in several Member States in recent years.

Public investment in infrastructure by EU member states fell dramatically in recent years. This holds in particular for the EU member states most heavily affected by the European sovereign debt crisis and the ensuing austerity programs. Spending in Portugal, Spain and Cyprus shrank by more than 20 percent each year between 2010 and 2013, for example. Overall, the governments of the EU-28 invested just under €400 billion in 2013 – around 11 percent less than in 2010.<sup>67</sup>

### The prudential regulatory framework

In a recent report, former European Commission Vice-President, H. Christophersen, advises the European Commission to ensure that possible unintended impacts on infrastructure financing of regulations such as Basel III and Solvency II are mitigated through a favourable and non-discriminatory recalibration of the risk weight provisions for a new infrastructure asset class to be created<sup>68</sup>. These regulatory frameworks are discussed below.

### Impact of Basel III on project financing

The impact of Basel III on project financing should not be underestimated. The new solvency rules will substantially change the landscape of the banking industry in terms of capital, liquidity and funding requirements in the coming decade. BASEL III requires banks to tighten certain banking ratios, of which three will have the most significant impact on project finance.

The first is the capital ratio, especially the tier 1 Common Equity ratio, which will be applied as from 2019. It is generally expected that the banks will have to increase the common equity and reduce the risk-weighted assets. The increased common equity ratio will put pressure on the banks to invest money in safe heaven or put them in the central bank in order to lower the risk-weighted assets. The lower supply of loans, combined with increasing borrowing needs, will push the cost of borrowing up.

The second important ratio is the Liquidity Coverage Ratio (LCR). It requires banks to demonstrate they have adequate level of liquidity both in the short term and in the long term. When calculating the LCR, banks will need to assume a 100% drawdown of credit facilities issued to project finance borrower (usually an SPV), which will make this type of loan less attractive and therefore increase the pricing. The LCR minimum standard was introduced in January 2015.

A third ratio that will be imposed by BASEL III is the Net Stable Funding Ratio (NSFR). This ratio requires a minimum amount of stable sources of funding at a bank relative to the liquidity profiles of the assets, as well as the potential for contingent liquidity needs arising from off-balance sheet commitments, over a one-year horizon. The NSFR will lead banks to using long term liabilities to fund long term assets. Since long term funding is expensive, banks will decrease the tenors of the project finance loans to maintain their credit arbitrage.

### Impact of Solvency II on project financing

While Basel III aims to increase both the quality and quantity of capital held by banks, Solvency II aims to align capital positions to the risks to which insurers are exposed, requiring them therefore to hold regulatory capital against the risks introduced by their investments. The focus is on the balance between risks and rewards. The regulation is expected to come into force on 1 January 2016.

<sup>66</sup> Other regulatory frameworks have also an impact on the financing of infrastructures. For example, public procurement rules may also impact the appetite of Authorities and Project Promoters.

<sup>67</sup> Source: Squaring the circle – Improving European infrastructure financing, Roland Berger, 2015

<sup>68</sup> EIOPA and the OECD have published reports with regard to regulatory impacts on infrastructure as an asset class. For further information, please refer to the organization respective websites.

Less stringent capital requirements are implemented for high quality assets enabling European insurers to reduce the amount of capital held against 'high quality' securities, including low-risk infrastructure investments.

Moreover, following the relaxation of asset admissibility rules and given the illiquid nature of some long duration insurance liabilities (i.e., annuities), insurers are able to invest in less liquid assets if these are held to maturity with the intention to match such liabilities.

This creates opportunities for infrastructure projects for which cash flows follow a long term pattern. Besides this, lower credit risk (spurred by lower default rates and higher recovery rates) in project finance vs corporate bonds may compensate for higher liquidity premium, leading to equivalent returns.

## EU financial instruments

As mentioned above, the changing market conditions of project financing requires governments to find innovative ways to ensure that funding is directed towards infrastructure investment. In addition to the Project Bond Initiative, the EU has developed several other initiatives over the last years in order to facilitate investment in infrastructure. We will discuss a number of these initiatives below, including the Connecting Europe Facility (CEF), the European Fund for Strategic Investments (EFSI) and a selection of other EU financial instruments.

### Connecting Europe Facility

The CEF was established by EU regulation 1316/2013 in December 2013 and established a pool of EU funding to finance projects which fill the missing links in Europe's energy, transport and digital backbone. In addition to grants, the purpose of the CEF is to better mobilise private financing through the use of financial instruments such as guarantees, loans and project bonds. Over the 2014-2020 Multiannual Financial Framework (MFF) period, the CEF will make funding available to cross-border projects in three sectors:

- Transport (€24.05 billion):
- Energy (€5.35 billion):
- Telecom (€1.04 billion):

INEA will manage all the EU-supported projects established and the grants provided under the CEF.

In July 2015, the CEF Debt Instrument was launched with the aim to contribute to overcoming the deficiencies of the European debt capital markets, by offering risk-sharing for debt financing of projects in the transport, telecommunications and energy sectors, including broadband networks, in the form of senior and subordinated debt or guarantees.

### European Fund for Strategic Investments (EFSI)

The objective of the EFSI is to unlock public and private investments in the real economy of at least € 315 billion over the next three years (2015-2017), based on a legislative proposal made by the European Commission on 13 January 2015. For this purpose, the European Commission and the EIB have set aside € 21 billion, to be used as guarantees and financial instruments, that is expected to 'crowd in' Member State funding and private sector finance worth 15 times the initial budgetary contribution. A schematic representation of this plan is presented below:

#### The investment plan for Europe

Source: EU website



A Special Task Force on the EFSI set up by the EC, EIB and Member States, issued its final report in December 2014, with initial recommendations on the initiative and a pipeline of 2,000 potential investment projects with a total estimated investment value of € 1,300 billion. As a follow-up on to the Task Force's recommendations, the European Investment Advisory Hub will be set up regrouping and expanding existing Technical Assistance to national administrations and project promoters to prepare projects and use financial instruments. On June 24th the European

Parliament voted for the regulation establishing the European Fund for Strategic Investments (EFSI), the European Investment Advisory Hub and the European Investment Project Portal.

#### Other EU financial instruments

Besides the Project bond initiative, the EU has developed other financial instruments in order to facilitate investment in infrastructure. Some of the other initiatives are described below.

#### *Loan Guarantee Instrument for Trans-European Transport Network Projects (LGTT)*

The Loan Guarantee Instrument for Trans-European Transport Network Projects (LGTT) is an instrument that has been jointly established by the EU and the EIB with the objective of facilitating a larger participation of the private sector involvement in the financing of Trans-European Transport Network infrastructure. The LGTT partially covers the high risk (e.g. traffic risk) in a project's early operating stages by significantly improving the ability of the borrower to service senior debt during the ramp-up phase of the overall project. The design of the instrument substantially enhances the credit quality of the senior debt facilities, thereby encouraging reduction of risk margins applied to senior loans to the project. It is understood that a revamp of the instrument ('LGTT 2') is currently being contemplated to expand the types of risks that would be covered by the instrument (not only traffic risks). The LGTT 2 would then also be considered for the CEF Debt Instrument.

According to the EIB, 7 projects have thus far been supported by the LGTT instrument, all concluded before 2012 and of which 6 are outstanding. One deal was closed in 2008 (first year of operations), two in 2009 (second year), one in 2010 (third year) and three in 2011 (fourth year).

#### *Marguerite fund*

Marguerite is an independent equity fund investing in European infrastructure. The fund focuses on three core sectors within the EU 28 (i) transport, (ii) energy and (iii) mature renewable. The fund was established with the backing of six major European financial institutions and three further investors (including the European Commission), bringing current commitments to €710 million.

Transport projects that have closed financing with the Marguerite fund

Country	Project name	Sector
France	Toul-Rosières 2	Renewable energy (solar)
Belgium	C-Power	Renewable energy (wind)
Spain	Autovía de Arlanzon (A-1) Motorway	Transport (road)
France	Massangis 1	Renewable energy (solar)
Romania	Chernogeni wind farm	Renewable energy (wind)
Poland	Tychowo and Kukinia wind farms	Renewable energy (wind)
Germany	Butendiek	Renewable energy (wind)
Poland	Poznań energy-from-waste	Renewable energy (waste)
Croatia	Zagreb Airport	Transport (airport)
Ireland	N17/N18 motorway	Transport (road)

Source: Marguerite Fund

#### *European Structural and Investment Funds (ESIF) Financial Instruments*

Financial Instruments (FIs) transform EU resources under the European Structural and Investment Funds (ESIF) into financial products such as loans, guarantees, equity and other risk-bearing mechanisms. These are then used to support economically viable projects which promote EU policy objectives.

FIs aim to put EU funds to good and efficient use, ensuring that grants are complemented by other financial products so that EU funding can be used time and time again in a revolving manner. FIs can be combined with technical support or guarantee/interest rate subsidies.

The EU Member States who receive funding under the ESIF have a national body known as the Managing Authority (MA) which oversees the use of the available resources. MAs use ESIF allocations and place them in FIs through a Fund of Funds or a financial intermediary from which eligible projects can be financed.

FIs help mobilise additional public-private co-investments and provide a variety of incentives to better project performance. They have been used for financing Structural Funds investments since the 1994-1999 Multiannual Financial Framework (MFF). Their importance increased during 2007-2013 and they now represent around 5 % of total European Regional Development Fund (ERDF) resources. They are expected to play an even stronger role in the 2014-2020 programming period.

## **Appendix B : The Project Bond Initiative**

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### **11. The Project Bond Initiative**



### PBI, how does it work?

The separation of debt into senior and subordinated tranches is the core mechanism to enhance the credit rating of the projects and to mitigate the project risks.

EIB will provide a subordinated tranche, the *Project Bond Credit Enhancement Facility (PBCE)*, to support senior project bonds issued by a project company. The PBCE is available until the scheduled final repayment date of the bonds, or earlier if preferred by sponsors and bond investors. For the unfunded variant, the fee for the PBCE is fully payable at financial close. The main benefit is the resulting enhancement in the credit rating of the senior bonds.

This subordinated tranche will be provided as either (i) a subordinated loan (i.e. the funded PBCE) or as (ii) a letter of credit (i.e. the unfunded PBCE), which can be drawn if the cash flows generated by the project are insufficient to ensure senior debt service, or in order to cover construction cost overruns. The funded and the unfunded PBCE have significant differences in how each affect default risk and improve recovery prospects for bondholders should a default occur. They are described further in the report.

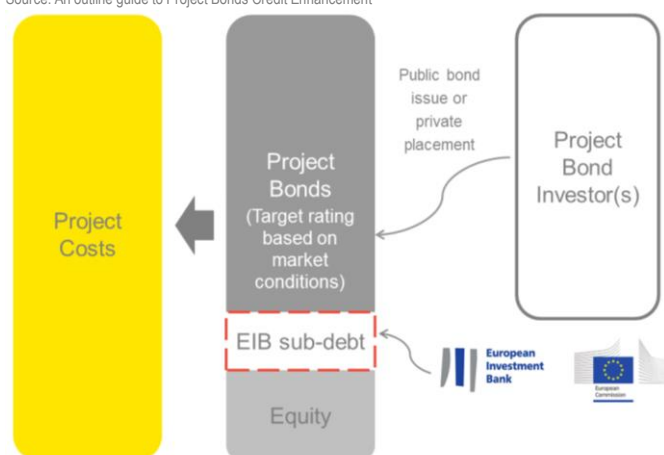
The improved credit quality of the senior bonds is expected to facilitate their placement with long-term institutional investors and therefore widen financing options for infrastructure projects in terms of margin and tenor.<sup>69</sup> The credit enhancement mechanism is designed to increase the credit rating of the senior bonds but does not extend to the credit rating of the project company.

The maximum size of the PBCE is limited to 20% of the nominal credit enhanced Senior Bonds.<sup>70</sup> The EU contribution serves to partly cover first losses on the portfolio basis, allowing the EIB to engage in riskier transactions.

#### The funded PBCE

##### The funded PBCE

Source: An outline guide to Project Bonds Credit Enhancement



#### The funded PBCE, example

Sources of funds :	Without EIB funded PBCE (€ million)	With EIB funded PBCE (€ million)
Senior Bond	100	83
Funded PBCE facility (subordinated)	0	17
Equity	20	20
<b>Total sources of funds</b>	<b>120</b>	<b>120</b>

Source: An outline guide to Project Bonds Credit Enhancement

The diagram above illustrates the functioning of the funded PBCE. An example has been presented beside the diagram.

The PBCE ranks below the Senior Bond but ahead of the remaining capital funds of the project (i.e. subordinated debt, share capital, contingent equity ...). The funded PBCE acts therefore as a first loss cushion during both construction and operation phases. The PBCE is used to cover eligible costs in the base case and does not represent an extra source of funds. Therefore, the funded PBCE generally reduces the probability of default during the operation phase but does not reduce the probability of default during the construction phase.

The positive impacts for the Senior Bond holders are the reduction of the amount financed by Senior Bond holders, the reduction of the loss given default (as a result of the EIB subordinated tranche) and the enhancement of the Senior Bond debt service cover ratios. The funded PBCE facility is not revolving which means that principal amounts previously repaid are not available to be redrawn.

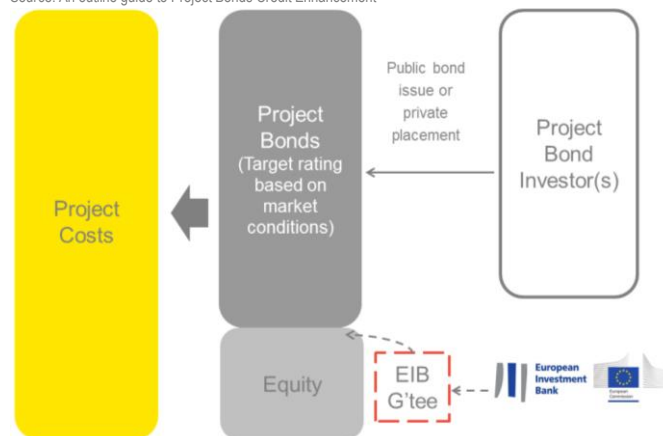
<sup>69</sup> The target rating for which PBI was designed is A- or above and should be therefore attractive to institutional investors.

<sup>70</sup> The EIB has the discretion to limit the amount to a lower threshold.

### The unfunded PBCE

#### The unfunded PBCE

Source: An outline guide to Project Bonds Credit Enhancement



#### The unfunded PBCE, example

Sources of funds :	Without EIB unfunded PBCE (€ million)	With EIB unfunded PBCE (€ million)
Senior Bond	100	100
Equity	20	20
<b>Sub-total</b>	<b>120</b>	<b>120</b>
Unfunded PBCE facility (LoC)	0	20
<b>Total available funding</b>	<b>120</b>	<b>140</b>

Source: An outline guide to Project Bonds Credit Enhancement

The diagram above illustrates the functioning of the unfunded PBCE. An example has been presented beside the diagram.

For the unfunded PBCE, EIB provides a letter of credit for the benefit of the Senior Bonds holders with the following characteristics :

- Long term i.e. the guarantee is made available until the final repayment of the Senior Bonds;
- Unconditional and irrevocable i.e. after the deal close, EIB is not be able to withdraw or to amend the letter of credit, including the pricing;
- Revolving i.e. replenished amounts can be redrawn at a later stage;
- Contingent i.e. the line is contingent to the occurrence of a permitted event (cash shortfall during construction, debt service shortfall post-completion and other cash shortfalls to ensure Senior Bond debt service).

The unfunded PBCE acts as a first loss piece. It represents an additional source of funds and improves therefore probability of default in the construction and operational phases. The amounts drawn under the letter of credit will become a subordinated loan. The positive impacts for the Senior Bond holders are therefore the reduction of the loss given default (as a result of the EIB subordinated tranche) and the mitigation of the probability of default during both construction and operation phases.

#### The Core requirement for an eligible project

Each funded project should fall within the sectors that qualify for support i.e. trans-European networks of transport (TEN-T) and Energy (TEN-E), broadband and ICT (ICT). In addition, they should meet EIB's normal eligibility criteria. Other core requirements include the presence of a bond financing structure, ring fenced project assets and a robust financial structure prior to the PBCE inclusion. PBCE can be used both for public and private placements.

### The PBI pilot

The financing instruments developed under PBI are part of the Connecting Europe Facility (CEF) in 2014-2020 MFF programming period.

The pilot phase of the initiative started in 2012 and is being implemented by the EIB.

The PBI pilot phase was set up as a precursor for the main phase of the PBI. The testing phase was essentially funded by re-allocated EU budgetary resources amounting to €230 million and split as follows:

- ▶ €200 million to trans-European transport networks
- ▶ €20 million to high-speed broadband projects
- ▶ €10 million to trans-European energy networks

The initial budget expected the initiative to result in a multiplier effect of 15-20 and hence to stimulate more than €4 billion of infrastructure investments.

As of 31 July 2015, 7 projects have been supported for a total PBCE amount of €612 million issued by the EIB. Appendix C includes a table with the status of the various PBI approved projects.

The 7 projects are depicted in the map below.

#### Beneficiary projects under PBI as of 31<sup>st</sup> of July 2015

Source: EY analysis



## Appendix C: Project Assessments

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12. Introduction

13. Projects having reached financial close with PBCE

## Introduction

### Projects assessed

This Appendix contains the list of projects that have been approved by the EIB Board of Directors.

The list is split in projects having reached financial close and projects currently in tender phase.

The following seven projects having reached financial close will form part of the project assessment. The cut-off date is 31 July 2015. A detailed assessment of these seven projects is included in the next pages.

#### Approved transactions – signed – status as of July 2015

Sector	Project	Country	Closing date
TEN-E	Castor	ES	July 2013
TEN-E	Greater Gabbard	UK	November 2013
TEN-T	A11	BE	March 2014
ICT	Axione	FR	July 2014
TEN-T	A7	DE	August 2014
TEN-E	Gwynt y Mor	UK	February 2015
TEN-T	Port of Calais	FR	July 2015

Source: EIB Operational reports

The following three projects have been approved by EIB board of Directors but have not yet been closed as per 31 July 2015. These projects are not in the scope of our ad-hoc audit and have therefore not been assessed.

#### PBCE approved transactions but not yet closed

Sector	Project	Country	EIB BoD Approval	
TEN-T	N25 New Ross Bypass	IRL	Approved in April 2014	Invitation to Negotiate (ITN) issued in November 2013. Preferred bidders selected. Documentation phase
TEN-T	Passante di Mestre	IT	Approved in June 2014	Project Bond structure under negotiation
TEN-E	West of Duddon Sands OFTO	UK	Approved in October 2012	Financial close expected in August 2015

Source: EIB Operational reports

## Castor gas storage

### Background

<b>Sector</b>	Energy
<b>Country</b>	Spain
<b>Year financial close</b>	2013
<b>Type of PBCE</b>	Unfunded
<b>Greenfield / Brownfield</b>	Brownfield
<b>Concession (y/n)</b>	Yes, 30 years (24 years remaining as of financial close)

The Castor project is a strategic TEN-E project consisting of a submarine natural gas storage facility in the east coast of Spain, in the municipality of Vinarós, able to contain 1.3 billion cubic meters of gas based on a depleted oil reservoir around 21 kilometres offshore. This project was the first in Europe to publicly issue project bonds enhanced by the PBCE product and raised debt financing of €1.4 billion. The storage facility's design comprised two platforms, compression and related facilities onshore and offshore, and a maximum delivery rate of 25 million cubic meters a day. The project included the 30-year concession for construction and operation of the underground gas storage facility. That The facility's full inclusion in the Spanish gas system was expected by the end of 2013, and would have allowed to cover 30% of Spain's daily gas consumption for 50 days.

The Castor gas storage was a refinancing. The senior bank loans were reaching a maturity, and the project faced a default if a refinancing package was not proposed.

In September 2013, the Spanish government halted activity at the storage plant after more than 200 minor earthquakes were detected. The plant was at the phase of injecting the "cushion gas" necessary to provide the pressurization to extract remaining gas from a storage facility.

On the 20th of June 2014 Fitch issued a press release stating that: "Fitch Ratings downgrades Watercraft Capital S.A.'s (Castor Gas Storage) €1.4 billion secured bonds to BB+ from BBB+ and keeps the rating on Rating Watch Negative (RWN)." The downgrade of the rating to BB+ related to the level of uncertainty and lack of visibility on the fate of Castor gas storage project which were not commensurate with investment grade rating on the bonds. Fitch believed that there was an increased probability of concession relinquishment. The availability of €200 million under the PBCE facility to support compensation payments was favourable, but not a guarantee that the bondholders would be kept whole. Project company ESCAL, concessionaire of the Castor project, presented its request to relinquish the concession to the Spanish authorities in July 2014 in line with the arrangements contained in the Royal Decree 855/2008. ESCAL had previously requested the consent of the EIB as PBCE guarantee provider, to relinquish their concession, as required under the PBCE contractual agreements.. The Spanish Government accepted ESCAL's request for relinquishment by Royal Decree-law 13/2014 on 4 October, 2014. The project was transferred to Enagas and put under hibernation in November 2014, and ESCAL was repaid the corresponding portion of the amount invested (€1.35 billion). The promoter thereupon fully repaid the bondholders, including the EIB. The €200 million letter of guarantee (PBCE) has been discharged accordingly.

The circumstances that led to the termination of the Castor project in its current form were due to the occurrence of geological risk and not to the PBCE. From a financial point of view, PBCE was crucial to obtain debt financing for Castor, and proved effective in reducing the risk of loss to bondholders. However, due to the occurrence of seismic risk, the project has not been completed.

## Castor gas storage

### PBCE's effect on project's financial viability

The EIB's commitment supported the transaction and the project obtained a credit rating of BBB and BBB+ from S&P and Fitch, respectively, which was a notch above the Spanish sovereign rating. S&P stated that its rating reflected the high revenue predictability and the strategic importance of the project. According to Fitch, the project would have carried a rating of BBB-, excluding the EIB's credit enhancement, which reflects the project's standalone risk. The uplift in comparison with the Spanish's government bond rating was supported by the participation of the EIB as the PBCE provider.

As regards the Castor transaction, nearly all stakeholders believe that the refinancing would not have been successful had the EIB not been involved. The minority that do believe that the project could have been refinanced with bank financing, underline that it would not have covered the rest of the project period and therefore would have required an additional refinancing moment (in addition to being substantially more expensive).

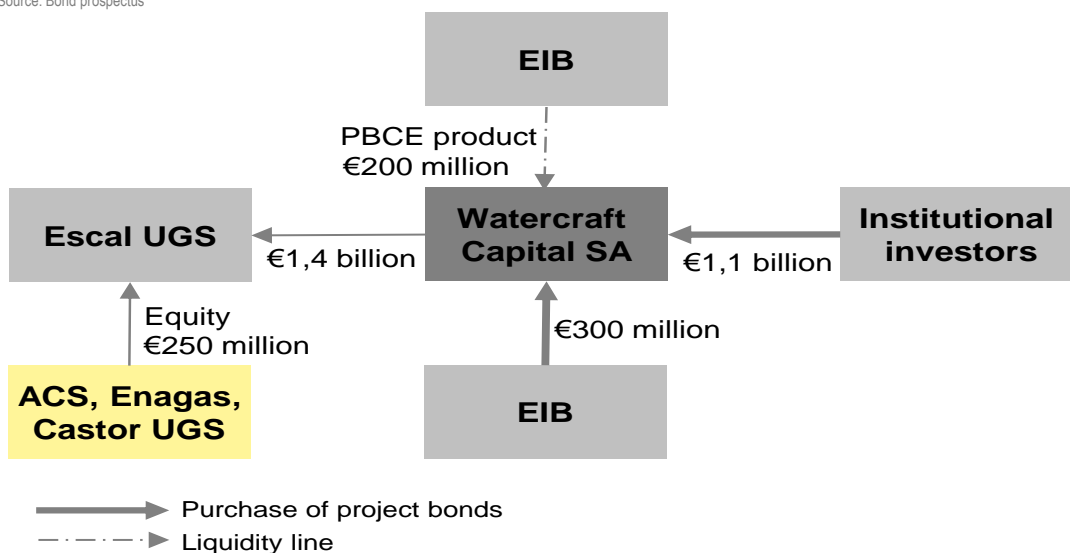
### PBCE's terms and conditions

The project company is Escal UGS, and is funded with €250 million in equity, mainly held by Spanish construction conglomerate, Grupo ACS, and Canadian gas exploration company, Dundee Energy Limited (through its 73.7% interest in Castor UGS Limited Partnership), who respectively hold 66.7% and 24.5%. The remaining 9.8% is held by a Spanish gas distribution company, Enagas.

The EIB provided a €200 million unfunded PBCE guarantee, fully on EIB's risk. The project bond issuance was done using the framework of the PBI and is fully "PBI-compatible". Hence, even if the project Castor was financed with project bond, it has not been directly supported by the EU budget under the EU 2020 Project Bond Initiative (PBI). The €10 million made available for energy projects in the PBI pilot phase was insufficient to cover the €200 million given the €1.4 billion that was eventually raised to refinance the project's debt.

#### Castor financing structure

Source: Bond prospectus



## Castor gas storage

### PBCE's effect on financial terms of the bonds (volume, terms and costs of bond issuance, underwriting and distribution process)

The bond issue was successfully placed, with institutional investors (primarily insurance companies and pension funds) subscribing to €1.1 billion and the EIB for €300 million as an anchor investor. The bond issue was emitted by Watercraft Capital S.A., a Luxembourg SPV established for the purpose of the issue.

Interest was accrued at a rate of 5.756% per annum and was payable semi-annually (each 30 June and each 31 December (each a Payment Date)). The principal would have been redeemed in instalments on each Payment Date with a final maturity on 31 December 2034. The bond had a tenor of 21.5 year, typically for infrastructure financing, but rather long in the market context at that time, and an average life length of 12.5 years. The table below presents the main terms of the transaction.

<b>Issuer</b>	Watercraft Capital S.A.. a special purpose vehicle set up under Luxembourg Law
<b>Project bond size</b>	€ 1.4 billion
<b>Capex</b>	Total construction cost € 1.65bn
<b>Rating</b>	BBB (S&P) and BBB+ (Fitch)
<b>Tenor</b>	21.4 years with a tenor ending in December 2034
<b>Pricing</b>	All-in fixed coupon 5.756%
<b>Average life</b>	12.5 years
<b>Arranger &amp; Bookrunners</b>	Bankia, BNP Paribas, CaixaBank, Crédit Agricole CIB, Natixis, Santander, Société Générale

It is noteworthy that the first project to benefit from the PBCE was located in Spain. The successful financial close demonstrated that bond credit enhancement can support long-term investment in periods of economic turmoil and in difficult markets, such as Spain. Indeed, the bond issue was oversubscribed by €200 million (including the take out of €300 million by the EIB). According to participants, the relatively rapid close of the bond issue was also achieved in part because the issue's rating was able to pierce the sovereign rating ceiling.

### Types of investors

Although insurance companies at that time were reluctant to buy European project bonds rated below the 'A' category due to higher capital charges for long-term debt under the proposed Solvency II regulations, they were actively involved in the operation. From a geographical perspective, German investors represented the largest base (28%), followed by the Benelux (23%, including the EIB), Spain (18%), France (11%), the UK (10%) and Italy (10%).

We understand that in the refinancing of the Castor project, nearly 30 investors from around Europe participated in the bond issuance. There is unanimity that most, if not all, of these investors would not have considered buying the bond without the PBCE and EIB involvement. In this project, the PBCE therefore clearly attracted private financing. It is an example of how the PBCE instrument induces a larger pool of investors to participate, and particularly those who do not have the due diligence capacity for such projects, such as smaller insurance companies and pension schemes.

### Procurement process

The project was brownfield, so no procurement process took place.

### Possible creation or correction of distortive effects

Some stakeholders mentioned concerns when the EIB is both offering the PBCE and senior lending to an infrastructure deal. For example, in the Castor deal the EIB took over 21% of the bond issue, and if their stake would increase to over 25%, they would be able to block any special resolutions. In this case, it is not clear whether the EIB would play its role as the senior tranche or as the subordinated tranche lender. Furthermore, a number of stakeholders expressed concern of the EIB replacing other investors in their role as a senior lender (given the €200m oversubscription). Many stakeholders remarked that the EIB



## Castor gas storage

	should act as a true subordinated debt lender, with strong inter-creditor agreements in place.
<b>Effect on the wider bond markets in Europe</b>	<p>The refinancing of the Castor gas storage project at the end of July 2013 demonstrated a 'halo effect' of the EIB, i.e. the ability to attract investors to a project with a higher risk profile than they would normally accept, and gave confidence to the market in its ability to execute this large deal in a short timeframe ('signalling effect'):</p> <ul style="list-style-type: none"> <li>• Firstly, it showed that the instrument is capable of attracting investors to riskier sovereigns (and indeed obtaining a credit rating for the project one notch above the sovereign credit rating).</li> <li>• Secondly, the speed of the deal execution – the bond was issued in a matter of weeks from circulation of the prospectus and road show – demonstrated that the financial close can be quickly reached also when the EIB supports a project.</li> </ul>
<b>Comparison of PBCE with alternative means of finance (including cost comparison)</b>	<ul style="list-style-type: none"> <li>• Stakeholders generally do not believe that the project would have been able to obtain a credit enhancement from private or national schemes.</li> </ul>
<b>Key take aways</b>	<ul style="list-style-type: none"> <li>• <b>Value of credit enhancement:</b> The successful financial close demonstrated that bond credit enhancement can support long-term investment in periods of economic turmoil and in difficult markets, such as Spain. Without the participation of the EIB and the PBCE, the bond issue would most certainly have not taken place. The relatively rapid close of the bond issue was also achieved in part because the issue's rating was able to pierce the sovereign rating ceiling.</li> <li>• <b>Liquidity:</b> There is a market for project bonds, notably with interest from insurance companies and pension funds (i.e. precisely the 'target' market envisaged for the PBI), who can match their long-term liabilities with long-term assets, and pick up additional yield. This raised debt financing through the issue (€1.4 billion) is significant and demonstrates the level of liquidity in the market.</li> <li>• <b>European investor base:</b> Spain only accounted for 18% of the bond issue versus more than half covered by German and Benelux investors. This demonstrates that the financing market for large infrastructure projects is increasingly trans-national/European.</li> <li>• <b>Credit rating:</b> The bond was issued at a credit rating below A-, which has often been thought as the rating floor for many institutional investors. The fact that the bond was issued at BBB/BBB+ and could still raise significant financing, shows that there is liquidity in the market even for riskier projects, which is a positive signal for the amount of liquidity for inherently less risky projects, e.g. less complex and in better functioning economies in Europe.</li> <li>• <b>Sovereign rating:</b> The project achieved a credit rating one notch above the sovereign rating. This is important, because it gives a perspective for important infrastructure projects in Europe's troubled economies by showing that they can find financing with the right credit enhancement and risk allocation.</li> <li>• <b>Termination:</b> After relinquishment of the concession the PBCE facility would have been available to meet any residual shortfall. The circumstances that led to termination of the Castor project in its current form were due to the occurrence of geological risk and not to the PBCE. From a financial point of view, PBCE proved effective in reducing the risk of loss to bondholders. However, due to the occurrence of seismic risk, the project has not been completed.</li> </ul>

## OFTO round 1 Greater Gabbard

## Background

<b>Sector</b>	Offshore wind transmission, acquisition
<b>Country</b>	U.K.
<b>Year financial close</b>	2013
<b>Type of PBCE</b>	Unfunded
<b>Greenfield / Brownfield</b>	Brownfield
<b>Concession (y/n)</b>	The OFTO will operate under a licence with a 20-year revenue entitlement period awarded by UK transmission regulator Ofgem

The project relates to the transmission assets of the Greater Gabbard offshore wind farm. The 504MW wind farm is located off the coast of Suffolk and consists of 140 3.6MW turbines located in two zones: Inner Gabbard (368MW) and Galloper (137MW).

The offshore wind farm and its related transmission assets were officially opened on 7 August 2013 by Michael Fallon MP, the Energy Minister.

The developers of the wind farm and the associated transmission assets are Scottish and Southern Electric and RWE. Assets transferred to the offshore transmission owners ("OFTO") on financial close include two offshore substation platforms and three 28 mile export cables and transformers, onshore cables and an onshore substation, that connects the Greater Gabbard offshore Wind Farm to the UK electricity grid.

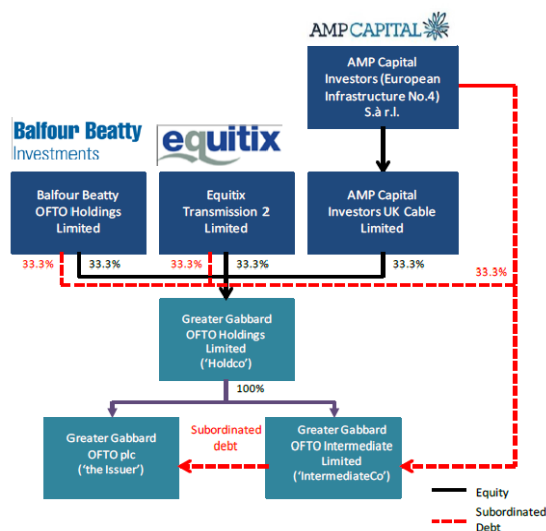
Balfour Beatty Power, Transmission and Distribution is responsible for the management and coordination of all O&M activities.

Greater Gabbard OFTO plc (the Issuer) is owned by a consortium comprising Balfour Beatty OFTO Holdings Limited, Equitix Transmission 2 Limited and AMP Capital Investors UK Cable Limited, organised to, among other things, purchase from Greater Gabbard Offshore Winds Ltd (GGOWL) the offshore transmission system.

In order to operate the Transmission Assets, the Issuer is required to obtain a licence from The Gas and Electricity Markets Authority (the Authority). The Issuer's principal activities will be to own and operate the Transmission Assets in accordance with the terms of its OFTO Licence.

## Greater Gabbard OFTO's corporate structure

Source: Bond Prospectus



## OFTO round 1 Greater Gabbard

**Risks involved in the project**

There are certain factors that may affect the Issuer's ability to fulfil its obligations under the Bonds. In addition, there are certain factors which are material for the purpose of assessing the market risks associated with the bonds. Therefore, the bonds may not be a suitable investment for all investors and involve certain market risks. Risks include inter alia:

- Risk Factors relating to the Electricity Industry and legal and regulatory controls with limited track record (specifically with regard to changes, revocation or breach of the OFTO licence);
- Risk that Retail Price Index (RPI) fluctuations could adversely affect net cash flow;
- Environmental regulations and (compliance with) permissions;
- Counterparty insolvency;
- Adverse Change in Circumstance – restrictions on pass-through costs after loss of revenue, increased operating costs or required additional capital expenditure by the Issuer;
- Incremental capacity – due to the evolving nature of electricity transmission requirements, the Issuer may be required to make additional capacity available Issuer may be required to incur costs to provide such additional capacity which may not be covered by a corresponding adjustment in the Issuer's revenue entitlement;
- Availability Incentive Mechanism;
- General Operational Risks;
- Risk of collision, anchor strike or seabed movement, cable fault, offshore transformer failure.

The Greater Gabbard OFTO has (1) a strong regulatory framework that provides for stable and predictable cash flows over the 20-year life of the project, with an annual cap on any availability reductions; and (2) a proven, albeit short, operational track record, with experienced counterparties. The credit quality is constrained by very high initial leverage of around 90%, which, however, is not uncommon for these types of projects and somewhat mitigated by the amortising nature of the Bonds.

**PBCE's effect on project's financial viability**

The A3 rating assigned to the project reflects the solid credit quality that is offset by high financial leverage, which, however, unlike for more traditional utility financings, will reduce steadily overtime. The (P)A3 rating incorporates a one-notch uplift to reflect credit enhancement provided by EIB.

The base case has an average ADSCR of 1.20x and average DLCR 1.48x. In case of a lifetime availability of the assets at 94% resulting in maximum revenue deduction of 10% p.a. and 160% overall cost overrun the PBCE will reduce senior debt and the project's cover ratios improve thereafter. The PBCE will be fully repaid again and the PBCE would push up the ratios to 2.07x and 1.43x respectively.

**PBCE's terms and conditions**

EIB has provided an unfunded PBCE letter of credit in an amount of GBP45.8 million as a form of subordinated credit enhancement instrument for the Issuer in relation to the Bonds and the Hedging Agreements. The hedge counterparties will hedge certain of its revenue against inflation risk.

The bonds are backed up with an unconditional letter of credit from the EIB through its Project Bond scheme. The PBCE amount is equal to **15%** of the bonds (amortizing with the bonds).

The ratio definitions allow any undrawn PBCE amount to be included in the calculation of net cash flows available for debt service (for the calculation of the Event of Default financial covenant only), which reduces the ability of creditors to step in at an early stage. This substantiates the purpose of the PBCE, which is to allow the project to survive shock events.

The terms for automatic rebalancing, which restrict the use of the PBCE to four consecutive

## OFTO round 1 Greater Gabbard

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scheduled payments dates and three months' worth of debt service in aggregate, provide adequate protection to creditors to ensure that the vast majority of the PBCE amount remains available to reduce the outstanding amount of senior debt in a default scenario. According to Moody's, in such a scenario, the presence of a subordinated first-loss tranche equivalent to 15% (potentially reduced by approximately three months' worth of interest payments) of total debt capital provided can enhance the expected loss of the senior debt to warrant rating uplift of around one notch compared with a transaction that does not benefit from such additional protection (source: Moody's presale rating 18 Nov. 2013).

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## OFTO round 1 Greater Gabbard

**PBCE's effect on financial terms of the bonds (volume, terms and costs of bond issuance, underwriting and distribution process)**

The sponsors provide equity capital in the form of subordinated shareholder loan notes. Equity investors are AMP Capital Investors GBP15.3 million, Equitix (Private Equity) GBP15.3 million and Balfour Beatty (Developer) GBP15.3 million. HSBC and Santander (the Joint Bookrunners) have agreed to subscribe or procure subscribers for the bonds at the issue price of 100% of the principal.

Sponsor Greater Gabbard OFTO Holdings issued GBP305 million senior secured bonds to finance the acquisition of the offshore transmission assets from the wind farm developer. The amortising bonds priced at 125bps over the five per cent 2025 Gilt giving an all-in coupon of 4.137 per cent semi-annually with a book of approximately 3 times subscription amount. The bonds mature in November 2032 and have a weighted average life of about 12 years. The transaction marks **the first use of the public bond markets to access financing from a UK offshore electricity transmission owner**.

Financing cost are ca. 30-35bps more competitive than bank financing (incl. 50% EIB) on a previous OFTO project.

<b>Issuer</b>	Greater Gabbard OFTO Holdings
<b>Project bond size</b>	GBP 305 million
<b>Project Costs</b>	GBP 351 million
<b>Rating</b>	A3
<b>Tenor</b>	Secured Bonds due November 2032
<b>Pricing</b>	Interest accrues on the Bonds at a rate of 4.137 per cent per annum. Interest is payable semi-annually.
<b>Average life</b>	Average life 12 years, modified duration 9.1 years
<b>Arranger &amp; Bookrunners</b>	HSBC, Santander Global Banking & Markets

**Types of investors**

European investors. HSBC & Santander were bond arrangers.

The Sterling bond was largely placed with a wide selection of the UK investor community, but also had strong interest from Canadian and Euro investors.

**Controlling creditor**

The documentation contains provisions for calling meetings of bondholders to consider matters affecting their interests generally. These include provisions to permit defined majorities to bind all bondholders including bondholders who did not attend (or were not represented) and did not vote at the relevant meeting and bondholders who abstained or voted in a manner contrary to the majority.

The Bond Trustee may, without the consent of Bondholders, agree to modification of (subject to certain exceptions), or to the waiver or authorization of any breach of the provisions of bonds.

**Effect on the wider bond markets in Europe**

- Greater Gabbard is the first OFTO project to be funded through capital markets.

**Comparison of PBCE with alternative means of finance**

- Financing cost ca. 30-35bps more competitive than bank financing (incl. 50% EIB) on previous OFTO.

**Key take aways**

- Given the pricing of the bonds Greater Gabbard has proven, being the second project after Castor, that the PBI is not only capable of attracting more liquidity, but also attracting liquidity at a lower price.

## A11 Brugge - Zeebrugge highway

### Background

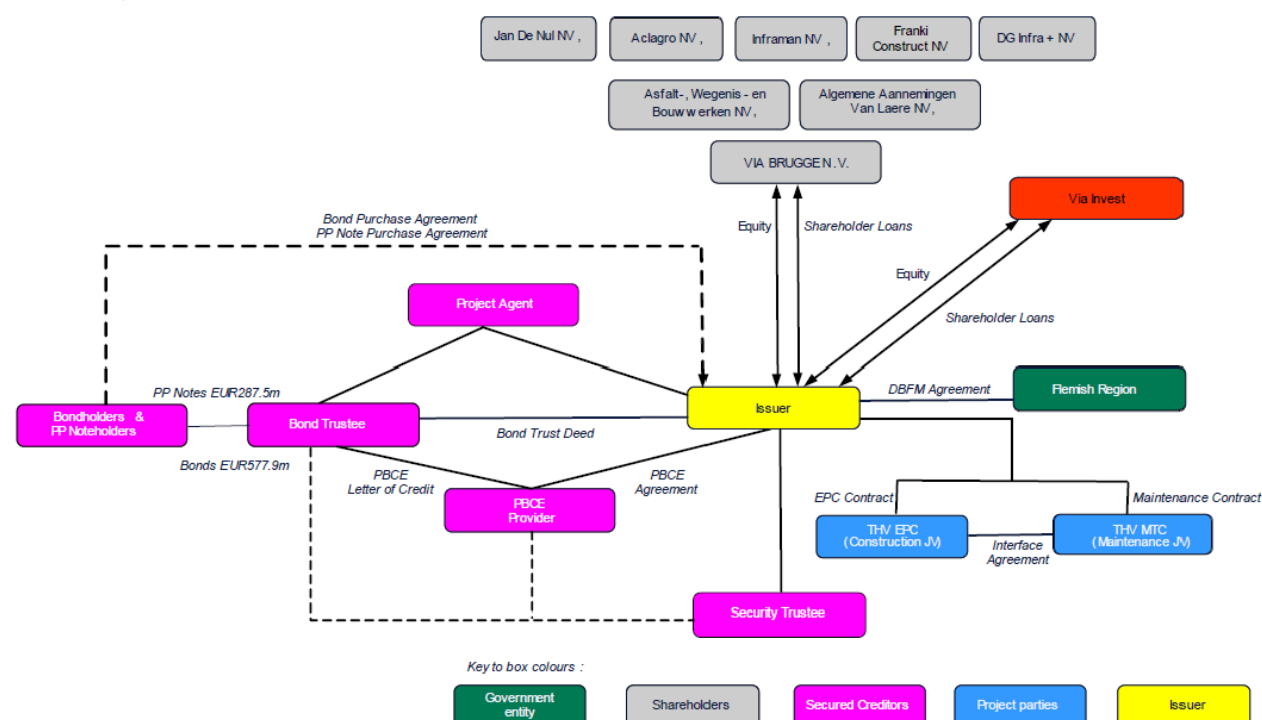
<b>Sector</b>	Transportation
<b>Country</b>	Belgium
<b>Year financial close</b>	2014
<b>Type of PBCE</b>	Unfunded
<b>Greenfield / Brownfield</b>	Greenfield
<b>Concession</b>	30 years

The project is greenfield design, build, finance and maintenance (DBFM) contract for a period of 30 years for the realization of a 12 km stretch of the trunk road link A11 between the regional roads N49.

The Project incorporates nearly 90 civil engineering structures, including twin bascule bridges, a viaduct and three tunnels. Design and construction is scheduled for 3.5 years followed by a 30 years operations period.

### Structure overview A11

Source: Bond Prospectus



Source: Bond prospectus

### PBCE's effect on project's financial viability

The A11 motorway PPP in Belgium is the third project to close with the EIB's project bond credit enhancement (PBCE) product, but the **first greenfield PPP making use of the PBCE**. The PBCE together with a subordinated debt tranche of EIB has increased the credit rating of the bonds by three notches to A3. Without PBCE the underlying credit quality would be Baa3.

### PBCE's terms and conditions

The EIB project bond credit enhancement instrument was used through an unfunded letter of credit representing 20% of senior debt. Project Bond Credit Enhancement facility improves default probability and recovery prospects. The letter of credit provided by the EIB will step down to 10% of Senior Debt in the operational phase.

Use of the PBCE letter of credit during construction phase as an extra source of liquidity

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## A11 Brugge - Zeebrugge highway

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requires confirmation from the independent technical adviser that construction completion can still be reached by the PBCE longstop date, which is 12 months after the scheduled completion date. Failing that, the available element of the PBCE facility would be available to improve the recovery prospects for Senior Debt holders following a termination event by effectively acting as a first-loss tranche.

At the start of the operational phase the Project has over 24 months of debt service liquidity (a combination of the PBCE facility and the six months debt service reserve account). Use of the PBCE facility is restricted to three consecutive scheduled payments dates and three months' worth of debt service. Moody's regards the benefit of the PBCE during the operational period on the project's credit rating between half to one notch.

EIB as provider of the PCBE benefits from the same security package as the senior investors but on a subordinated basis.

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## A11 Brugge - Zeebrugge highway

### PBCE's effect on financial terms of the bonds (volume, terms and costs of bond issuance, underwriting and distribution process)

The Project raised the following in order to meet the costs of the construction period:

- Senior Debt of €578 million – subject to scheduled semi-annual amortisation and with a legal maturity of June 2045. The financing is fully committed by Allianz Global Investors and the EIB (€145 million) at the beginning of the project, but in an innovative development for a project bond, funds will only be drawn down over time during the construction of the project ('delayed draw downs'). The bonds were publicly listed. The EIB is also providing a subordinated credit facility of €115 million.
- Subordinated shareholder loan – €75.6 million and Equity capital – €4.0 million, injected into the project by private partner Via-Brugge and public partner Via-Invest.

The A11 is only the second project in Europe to feature a deferred drawdown structure for project bonds, providing significant cost savings through the mitigation of negative carry.

<b>Issuer</b>	Via A11 NV, a special purpose vehicle owned by privately held Via Brugge NV (60.67 %) and government owned Via-Invest (39.33 %).
<b>Project bond size</b>	€577.8 million (88%)
<b>Project costs</b>	€658 million incl. VAT
<b>Rating</b>	A3
<b>Tenor</b>	28 years
<b>Pricing</b>	4.49%
<b>Average life</b>	20.69 years
<b>Arranger &amp; Bookrunners</b>	Deutsche Bank, Bayern LB, Belfius Bank

### Types of investors

The original bond purchasers are EIB and Allianz.

### Procurement aspects

The bidding consortia were instructed by procuring authority PMV to submit both a bank and a bond financing solution.

### Comparison of PBCE with alternative means of finance (including cost comparison)

The bond solution with use of the PBCE won out as the best value product in full competition with traditional bank solutions, with the margin set during procurement.

### Key take aways

**Negative carry:** the A11 has proven that deferred drawdown scheduled is possible for bond financing resulting in significant cost savings.

**Flexibility:** the reduction of the PBCE letter of credit after the construction period results in a tailored credit enhancement and optimizes EIB's and EU's budgetary commitments. The released amounts under the PBCE can be allocated to new projects and as such increase the multiplier.

**Construction risk:** as the first greenfield transaction the A11 has proven that bond investors are willing to take on construction risk with credit enhancement from the PBCE.

**Public sponsor:** bond investors do not shy away from the less straightforward structure where public and private entities together take a share in the SPV where often the public entities ascertain certain protection clauses.



## Axione broadband

### Background

<b>Sector</b>	Telecommunication
<b>Country</b>	France
<b>Year financial close</b>	2014
<b>Type of PBCE</b>	Letter of Credit for (Senior) Secured Bonds
<b>Greenfield / Brownfield</b>	Brownfield (refinancing)
<b>Concession (y/n)</b>	Yes, the last concession will mature in 2027.

The Axione Infrastructures project is an Information and Communications technology (ICT) PBI project. It is the first and only broadband operation financed under the Pilot Phase of PBI in Europe and the first PBI project in France. The project foresees to cover around 200,000 new households with ADSL service, to connect around 20,000 new households with fibre services as well as to provide fibre service to enterprises and to nearly 500 mobile telephony sites.

Axione Infrastructure SAS (AI) owns a portfolio of 12 Special Purpose Vehicles (SPVs), holding 11 long-term concession contracts with French local authorities. From 2003-2013 Axione signed, designed, financed, rolled-out and operated concessions with local authorities, with durations of 15 to 20 years. These concessions were signed under the Public Initiatives Networks (PIN) scheme which was established by the French government to give local authorities the capability to enter into contracts in order to upgrade and extend the existing broadband infrastructure in rural areas by connecting the local exchanges to the national backbone for broadband with fibre optic. PIN operators must be independent and neutral, and typically receive public subsidies of 40%-70% of initial capital costs. Another SPV will be incorporated by AI in order to hold a 12th long term concession agreement (SIEL). This SPV is already included in the perimeter of the transaction.

The objective of the PIN scheme was to reduce the “digital divide” between urban and rural France, and to open up the rural markets to competition as, in many cases, Orange (as the incumbent) had a monopolistic position and did not offer triple-play services to a large percentage of rural residential customers. In addition, rural businesses were not able to procure competitive fibre connections.

The Company refers to the PIN network as a “caterpillar network” because the route of the network has been designed to capture all residential customers and to provide a connection point to all major business parks in a given area. The SPVs are typically in a duopoly with Orange and sometimes in a monopoly position as it is not economical for the other ISPs to build out their own network in these rural areas without subsidies.

### Risks involved in the project

As a telecommunication company, AI is exposed to changes in technology over time. The roll-out of alternative networks using developing technologies could threaten AI’s market position. According to Moody’s, however, the exposure to emerging technologies is viewed as limited given (1) the Company operates a fibre network which provides more capacity than the end-user will ever require (at least within the life of the debt); and (2) the Company operates in rural areas which are typically the last to benefit from the rollout of new services.

On the other hand, the impact of a roll-out of a 5G network would be credit negative for AI as this technology is expected to provide the end user with mobile capacity at least equivalent to that currently obtained with a fibre broadband network. Such risk is viewed as remote over the medium term given the significant challenges to the network deployment (i.e., mainly the high frequencies needed to be released (20 to 50 times wider than the existing frequencies) and the large amount of new base stations required to be built by ISPs, with huge associated investment costs. The first 5G network globally is not expected to before 2020, with the densest areas to be rolled-out first.

### PBCE’s effect on project’s financial

The presence of the PBCE can (1) reduce AI’s probability of default by providing additional liquidity in stress scenarios; and/or (2) improve the recovery value at default by being

## Axione broadband

### viability

available to reduce the outstanding amount of the Bonds.

The Baa2 rating of the Bonds reflects FCT France Broadband Infrastructures' standalone risk profile, supported by the credit enhancement from the PBCE. The Issuer's standalone risk profile is principally underpinned by (1) its strategic fiber network and entrenched competitive position; (2) low technology and capital expenditure risk; and (3) a successful operating track record. The Issuer's credit quality is constrained by (1) the level of ramp-up risk inherent in the business; (2) exposure to event risk, specifically a change in strategy from competitor Orange; and (3) high leverage of 74% of total capitalisation although somewhat mitigated by the front-ended amortisation profile of the Bonds.

The transaction includes creditor protections that are typical for project financing structures, including designated reserves, restrictions on business activities and additional indebtedness, and a security package that benefits senior creditors and the EIB.

The rating incorporates around one-and-a-half notches of uplift to reflect credit enhancement provided in the form of a 20% on-demand, first-loss and letter of credit from the European Investment Bank's (EIB, Aaa/Prime-1 negative). The PBCE Letter of Credit has credit enhanced the senior bonds from Ba1 to Baa2, i.e. from subinvestment grade to a medium investment grade rating. The PBCE facility has attracted long-term financing from institutional investors via the bond market for the first time to the broadband sector. A bond solution would not have been possible without PBCE. The PBCE operation has been assigned an EIB Loan Grading of E2+. The risk margin equates to 5.47% of the PBCE amount.

### PBCE's terms and conditions

The maximum amount available under the PBCE will be 20% of the outstanding principal amount of the Bonds. Given that the PBCE will be available for drawdown prior to an Issuer Event of Default, a certain amount will likely have been drawn in order to reduce the likelihood of a default. Therefore, in an actual default scenario, and/or rebalancing event, the full amount of the PBCE may no longer be available to improve recovery for senior lenders.

### PBCE's effect on financial terms of the bonds (volume, terms and costs of bond issuance, underwriting and distribution process)

At financial close, AI entered into a senior secured loan of €189 million to refinance existing indebtedness and to pay for costs associated with such refinancing. The Loan will be advanced by Natixis, which will immediately assign all its rights thereunder to FCT France Broadband Infrastructures (FCT). In order to finance the purchase of such receivables, FCT will issue senior secured bonds.

<b>Issuer</b>	FCT France Broadband Infrastructures
<b>Project bond size</b>	€189,100,000
<b>Project Costs</b>	€ 257 million
<b>Rating</b>	Baa2 (Moody's)
<b>Tenor</b>	The bonds amortise over 11 years
<b>Pricing</b>	2.622% per annum, paid semi-annually
<b>Average life</b>	
<b>Arranger &amp; Bookrunners</b>	Natixis (lead arranger & bookrunner), Credit Agricole and Santander (co-rangers)

The Issuer is a French securitisation fund ("fonds commun de titrisation") jointly established by The shareholders of Axione Infrastructures SAS (the Company) are FIDEPPP, a BPCE fund managed by Natixis Asset Management subsidiary Mirova (55%), as well as Caisse des Dépôts et Consignations (30%) and Bouygues Energies & Services and Axione (subsidiaries of Bouygues Construction) (15%).

Axione Infrastructures SAS is the holding company of a group which is a leading provider of broadband services awarded by French local authorities, and holds twelve subsidiaries. Of these twelve SPVs eleven are being in agreement with Local Authorities through concession contracts to design, roll-out, operate, maintain and provide wholesale broadband network

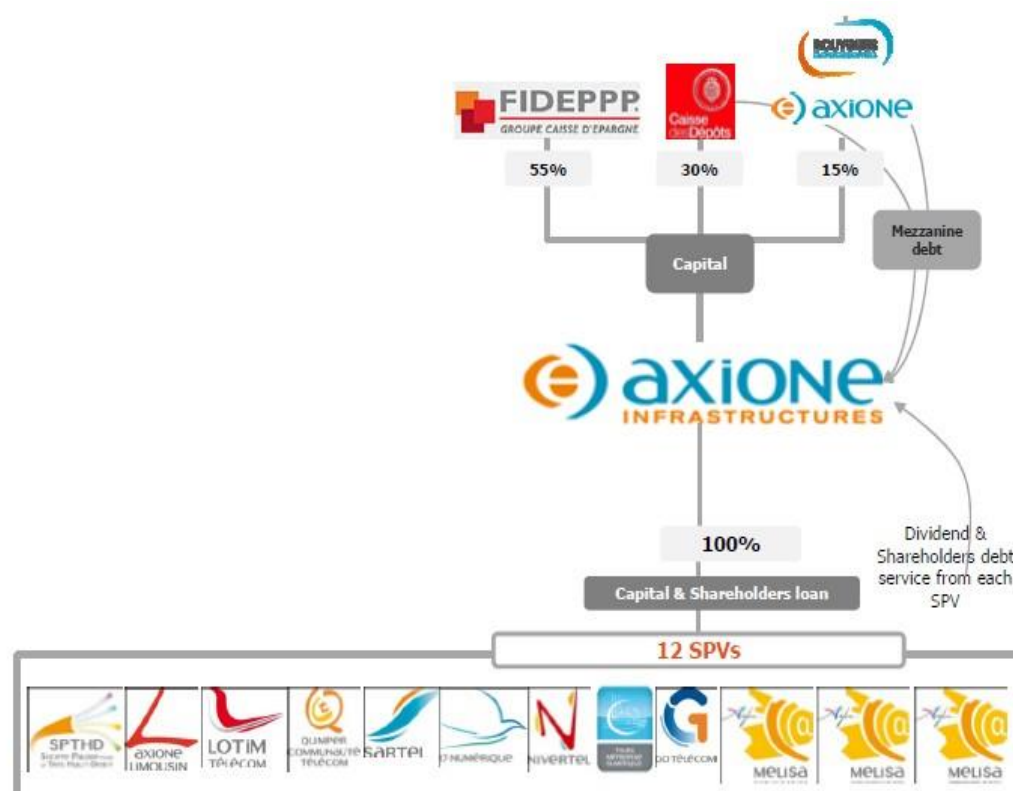
## Axione broadband

services to internet service providers (ISPs) in rural France under the Public Initiative Networks (PIN) framework. The concession Contracts have been awarded between 2003 and 2007. Axione SAS has ensured the main part of the financing needs on its own, CDC being a minority shareholder. At the beginning of 2009 a new financing structure was implemented in connection with the acquisition of a majority stake by FIDEPPP. The structure is shown in the figure below.

The Baa2 rating outlook is stable and reflects the company's track record of successful operations and Moody's expectation that earnings will continue to increase, although potentially less quickly than forecast by management.

### Structure Axione

Source: Bond Prospectus



### Types of investors

The bonds are listed on the Euronext Paris stock exchange with a coupon of 2.622%. Natixis placed the bonds to European institutional investors. The investors also subscribed to a €20 million undrawn capital expenditure facility.

In 2009 shareholders Bouygues Energies & Services (15%) and state bank Caisse des Dépôts (30%) established AI to consolidate Axione's 12 concessions in one company. FCPR FIDEPPP (an infrastructure fund managed by Mirova and fully subscribed to by BPCE, which is the majority shareholder of Natixis) proceeded to buy a 55% share in AI.

In 2009 Calyon, Caisse d'Épargne and Santander provided €189 million of debt and the shareholders invested in €30.1 million of mezzanine bonds and €38 million of equity. 80% of AI's capital is invested with the remainder allocated to periodic updates.

### Effect on the wider bond markets in Europe

Since 2013 the pilot phase of the EIB's PBI initiative has rolled out across Europe. AI is the first telecoms project to reach financial close with the PBCE, and the fourth PBCE deal to close, after financings in Spain, the UK and Belgium. IJGlobal explains that whilst it is true

## Axione broadband

that the project finance approach is used less often in telecoms than other sectors such as transport, there is a market every year. Several recent structured debt deals in Europe include Antin Infrastructure's purchase of Bouygues Telecom's mobile towers in 2012 and in 2014 the UK operator Arqiva launched a refinancing of commercial bank debt partly through a US private placement and with an EIB loan. Natixis is also structuring an US-Brazil sub-sea telecoms cable, Seabras-1. Anne-Christine Champion, global head of infrastructure and projects at Natixis, added, *"there was certainly good institutional appetite for this deal. There is still a great need for broadband infrastructure across Europe and we think this deal will pave the way for future transactions."*

### Comparison of PBCE with alternative means of finance (including cost comparison)

The project includes a re-financing of part of Axione's short-term debt and financing of a new investment programme. The PBCE solution proved to be significantly more competitive against bank debt structures.

### Key take aways

- **Sector & Geography:** the Axione refinancing is the first time that a project bond has been used to finance a European telecom asset, and the first time that a project bond has been used in France.

## A7 highway north of Hamburg

### Background

<b>Sector</b>	Transport
<b>Country</b>	Germany
<b>Year financial close</b>	2014
<b>Type of PBCE</b>	Unfunded, Letter of Credit
<b>Greenfield / Brownfield</b>	Greenfield project bond
<b>Concession</b>	Yes

The project involves the planning and upgrading of a highway section of some 60 kilometres from six to eight lanes, and its maintenance and operation for a period of 30 years. The scope also involves the construction of a noise enclosure tunnel along the route. The construction costs amount to some €600 million. The construction work is handled by Hochtief and Kemna and is scheduled to be completed by December 2018. Having to carry out the lane extension on a fully operational highway without interrupting the normal traffic flow and within a tight time schedule constitutes the main technical challenge in this project. The A7 federal highway is to date the largest privately financed road project in Germany.

### Risks involved in the project

The standalone risk of the project reflects:

- modest construction risk profile, with the risk of a tight construction schedule somewhat mitigated by multizone works and a construction joint venture made up of very experienced contractors;
- modest risk arising from the transition from the construction period to the operational phase, given that (1) operations on the existing roads will already have taken place during the construction phase; (2) as construction milestones are achieved, additional upgraded sections of the road will gradually transfer into full operations; and (3) there are no material high-risk operation and maintenance activities;
- an availability-based payments from an Aaa-rated off-taker and no traffic volume risk;
- fairly straightforward operational and routine maintenance obligations;
- the project is highly leveraged (90%).

### PBCE's effect on project's financial viability

As a result of the PBCE, the A3 rating on the bonds includes a rating uplift of around one-and-a-half rating notches from the standalone credit quality of the project during construction (Baa2). The PBCE letter of credit will fall away after the construction period and even without the PBCE the standalone rating during operations maintains to be Baa2.

### PBCE's terms and conditions

The PBCE letter of credit equals 20% of the bonds i.e. €85 million. The PBCE involves a guarantee fee, which is more than compensated by the lower financing costs as a result of the enhanced credit quality.

## A7 highway north of Hamburg

### PBCE's effect on financial terms of the bonds (volume, terms and costs of bond issuance, underwriting and distribution process)

In August 2014, the financial close of the A7 marked the first infrastructure project in Germany funded by means of a project bond. The project was financed with a combination of privately placed project bonds and short-term bank loans as well as the use of the PBCE.

Besides the project bond in the amount of €430 million, funding is sourced through a revolving milestone bridge facility (€82 million) to bridge four milestone payments of €50 million each and the sponsors' equity. The project bond was issued by the special purpose vehicle Via Solutions Nord, with stakeholders HOCHTIEF PPP Solutions, DIF and the KEMNA Group.

This project is the first time that EIB allowed the use of the subordinated letter of credit under the project bond credit enhancement (PBCE) scheme with both bank and bond debt ranked above. The A7 features a milestone bank facility and a private placement of senior bonds, while on previous transactions EIB resisted this due to potential for enforcement action from senior lenders.

<b>Issuer</b>	
<b>Project bond size</b>	€429 million
<b>Capex</b>	ca. €600 million, funding requirement ca. €770 million
<b>Rating</b>	A3
<b>Tenor</b>	2043 maturity
<b>Pricing</b>	2.957%
<b>Average life</b>	16 years
<b>Arranger &amp; Bookrunners</b>	Société Générale as Lead Manager, Global Coordinator and Rating Advisor, and placed in cooperation with Crédit Agricole.

### Types of investors

The initial bond subscribers are experienced infrastructure investors from North America, Germany and other EU countries:

- AXA
- KfW IPEX
- MassMutual
- Aegon
- ING / Nationale Nederlanden
- SunLife
- EIB

### Procurement aspects

The procuring entity did not prescribe a project bond solution, but did facilitate the use of such a solution. Eventually the competing consortium (Bilfinger Berger and Bunte) did not submit a final offer.

The intense competitive process between banks and bond investors towards bid submission favoured the capital market due to:

- avoidance of negative cost of carry thanks to monthly draw-downs in accordance with construction progress.
- binding financing commitments from the bond investors with a validity period of up to six months. The investors and sponsors took exposure to market risk in this period, with the uncertainty of the outcome of the competitive procedure. This is in contrast with the A11 in Belgium where the sponsors selected to use a project bond after the preferred bidder stage.
- increased flexibility in the financing structure by combining the project bonds with a revolving short-term bank facility.

## A7 highway north of Hamburg

- rating enhancement through utilization of the PBCE in the critical construction phase and, as a result, efficient pricing throughout the whole term.

Different financing instruments were combined in a competitive bidding process and complex intercreditor issues were negotiated within the 12 week time frame after bid award.

The complexity that the milestone bridge facility brought along to the project's structure nearly forced the sponsors to abandon the PBCE.

<b>Effect on the wider bond markets in Europe</b>	The A7 was made accessible to an international investor base, meaning that it sets standards beyond Germany and underlines the role which international investors can play in the infrastructure market.
<b>Comparison of PBCE with alternative means of finance (including cost comparison)</b>	The A7 is the first project bond with PBCE issued in Germany that provided a more favourable alternative to long-term bank debt and unwrapped bond solutions.
<b>Key take aways</b>	<ul style="list-style-type: none"> <li>• <b>Global investor base:</b> the PBCE for the A7 has shown that it is capable of attracting investors from both Europe and North America towards greenfield projects with construction risk.</li> <li>• <b>Market risk:</b> binding financing commitments from the bond investors with a validity period of up to six months. The investors and sponsors took exposure to market risk in this period, with the uncertainty of the outcome of the competitive procedure.</li> <li>• <b>Competition:</b> first greenfield project where the bond solution was preferred and where public authorities did not prescribe such a solution.</li> </ul>

## Gwynt y Mor

### Background

<b>Sector</b>	Energy (offshore wind energy)
<b>Country</b>	Wales, United Kingdom
<b>Year financial close</b>	2015
<b>Type of PBCE</b>	Letter of Credit for (Senior) Secured Bonds
<b>Greenfield / Brownfield</b>	Brownfield, asset backed security
<b>Concession (y/n)</b>	Yes, 20 years (perpetual license)

Gwynt y Mor OFTO plc ("GyM"), a public limited liability company in England and Wales, is owned by a consortium comprising Balfour Beatty OFTO Holdings Limited and Equitix Transmission 2 Limited (shown in the figure below). The company has purchased from Gwynt y Mor Offshore Wind Farm Limited an offshore transmission system which includes subsea cables, offshore substations and transformers, onshore cables and an onshore substation that connects the Gwynt y Mor Offshore Wind Farm to the UK electricity grid. The Wind Farm is located within the Liverpool Bay area of the Irish Sea, approximately 15km off the North Wales coast with the onshore substation on the north coast of Wales to the south of St Asaph Business Park. The wind farm site occupies an area of approximately 79km.

GyM has issued GBP339 million of senior secured bonds to finance the acquisition of the GyM offshore transmission assets. The OFTO assets connect the 576 megawatt (MW) Gwynt y Mor wind farm, which comprises 160 Siemens 3.6 MW wind turbine generators, to the onshore transmission network. The OFTO assets that are acquired with the proceeds from the Bonds comprised two offshore substation platforms (OSPs), four offshore transformers (two per OSP; Siemens supplied); four submarine cables (NKT supplied; two from each OSP); four onshore cables (Prysmian supplied); and an onshore substation with two transformers.

GyM will operate under a perpetual licence with a 20-year revenue entitlement period awarded by Ofgem, which is also the regulator for the UK onshore energy networks. Under the licence, the project will receive an index-linked revenue stream based on a minimum availability assumption of 98% with a bonus/penalty system if availability deviates from this target level.

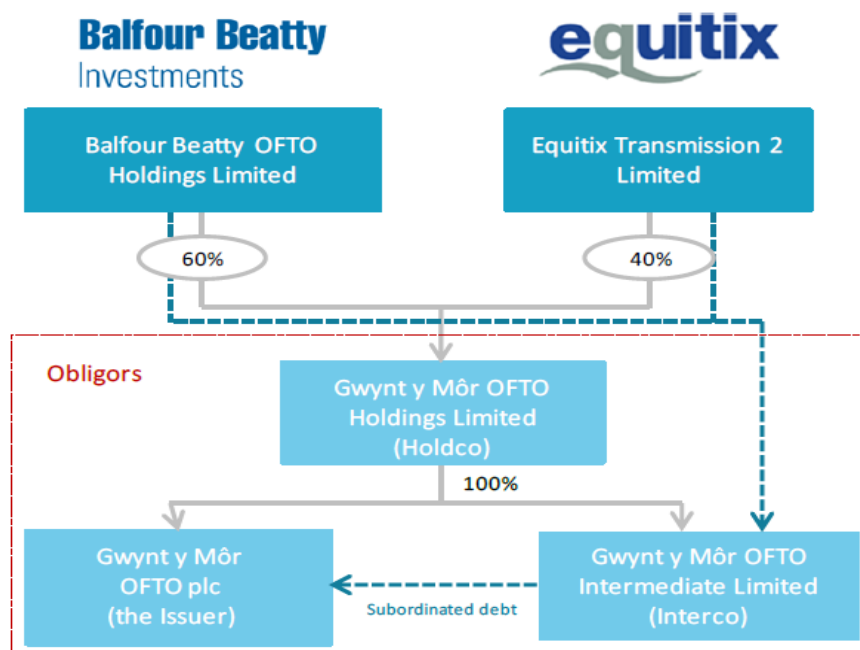
GyM is a Round 2 OFTO, so rewards and penalties will be reflected in the revenue stream for the following year. This is viewed as a positive feature as if the OFTO has a major outage, revenues are not impacted until the following period giving GyM time to claim under its insurance policies and/or under the licence mechanisms to address exceptional events.



## Gwynt y Mor

### Structure Gwynt Y Mor

Source: Bond Prospectus



### Risks involved in the project

Key risks associated with the operations of the GyM OFTO assets similar to Greater Gabbard. Risks are related to either cable failure or transformer failure. As a primary mitigant, the asset location and ground conditions for the GyM OFTO are relatively benign compared with similar projects, limiting the risk of accidental damage to the OSPs and cables. The substation platforms are located within the wind farm generating assets thereby minimising shipping traffic, and the firm seabed, which is present in the main cable route area, is fairly resistant to penetration by anchor drag or trawling equipment.

GyM operates in a difficult natural environment within which it is hard to manage unplanned maintenance. In the event of unforeseen maintenance requirements, the offshore location of the project introduces additional risk, making any repair works more difficult and weather dependent, potentially increasing the operational and financial impact of any outage.

### PBCE's effect on project's financial viability

The PBCE fulfils two functions: (1) preventing an Event of Default, i.e., reducing the overall probability of the project defaulting; and (2) improving senior lenders' recovery in an ultimate default scenario.

The A3 rating on the Bonds is based on the project's stand-alone risk profile, supported by the GBP 51 million credit enhancement provided as part of the EIB's PBCE. The stand-alone risk profile of the Gwynt y Mor OFTO is principally underpinned by (1) a strong regulatory framework that provides for stable and predictable cash flows over the 20-year life of the project, with an annual cap on any availability deductions; and (2) low operating risk with all operating and maintenance activities contracted to experienced counterparties. GyM's credit quality is constrained by very high initial leverage of around 90% of total capitalisation, albeit this is not uncommon for projects of this nature and somewhat mitigated by the amortising nature of the Bonds. According to Moody's, the A3 rating on the Bonds includes rating uplift of around one notch from the stand-alone credit quality of the project due to the presence of the EIB PBCE.

### PBCE's terms and conditions

On-demand letter of credit from the EIB is available to meet ongoing payments where necessary, and is drawn down in full if certain negative events occur, thus improving senior lenders' recovery prospects. The letter of credit provided by the EIB is for an amount of 15%

## Gwynt y Mor

of the outstanding senior debt. It will provide additional liquidity to the project if required and will also be used to reduce senior secured debt if certain financial conditions are breached or the senior debt is accelerated, and so acts as a first-loss credit support in the financing structure.

### PBCE's effect on financial terms of the bonds (volume, terms and costs of bond issuance, underwriting and distribution process)

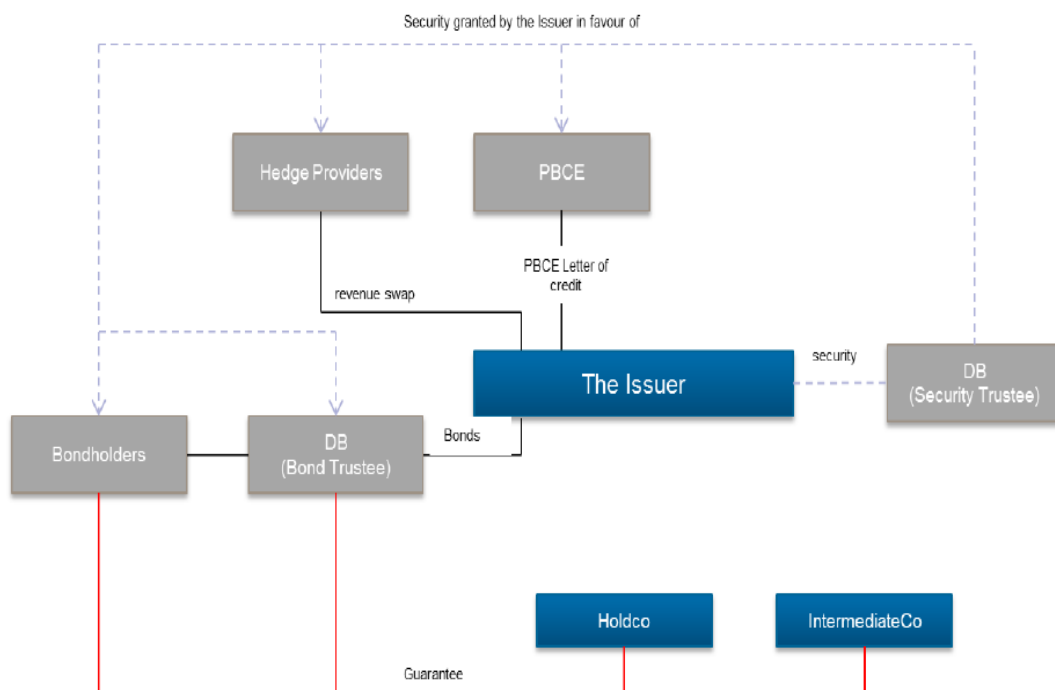
A Balfour Beatty and Equitix consortium has issued GBP339 million of senior secured bonds for its GBP353 million acquisition of the Gwynt y Mor offshore wind farm's transmission assets in the UK. The Secured Bonds of GBP339.2 million (2.778 per cent) are due February 2034. The bonds are priced at 110bp over the nearest Gilt, for a coupon of 2.778%, and have a 19-year life.

The project's sponsors, Balfour Beatty Infrastructure Investments Ltd. (60%) and Equitix Fund II LP (40%), hold their share in the project through Gwynt y Mor OFTO Holdings Ltd, the holding company (HoldCo) of Gwynt y Mor OFTO PLC, which holds the transmission assets. The Bonds will be supported by an unconditional and irrevocable, revolving letter of credit provided by the European Investment Bank (EIB) through its Project Bond Credit Enhancement (PBCE). The sponsors will also provide equity capital in the form of subordinated shareholder loan notes through Gwynt y Mor OFTO Intermediate Ltd. (IntermediateCo), a sister company of Gwynt y Mor.

IntermediateCo and HoldCo will each unconditionally and irrevocably guarantee GyM's obligations under the Bonds and grant security over their assets, including the shares in GyM for the benefit of the security trustee.

### Structure Gwynt Y Mor

Source: Bond Prospectus



## Gwynt y Mor

<b>Issuer</b>	Gwynt y Môr OFTO plc.
<b>Project bond size</b>	GBP339.2 million
<b>Rating</b>	A3 (Moody's)
<b>Tenor</b>	19 years
<b>Pricing</b>	2.778% per annum (interest is payable semi-annually)
<b>Average life</b>	11.4 years, modified duration 9.4 years.
<b>Arranger &amp; Bookrunners</b>	HSBC is acting as sole arranger, with MUFJ and SMBC joining as joint bookrunners.

The transfer value of the project is GBP352 million. However, the all-in cost of the deal consists of the GBP339 million bond, and GBP45 million subordinated debt from the sponsors. The bonds benefit from a GBP51 million PBCE revolving letter of credit. The **letter of credit is equivalent to 15% of the outstanding senior debt** and will provide additional liquidity to the project if required and will also be used to reduce the senior secured debt balance if the project breaches certain financial covenants.

Ratings agency Moody's has assigned the project an A3 rating. It said this "reflects the solid credit quality [...] strong regulatory regime and project finance features" but is "partly offset by high financial leverage."

<b>Types of investors</b>	HSBC acted as sole arranger, while MUFG and SMBC were joint bookrunners. HSBC ran a roadshow for the bonds and met with 40 accounts, 37 of which subscribed. The investor breakdown is 78% fund managers, and 22% pension funds and institutional investors. 98% of these investors are UK-based.
<b>Controlling creditor</b>	Secured creditors are the Security Trustee (in its own capacity and on behalf of the other Secured Creditors), any Receiver or Delegate, the Bondholders, the Deutsche Trustee Company Limited (in its own capacity and on behalf of the Bondholders), HSBC Bank plc, Sumitomo Mitsui Banking Corporation, Mitsubishi UFJ Securities International plc, the European Investment Bank, Gwynt y Môr Intermediate Limited, Gwynt y Môr Holdings Limited, and the Central Bank of Ireland.
<b>Effect on the wider bond markets in Europe</b>	In Europe (and in the U.S. and elsewhere) there is increased political and regulatory scrutiny of the asset-backed securities industry. This has resulted in a raft of measures for increased regulation which are currently at various stages of implementation and which may have an adverse impact on the regulatory capital charge to certain investors in securitisation exposures and/or the incentives for certain investors to hold asset-backed securities, and may thereby affect the liquidity of such securities.
<b>Comparison of PBCE with alternative means of finance (including cost comparison)</b>	The pricing is lower than the Greater Gabbard OFTO bond (110 bps vs. 125 bps). According to IJGlobal Gwynt y Mor's lower coupon reflects that (1) the reduction in the underlying benchmark gilt yields, (2) the market's increased familiarity with the OFTO sector and (3) Sterling has been under-supported and there's an appetite for this kind of stable, regulated asset.

## Port of Calais

<b>Background</b>	<b>Sector</b>	Transport
	<b>Country</b>	France
	<b>Year financial close</b>	2015
	<b>Type of bond</b>	Senior debt (letter of credit) and private placement
	<b>Greenfield / Brownfield</b>	Brownfield
	<b>Concession (y/n)</b>	Yes, 50 years

The 50-year concession entails the transformation of the Boulogne-sur-Mer fishing port and the Calais ferry port sites into a single port. The Calais Port 2015 expansion project costs roughly €863 million and includes:

- Building a new 3km seawall and a 90-hectare dock to allow for port developments;
- 44 hectares of new quayage using material dredged from the dock;
- Constructing berths for the latest generation of mega ferries;
- Developing required road and rail connections;
- A new rail-road-sea terminal where the futures rail and sea motorways meet it from southern France and the rest of Europe.

For the Boulogne-sur-Mer port the project will strengthen the fishery and fish markets with investments in facilities for services to fisherman and product logistics.

The port is vital infrastructure for connecting the UK and Ireland to continental Europe, for passenger, freight and cargo. The financing covers the Calais Port 2015 expansion plan which will double the port's capacity with a new terminal, and combine operation of the two ports.

Construction at Calais started in March 2015 after the concession signed in February with the Nord Pas de Calais Regional Council. Construction is due to complete in January 2021.

<b>Risks involved in the project</b>	The financing separates operating risks from construction and maintenance risks, through two separate project companies.
	The Société de Projet des Ports du Détroit special purpose vehicle ("SPV") is carrying out the design, build contract, whereas the Société d'Exploitation des Ports du Détroit is the operating company and owner and holds the concession.
	The operating SPV will collect revenues from the operations of the port. It will use the revenues to finance operations but will also make regular payments to the construction SPV to reimburse the capital expenditure, once the new facilities are available. The Nord-pas-de-Calais Region, as grantor of the concession, has guaranteed those payments in case of shortfall.

## Port of Calais

<b>Financial terms of the bonds (volume, terms and costs of bond issuance, Terms and conditions</b>	<table> <tr> <td><b>Issuer</b></td><td>Meridiam and CDC Infrastructure</td></tr> <tr> <td><b>Project bond size</b></td><td>\$554.75m (€504m)</td></tr> <tr> <td><b>Arranger &amp; Bookrunners</b></td><td>Allianz Global Investors</td></tr> </table>	<b>Issuer</b>	Meridiam and CDC Infrastructure	<b>Project bond size</b>	\$554.75m (€504m)	<b>Arranger &amp; Bookrunners</b>	Allianz Global Investors
<b>Issuer</b>	Meridiam and CDC Infrastructure						
<b>Project bond size</b>	\$554.75m (€504m)						
<b>Arranger &amp; Bookrunners</b>	Allianz Global Investors						
	<p>Meridiam and CDC Infrastructure have achieved financial close on an €863 million (\$949 million) financing package for the concession for Calais Port and the Boulogne-sur-Mer fishing port in north-west France.</p> <p>The Calais Port 2015 project marks the seventh use of the European Investment Bank's project bond credit enhancement ("PBCE") pilot programme and also featured another enormous private placement, of €504 million (\$554 million), taken entirely by Allianz Global Investors during the construction stage. Allianz Global Investor-managed entities have subscribed to all the senior bonds with a long tenor of 40 years, and staggered drawdowns over construction. The coupon for the private placement bonds is 3.7% during construction and 4.5% afterwards.</p> <p>The project debt benefits from the European Investment Bank's PBCE product, through a €50.4 million letter of credit equivalent to 10% senior debt. The rating is private but investment grade (i.e. BBB (Fitch)).</p>						
<b>Types of investors</b>	<p>The private equity sponsors, Meridiam and CDC Infrastructure (each holding 40%), signed the concession agreement for the €912 million Calais Port 2015 expansion, with the Nord Pas de Calais Regional Council and the Société d'Exploitation des Ports du Détroit. The Chamber of Commerce &amp; Industry Côte D'Opale holds a 20% stake.</p> <p>Therefore, the consortium comprises Côte d'Opale Chamber of Commerce and Industry (CCI) (previous concessionaire of the port), the Northern France Region CCI, CDC Infrastructure and Meridiam. Overall they provided roughly €116 million in equity.</p> <p>The public sector eventually provided a total of €270 million in subsidies from the EU and local authorities, after it took until February 2015 to arrive at this figure. The European Commission's 2014-2020 Connecting Europe Facility provided €98.5 million.</p>						
<b>Key take aways</b>	<ul style="list-style-type: none"> <li>• The Port of Calais was the first project to use project bonds in the port sector.</li> <li>• The project blended EU grants and a financial instrument (PBCE) to finance part of the project costs.</li> </ul>						

## Appendix D: Interview Guide

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14. Interview framework for evaluation questions and judgement criteria
15. Interview guide for all stakeholders

## INTRODUCTION

The following table elaborates on the evaluation framework that was presented in our proposal. The table indicates which evaluation questions and judgement criteria are relevant to be discussed with the various stakeholders. The Interview Guide hereafter is the basic format for all stakeholder interviews and covers all evaluation questions and judgement criteria. The table below refers to the questions in the Interview Guide that will be discussed with each interviewee.

## INTERVIEW FRAMEWORK

Questions based on Tender Specifications par. 2.6	Judgement criteria	EC-EIB interviews	Equity investor & sponsor interviews	Procuring Authority interviews	NGO interviews	Bond investors & structuring banks	Legal advisors & rating agency interviews
<b>I. EFFECTIVENESS</b>							
(1.1.) Did the Project Bond Initiative help achieve priority projects on the TEN-T, TEN-E and ICT and broadband networks?	Proportion of beneficiary projects of the PBCE that are priority projects	X	-	X	-	-	-
	Feedback on the role and support that the PBCE gave to the beneficiary projects	X	X	X	-	X	X
(1.2.) To what extent has the PBI helped mobilise additional volume of financing for infrastructure projects in the TEN-T, TEN-E and ICT and broadband sectors?	Extent to which senior debt investors would have supported the beneficiary projects without the PBCE instrument	-	-	-	-	X	-
	Extent to which sponsors have benefited indirectly from the PBCE						
(1.3.) To what extent has the PBI encouraged debt capital market financing of infrastructure	Evolution of capital market financing of infrastructure projects since the establishment of the PBI pilot phase	X	X	-	-	X	-
	Appreciation of institutional investors toward project bonds since the establishment of the PBI pilot phase	-	-	-	-	X	-
<b>II. EFFICIENCY</b>							
(2.1.) How does the target leverage of the project bond instrument compare with the achieved (and expected) leverage on the signed (and expected to be signed) PBCE transactions?	Comparison between the targeted multiplier for the PBCE when the instrument was established and the achieved multiplier for the beneficiary projects of the PBCE	X	-	-	-	-	-

	Comparison of leverage on projects with EU budget support and projects at EIB's own risk	X	-	-	-	-	-
(2.2.) Has the size of the EU contribution allocated to the initiative been sufficient/ appropriate to achieve the related policy objectives?	Extent to which the level of the EU contribution was sufficient to meet the needs of the targeted projects (i.e. was the EU contribution appropriate for the size/volume of PBI projects)	X	X		X		
	Feedback from stakeholders on the appropriateness of the EU contribution allocated to the initiative	X		X	X	X	
(2.3.) To what extent are the PBI instrument and the resulting bonds competitive with other available sources of financing?	Comparison matrix between PBI and other bank and non-bank financing solutions	-	-	-	-	x-	-
	Satisfaction of financing community and procuring authorities with PBI	X	X	X	-	X	
	Pricing differential between the PBCE solution and other financing options for the projects (if applicable)	X	X	X	-	X	X
(2.4.) How does the PBI compare to the other risk-sharing facilities in terms of results at a similar stage of maturity of the instrument?	Take-up rates of PBI versus other risk sharing facilities (e.g.) LGTT in the first three years of operations	X	-	-	-	-	-
	Satisfaction of project stakeholders of PBI compared to other risk sharing facilities (e.g. LGTT)	X	X	X	-	X	-
	Comparison of the PBI versus other risk sharing facilities in terms of achieving policy objectives in the first three years of operations	X	-	X	-	-	-
<b>III. RELEVANCE</b>							
(3.1.) To what extent has this funding been better able to match the requirements of long-term infrastructure projects, for example in terms of product design and maturity of projects?	Comparison matrix between PBI instrument and other sources of funding available to infrastructure projects	X	X	X	-	X	X



	Instrument mapping – benchmarking of the PBCE versus other public and private financial instruments and funding sources for infrastructure projects	X	X	X	-	X	X
	Feedback from bond investors on the product design	-	-	-	-	X	X
(3.2.) Has the EU involvement in both reputational and budgetary terms increased the credibility of the PBI vis-à-vis investors?	Knowledge of investors on the role of the EU in the PBI	-	X	-	-	X	-
	Feedback on sufficiency of financial support and expectations	X	X	-	-	X	-
(3.3.) Has the funding been a relevant response to the achievement of related policy objectives?	Extent to which the PBI has contributed to the achievement of the initial policy objectives	X	-	X	X	-	-
	Extent to which the PBI pilot phase reached its own objectives set out at its establishment	X	-		X	-	-
	Comparison with other policy options aimed at increasing investment in EU priority projects	X		X	X		
(3.4.a.) Would other forms of credit enhancement or insurance better correspond to market needs?	Satisfaction of financing community with PBI	-	X	-	-	X	-
	Usage of other financing instruments other than PBI	-	X	-	-	X	-
	Feedback on the modalities of PBI	-	X	-	-	X	-
(3.4.b.) How, if necessary, could the PBI solution be made more attractive?	Comparison matrix between PBI and other bank and non-bank financing solutions	X	X	X	-	X	X
	Satisfaction of financing community with PBI	X	X		-	X	X
	Feedback on the modalities of PBI	X	X	X	-	X	X
<b>IV. EU ADDED VALUE AND ADDITIONALITY</b>							
(4.1.a.) What is the EU added value of the PBI to TEN-T, TEN-E and ICT and broadband projects?	Number of TEN-T, TEN-E and Digital Agenda projects which had other financing alternatives other than PBI	X	-	-	-	-	-

	Extent to which the presence of the PBCE led to improved conditions for TEN-T, TEN-E and Digital Agenda projects	X	-	-	-	-	-
	Feedback from stakeholders regarding how well the PBCE addresses a market gap/ failure	-	X	X	-	X	-
(4.1.b.) To what extent and by which means can the EU added value of the instrument be maximised?	Satisfaction of financing community with PBI	-	X	X	-	X	-
(4.2.a) To what extent has the EU contribution to the PBI been additional over the market alternatives available for long-term debt financing?	Number of projects for which other capital market solutions, besides PBI, were considered	X	X	X	-	X	-
	Pricing differential between the PBCE solution and the available alternative financing solutions	X	X	X	-	X	-
(4.2.b.) How can the EU budget best be used to mobilise the maximum amount of private funding?	Reasons provided for failure to close financing of large European infrastructure projects, and in particular, trans-European projects	X	X	X	-	X	-
	Ranking of attractiveness of various available financial instruments by institutional investors	-	-	-	-	X	-
	Survey of most important investment criteria for institutional and other infrastructure investors	-	X	-	-	X	X
(4.3.) To what extent is the PBI coherent with other relevant EU or Member States financial instruments? Are there any overlaps or contradictions, for example in terms of risk sharing, design etc. across these instruments?	Mapping of EU and national financial instruments	X	X	X	-	-	-

Name of interviewee:

Organisation/Unit:

Date of interview:

## I. Context: interviewees' involvement with the PBI pilot phase

1. Which PBI pilot phase projects have you been involved with as part of your professional responsibilities?  
Note to interviewer: Please show list of projects and select those indicated.

2. *Note to interviewer: Question for Bond investors.*

a. Please describe your experience with the Project Bond Credit Enhancement (PBCE) facility.

Invested in a project bond using the PBCE	<input type="checkbox"/>
Reviewed the PBCE in a transaction which has not yet reached Financial Close	<input type="checkbox"/>
Reviewed the PBCE in a transaction, but the PBCE option was not retained	<input type="checkbox"/>
Reviewed the PBCE in a transaction, but decided not to invest	<input type="checkbox"/>
No transaction experience with PBCE, only know it from market knowledge	<input type="checkbox"/>
Never heard of PBCE	<input type="checkbox"/>
Other (please explain)	<input type="checkbox"/>

3. What was the process for selecting and approving projects?

*Note to interviewer: Question for the EIB.*

4. Which criteria were used for selecting and approving projects?

*Note to interviewer: Prompt interviewee to indicate the 3 most important criteria.*

## II. EFFECTIVENESS

5. In your opinion, did the Project Bond Initiative help **achieve priority projects** on the TEN-T, TEN-E and ICT and broadband networks?

*Note to interviewer: Please ask interviewee to explain their answer*

	TEN-T	TEN-E	ICT
Yes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. To what extent has the PBI helped mobilise **additional volume of financing** for infrastructure projects in the TEN-T, TEN-E and ICT and broadband sectors?
7. In your opinion, would the PBI pilot phase projects, you are involved in, mobilise private financing support without the intervention of the PBCE?  
*Note to interviewer: Please ask interviewee to explain their answer.*

	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
No private financing support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some private financing, but not sufficient to meet the investment needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient private financing to meet the investment needs, but on much more expensive terms (e.g. >50 bps, mini-perm structure, coverage ratios, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient private financing to meet the investment needs, but on slightly more expensive terms (e.g. <50 bps)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient private financing to meet the investment needs on relatively equal terms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. To what extent has the PBI **encouraged debt capital market financing** for infrastructure projects?
9. How have you seen the capital market financing of infrastructure evolve since the establishment of the PBI pilot phase? Did the PBI pilot phase contribute to this evolution and if yes, to what extent?
10. To what extent did you as a sponsor benefit (indirectly) from the PBCE?
11. What is your view on the long term development in infrastructure market financing conditions going forward?
12. How would this impact the future added value of PBCE?
13. What flexibility and/or amendments is/are required from the PBCE instrument to make/keep it attractive in the long term?
14. In your opinion, is the risk allocation between private investors and the EIB as the PBCE provider optimal under the PBI?  
*Note to interviewer: Please ask interviewee to explain their answer*

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

15. In your opinion, will the PBCE help establish the infrastructure sector as a less alternative asset class (more liquid assets & institutionals increasing infrastructure assets under management)?  
*Note to interviewer: Please ask interviewee to explain their answer*

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

### III. EFFICIENCY

16. The Connecting Europe Facility (CEF) will allocate approximately € 2.8 billion to trans-European infrastructure projects until 2020 through the use of financial instruments. Do you think this financial support is sufficient to have an impact on the market, in terms of risk coverage for example, compared to PBI (cf. estimated investment need in the previous question)?

*Note to interviewer: Please ask interviewee to explain their answer*

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

17. We understand that the targeted total investment with the first part of the PBI pilot phase (ending December 2014) is €4.5 billion. For the three sectors (TEN-T, TEN-E & ICT) and subsequently the projects in which the PBCE is one of the financing options, was the EU contribution of €230 million (20x multiplier effect) sufficient to meet the needs of the targeted projects (given the size and volume of the PBI approved projects) and the range of risks to be covered?

*Note to interviewer: Please ask interviewee to explain their answer.*

	TEN-T	TEN-E	ICT
Yes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Please indicate whether you agree or disagree with the following statements:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
EU contribution to PBI has helped encourage investment in the EU's target sectors of transport, energy and ICT infrastructure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EU contribution to PBI has helped to increase the volumes provided by debt capital market financing and other non-bank debt for EU infrastructure projects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EU contribution to PBI has offered added value in the area of infrastructure financing and should therefore be further used in the Connecting Europe Facility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other contribution:					
Reputation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Budgetary support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Creditworthiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Certainty of delivery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other reasons (please describe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. How would you rate your satisfaction of the PBI and other risk sharing facilities (in overall terms, i.e. opening up capital debt market, risk coverage & credit enhancement, design, transaction costs & financing costs, etc.)?

*Note to interviewer: Please ask interviewee to explain their answer*

Risk sharing facility	Poor	Fair	Good	Very good	Excellent	Don't know
PBI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LGTT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
UK Guarantee Scheme Pebble	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pebble	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assured Guaranty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## IV. RELEVANCE

20. To what extent has the PBI structure, in general comparison with other public and private financial instruments, been better able to match the requirements of long-term infrastructure projects:

*Note to interviewer: Please ask interviewee to explain their answer.*

Poor	Fair	Good	Very good	Excellent	Don't know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Which other forms of credit enhancement or insurance are more attractive options than the PBI?

*Note to interviewer: Please ask interviewee to explain their answer.*

22. How would you describe your satisfaction with the following elements of the PBCE product design (term sheet) in comparison with other funding structures?

*Note to interviewer: Please ask interviewee to explain their answer.*

	Very negative	Negative	Neutral	Positive	Very positive	Don't know
Credit enhancement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Very negative	Negative	Neutral	Positive	Very positive	Don't know
Ticket size (financing commitment)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pricing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage ratios	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cash flow waterfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reserve accounts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conditions precedent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security package	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are there other points not listed above that are particularly important?

23. Is PBI meeting today's demand (in terms of investment needs)?

Not at all	A little	Somewhat	Very much so	Completely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. What amendments to the PBI solution are required in order to improve on the elements in the previous question?

25. Please indicate whether you agree or disagree that the **EU contribution** to the PBI is relevant in terms of:  
*Note to interviewer: Please ask interviewee to explain their answer.*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Reputation / Credibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Budgetary support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creditworthiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Certainty of delivery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other reasons (please describe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. How would you qualify the EIB's role in the transaction process, and in particular in the following areas:  
*Note to interviewer: Please ask interviewee to explain their answer.*

	Poor	Fair	Good	Very good	Excellent	N/A
Attracting investments (e.g. as an anchor investor)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial structuring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Due diligence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EIB acting as the controlling creditor (hypothetically)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transaction costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other reasons (up to 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27. To which extent has the PBI contributed to the achievement of the initial policy objectives :

	Poor	Fair	Good	Very good	Excellent	N/A
Credit enhance the risk profile of senior debt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilitate the bond placement with long term institutional investors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Widen financing options in terms of margin and tenor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allowing EIB to engage in riskier transactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Achieve priority projects on the TEN-T, TEN-E and ICT and broadband networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. Do you think that the PBCE should be continued in the set of financial instruments as part of the CEF?  
*Note to interviewer: Please ask interviewee to explain their answer*

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

If you answered no, how do you think that the CEF can best be deployed, i.e. what other financial instruments would you recommend?

29. If you answered yes to the question above, should the PBCE be continued in its current form?

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

How could the PBCE be improved to better suit market needs?

## V. EU ADDED VALUE AND ADDITIONALITY

30. In your opinion, to what extent do TEN-T, TEN-E and ICT and broadband projects have alternative financing solutions to maximise private finance?



31. In your opinion, to what extent did the PBI lead to improved conditions (e.g. pricing, amounts, tenor, product design...) of TEN-T, TEN-E and ICT and broadband projects? Please detail.
32. To what extent and by which means can the EU added value be maximised for PBI?
33. To what extent has the EU contribution to the PBI been additional over the market alternatives available for long-term debt financing?
34. In your opinion, what are the causes for difficulties in closing financing of large European infrastructure projects, and in particular, trans-European projects (e.g. Passante di Mestre)?
35. Please rank the impact and contribution of the following initiatives to reach Europe's infrastructure investment objectives (1 is highest impact, 10 is lowest impact).

	Rank	Further explanation on answer
PBI		
EU Structural Funds		
Unbundling directive		
Prudential regulation (e.g. Solvency 2)		
National guarantee schemes (e.g. UK Guarantee Scheme)		
National infrastructure funds		
Private sector schemes (e.g. Assured Guaranty, PEBBLE-COMMUTE, etc.)		
PPP initiatives		
EFSI		
Others (please explain)		

36. Please rank the primary obstacles to realise investments in European infrastructure projects from the most important to the least important?

*Note to interviewer: Please ask interviewee to explain their answer*

Explanation	Rank	Further explanation
There is insufficient market demand / economic rationale for these projects		
National and local governments do not support these projects		
Lack of a clear project pipeline		
There are too many fiscal, legal and regulatory barriers (please precise at which level these barriers are encountered)		
There is too little cooperation between public authorities of Member States		
Public opposition is too strong for these projects		
There is a lack of financing		
Transparency in financial reporting		
Other (please explain)		

37. In reference to the question above, is PBI able to overcome these overriding barriers? Please explain.

38. Referring to the previous question, would you change this ranking order if we consider only large European infrastructure projects, and in particular, trans-European network projects (TEN-T, TEN-E, broadband)?

*Note to interviewer: Please ask interviewee to explain their answer*

39. What do you consider to be the most important trends in the project loan market post-credit crisis?

There has been a structural shift from bank financing to bond financing	<input type="checkbox"/>
Long-term bank financing has returned, but funding capacity is insufficient to address total demand	<input type="checkbox"/>
Infrastructure project profiles are fundamentally riskier	<input type="checkbox"/>
Tighter prudential regulations are discouraging infrastructure investment	<input type="checkbox"/>
Other trends (please explain up to 3)	<input type="checkbox"/>

40. Please rank your investment criteria for investing in infrastructure project debt?

Explanation	Rank	Further explanation
Yield		
Credit rating (lower risk)		
Sector experience		
Knowledge of the country / political environment		
Other (please explain)		

41. What is the target rating level for which you have the largest investment allocation?

AAA	<input type="checkbox"/>	AA-	<input type="checkbox"/>	A-	<input type="checkbox"/>	BBB-	<input type="checkbox"/>
AA+	<input type="checkbox"/>	A+	<input type="checkbox"/>	BBB+	<input type="checkbox"/>	Below BBB-	<input type="checkbox"/>
AA	<input type="checkbox"/>	A	<input type="checkbox"/>	BBB	<input type="checkbox"/>		

42. Would you invest if the standalone project was rated as a non-investment grade asset, or do you require at least a BBB-rated underlying project?

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

43. In your opinion, what are the main risks for project bond investors?

	Insignificant	Slightly significant	Moderately significant	Significant	Highly significant	Further explanation on answer
Construction risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transaction structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lack of credit rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Off-take risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lack of institutional knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (up to 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

44. To what extent is the PBI coherent with other relevant EU or member states financial instruments? Can you please also precise if the initiatives overlap each other?

	Not at all	A little	Some-what	Much	Completely	Further explanation on answer
LGTT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
UK Guarantee scheme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Marguerite fund	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Private Finance for Energy Efficiency (PF4EE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Natural Capital Financing Facility (NCFF)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
European Fund for Strategic Investments (EFSI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## **Appendix E: Glossary**

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## Glossary

Terms	Definition
Availability-based	Projects that entitle a private entity to receive regular payments from a public sector entity to the extent that the project asset is available for use in accordance with contractually agreed service levels.
Bank arranger	Syndicated loans are offered by a group of lenders (called a syndicate) who work together to provide funds for a single borrower. In such structure, there is typically a lead bank or underwriter of the loan, known as the 'arranger', 'agent', or 'lead lender'. This lender may be putting up a proportionally bigger share of the loan, or perform duties like dispersing cash flows amongst the other syndicate members and administrative tasks.
Brownfield	Brownfield refer to a project in which construction and testing have been completed which is now operational and revenue generating.
Cash sweep	A Cash sweep is the mandatory use of excess free cash flows to pay down outstanding debt rather than distribute it to shareholders.
Committed	A financing facility provided by a bank to a borrower, which cannot be withdrawn unless the borrower breaches covenants or other terms of the facility.
Cooperation Agreement	Agreement between the EC and the EIB in respect of the PBI pilot phase. The Agreement determines the modalities and conditions applicable to the EU budget contribution provided to the EIB for the implementation and the management of the PBI, the sharing between the Parties of revenues and risks relating to PBI operations and sets out the other terms agreed by the Parties for the implementation and the management of the PBI.
Covenant	A condition that requires a borrower to fulfil certain conditions or which forbids a borrower from undertaking certain actions, or which in other ways restricts certain activities.
Credit enhancement	Credit enhancement is the improvement of the credit profile of a structured financial transaction or the methods used to improve the credit profiles of such products or transactions.
Credit wrap	A form of financial guarantee insurance, covering not all debts of the borrower, but a specific loan, debt issuance, or other financial transaction.
Debt Service	Scheduled payments of principal and interest
Default risk	The event in which companies or individuals will be unable to make the required payments on their debt obligations.
Deferred drawdown	Deferred Drawdown provides the borrower with the flexibility to rapidly fund its financing requirements by deferring disbursement.
Demand risk	Reliance on income from a third party for a project, for which credit enhancement is usually required, or the risk during the operational phase from not having a contractually guaranteed revenue stream and thus being subject to volume or price risk.
Event of default	An action or circumstance that causes a lender to demand full repayment or accelerate repayment of an outstanding balance sooner than it was originally due.
First loss piece	The most junior tranche in a structured finance transaction. This tranche covers the risk of first loss in a portfolio. Its size is a function of historical losses, so as to protect the investors against the economic risk (estimated loss) of the transaction.

## Glossary

Greenfield	Greenfield relate to projects that are not yet built. Financing is required for both the construction phase and permanent operations, or, a project still at the planning stage which requires financing for the construction and operational phases.
Hybrid instrument	A single financial security that combines two or more different financial instruments.
Investment grade	A rating that indicates that a corporate bond has a relatively low risk of default. See below the credit rating tiers for the 3 top rating agencies.
Leverage	Financial leverage is the degree to which an entity uses debt and preferred equity.
Leverage or multiplier effect	Effect whereby the EU budget contribution to PBI mobilises a global investment exceeding the size of the budget contribution. The leverage or multiplier effect is quantified as the aggregate of the amounts raised to finance the PBI projects (including inter alia equity, quasi-equity, subordinated debt, mezzanine debt and senior debt) divided by the aggregate amount of the EU contribution.
Loss Given Default	The amount of funds that is lost by a bank or other financial institution when a borrower defaults on a loan.
Make whole clause	A provision that allows a borrower to prepay the remaining fixed rate term debt. The borrower has to make a lump sum payment derived from a formula based on the net present value (NPV) of future coupon payments that will not be paid because of the call.
Mark-to-market	The accounting act of recording the price or value of a security, portfolio or account to reflect its current market value rather than its book value.
Mezzanine instrument	Mezzanine capital is any subordinated debt or preferred equity instrument that represents a claim on a company's assets which is senior only to that of the common shares. Mezzanine financings can be structured either as debt (typically an unsecured and subordinated note) or preferred stock.
Modern Portfolio Theory	Modern portfolio theory (MPT) is a theory of finance that attempts to maximise portfolio expected return for a given amount of portfolio risk, or equivalently minimise risk for a given level of expected return, by carefully choosing the proportions of various assets.
Monoliner	An insurance company that provides guarantees to issuers, often in the form of credit wraps, that enhance the credit of the issuer.
Multiannual Financial Framework	The multiannual financial framework (MFF) lays down the maximum annual amounts which the EU may spend in different political fields over a period.
Negative carry	A situation in which the cost of holding a security exceeds the yield earned.
Prudential regulation	The prudential regulation is regulation of financial institutions and supervision of the conduct of these institutions in order to set down requirements that limit their risk-taking. The aim of prudential regulation is to ensure the stability of the financial system.
Public Private Partnership (PPP)	PPPs describe a form of cooperation between the public authorities and economic operators. The primary aims of this cooperation are to fund, construct, renovate or operate an infrastructure or the provision of a service.
Rebalancing mechanism	Upon a PBCE rebalancing event 100% of the then available amounts under the Letter of Credit will be drawn by the Project Company/Issuer (the 'PBCE Rebalancing') and a mandatory partial redemption at par of an amount of Senior Bonds equivalent to such drawn amount shall be effected.

## Glossary

Rebalancing event	Means the occurrence of one or more of the following events: (i) the Bond Life Cover Ratio is below a certain threshold, (ii) the amount of PBCE to be drawn plus the principal amount of any PBCE amounts drawn and outstanding exceeds an amount equal to x months of scheduled Senior Debt service, or (iii) (c) the PBCE has been drawn to pay scheduled debt service on x consecutive Scheduled Payment Dates and a fourth drawdown is required.
Recovery rate	The extent to which principal and accrued interest on a debt instrument that is in default can be recovered.
Refinancing	The process through which an entity organises its debt obligations by replacing or restructuring existing debts.
Revolver facility	A line of credit where the customer pays a commitment fee and is then allowed to use the funds when they are needed.
Sponsor	A party which develops and becomes a shareholder in infrastructure projects.
Subordinated tranches	Tranche is a term often used to describe a specific class of bonds within an offering wherein each tranche offers varying degrees of risk to the investor.
Swap	A derivative in which two counterparties exchange cash flows of one party's financial instrument for those of the other party's financial instrument. A subordinated tranche ranks below other loans (or securities) with regard to claims on assets or earnings.
Swap curve	The name given to the equivalent of a (sovereign) yield curve but using market swaps prices. The swap curve shows the relationship between swap rates at varying maturities and can be used as the basis for pricing fixed income bonds as in 'mid-swaps plus spread of x bps'.
Portfolio first loss piece	First loss tranche, which covers initial losses on a portfolio.
Residual risk tranche	Tranche that covers all remaining losses on a portfolio after the PFLP is exhausted.

### Credit rating tiers for the 3 top rating agencies.

Moody's	S&P	Fitch	Rating description	
Aaa	AAA	AAA	Prime	Investment grade
Aa1	AA+	AA+	High grade	
Aa2	AA	AA		
Aa3	AA-	AA-		
A1	A+	A+	Upper medium grade	
A2	A	A		
A3	A-	A-		
Baa1	BBB+	BBB+	Lower medium grade	
Baa2	BBB	BBB		
Baa3	BBB-	BBB-		

## **Appendix F: Abbreviations**



## Abbreviations

Abbreviations	
\$	US Dollar
£	British Pounds
€	Euro
5G	Fifth Generation (technology)
ADB	Asian Development Bank
ADSCR	Annual Debt Service Coverage Ratio
ADSL	Asymmetric Digital Subscriber Line
AFMI	Africa Financial Markets Initiative
APRR	Autoroutes Paris Rhin Rhone
BE	Belgium
bn	Billion
CBS	Core Banking Service
CEF	Connecting Europe Facility
CLIP	Capital Lease Infrastructure Program
CLO	Collateralized Loan Obligations
DE	Germany
DG CNCT	Directorate General for Communication Networks, Content & Technology
DG ECFIN	Directorate General for Economic and Financial Affairs
DG ENER	Directorate General Energy
DG MOVE	Directorate General for Mobility and Transport
EC	European Commission
EFSI	European Fund for Strategic Investments
EIB	European Investment Bank
ELTIF	European Long-Term Investment Fund
ERDF	European Regional Development Fund
ES	Spain
EU	European Union
FCT	FCT France Broadband Infrastructures
FI	Financial Instrument
FIDEPPP	Fonds d'Investissement et de Développement des Partenariats Public-Privé
FLP	First Loss Piece
FR	France
GGOWL	Greater Gabbard Offshore Winds Ltd
GyM	Gwynt y Mor
ICT	Information and Communication Technology
INEA	Innovation and Networks Executive Agency
IRR	Internal Rate of Return
ISP	Internet Service Provider
IT	Italy
ITN	Innovation to Negotiate
JESSICA	Joint European Support for Sustainable Investment in City Areas
k	Thousand
KfW	Kreditanstalt für Wiederaufbau
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LGTT	Loan Guarantee Instrument for Trans-European Transport Network Projects
LoC	Letter of Credit
m	Million
MA	Managing Authority
MA	Managing Authority
MFF	Multiannual Financial Framework

## Abbreviations

MS	Member States
MW	Megawatt
n.a.	Not applicable
n.m.	Not meaningful
n.p.	Not provided
NCFF	Natural Capital Financing Facility
NGO	Non-governmental organisation
NL	The Netherlands
NPV	Net Present Value
NSFR	Net Stable Funding Ratio
O&M	Operations and Maintenance
OECD	Organisation for Economic Co-operation and Development
OFTO	Offshore Transmission Owners
OSP	Offshore Substation Platforms
PBCE	Project Bond Credit Enhancement
PBI	Project Bond Initiative
PEBBLE	Pan European to Bond Loan Equitisation
PF	Project Finance
PF4EE	Private Finance for Energy Efficiency
PFLP	Portfolio first loss piece
PIN	Public Initiatives Networks
PPP	Public-Private Partnership
Q1	First Quarter
Q2	Second Quarter
Q3	Third Quarter
Q4	Fourth Quarter
RPI	Retail Price Index
RRT	Residual risk tranche
RWE	Rheinisch-Westfälisches Elektrizitätswerk
RWN	Rating Watch Negative
S&P	Standard & Poor's
SK	Slovakia
SPV	Special Purpose Vehicle
TEN-E	Trans-European Energy Networks
TEN-T	Trans-European Transport Networks
TSO	Transmission System Operator
UK	United Kingdom
US	The United States
VS	Versus

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