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EIB OPERATIONS  
INSIDE THE EUROPEAN UNION



European  
Investment  
Bank

The EU bank







# EIB operations inside the European Union 2017

## Results and impact

European Investment Bank operations inside the European Union 2017

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# Foreword by the **President**

**T**oday, the EIB Group and its Member State shareholders can call on the resources of 3 300 committed staff. As you will see from this report on the expected future impact of our activity, we are building a Europe that can meet the challenges of the next 60 years.

The world has become more complex since 1958, with new economic, social, environmental and technical challenges. The EIB has always adapted to the needs of a developing community and a changing world, and that process continues.

However, the Bank's underlying role remains the same. Cohesion, the Bank's original *raison d'être*, is still crucial for the Bank. On both a per capita basis and as a percentage of GDP, the EIB invests more in cohesion countries than in other EU countries. The Bank is key to the implementation of many other EU policies, providing support in areas such as climate action, environmental protection, education and healthcare, research, development and innovation, as well as communications.

As you will read in this report, most EIB investments support multiple objectives. Take the Bank's climate action investments in the bioeconomy as a case in point. They absorb carbon dioxide, create employment in rural areas, provide raw materials for industry and energy production, and help prevent flooding downstream. Our investments in communications technology facilitate changes in work and travel patterns to allow EU citizens to use their time more efficiently and effectively and provide a better quality of life.

The projects highlighted in this report are a road map of Europe's future. They track the changes in the world around us and illustrate the many ways in which the EIB participates in laying the foundations for prosperity in that shared future.

**Werner Hoyer**



# Executive summary

All EIB projects must support at least one of the Bank's four public policy goals (defined in the Bank's Corporate Operational Plan): innovation and skills, SME and mid-cap finance, infrastructure, and environment. The Bank also has two cross-cutting policy objectives which cover all sectors and activities: cohesion, which addresses economic and social disparities across the EU, and climate action, covering climate change mitigation and adaptation.

In 2017, the EIB signed loan contracts worth EUR 54 billion for 380 new operations inside the EU in support of projects with a total project investment cost of EUR 207 billion.

This report focuses exclusively on the potential impact of the new operations signed in 2017. New operations are operations for which the first tranche was signed in 2017. While several signatures may be associated with any given project, the analysis presented here takes into account only first signatures.

EUR  
**62.35** bn  
Total financing

## EIB operations signed in 2017 by policy objective

**13.76** bn EUR for **innovation and skills**

**18.25** bn EUR for **SMEs and midcaps finance**

**16.52** bn EUR for **infrastructure**

**13.83** bn EUR for **environment**

**18.24** bn EUR for **cohesion**

**16.58** bn EUR for **climate action**



**EUR 12.1 bn**  
of new operations supporting  
innovation

### Innovation and skills

Promoting and supporting the development of innovation and skills is essential for the development of the EU's knowledge economy and the achievement of Europe 2020 targets.

- More than 90 private sector companies were granted loans in support of R&D projects.
- The EIB's continued investment in information and communications technology and broadband networks facilitated access to high-speed data services for an additional 7.4 million households.
- Over 1.1 million students benefited directly from EIB-supported projects.

A substantial number of the projects supporting innovation also supported either or both of the Bank's cross-cutting objectives: a research, development and innovation (RDI) project in a convergence region will also promote cohesion, and a schools project in France with a substantial energy-saving component also contributes to climate action.

**EUR 15.6 bn**  
of new operations for SMEs and  
midcaps

### SMEs and midcaps financing

Small- and medium-sized enterprises (SMEs) and mid-caps employ around two-thirds of the working population of the EU, and represent over 90% of all EU corporates. Although they play a critical role in the European economy by creating jobs, developing wealth and promoting innovation, they often have limited access to external financing. This is why access to finance for SMEs and mid-caps is a key priority for the EIB.

- participation in 21 securitisation transactions is expected to generate EUR 11.5 billion of new investments;
- SME Initiative Italy provides a guarantee capacity of EUR 142 million – six different instruments are already deployed;
- InnovFin bridges the gap between demonstration and commercialisation stages in venture company growth.

**EUR 14.3 bn**  
of new infrastructure  
operations

## Infrastructure

Internal markets and economies depend on modern infrastructure. EIB finance helps to ensure that the EU has the sustainable, efficient and well-integrated infrastructure it needs to create a 'Smart Europe'.

EIB infrastructure finance supported the development of strategic transport (including Trans-European Transport Networks – TEN-T), energy infrastructure (including Trans-European Energy Networks – TEN-E) and numerous projects to promote integrated territorial development.

- Over 1 100 lane-kilometres of roads and highways are to be upgraded or built.
- Over 1 200 km of railway track and more than 16 stations are to be upgraded or built, to support some six million additional passenger trips.
- Additional airport capacity to be created to accommodate over 40 million additional passenger trips per year.
- Improvements to ports will provide over 3 million additional tonnes of annual port cargo capacity.

The Bank's infrastructure investments often support cohesion and climate action objectives as well. Improved rail services to persuade people not to use their private cars, or low carbon and climate-resilient urban development are examples of infrastructure projects which contribute to the cross-cutting objective of climate action.

**EUR 12.3 bn**  
of new environment  
operations

## Environment

The EIB is committed to an EU environment lending portfolio supporting a healthy and safe environment for both people and nature. To achieve this, the Bank invests in projects which promote clean air, biodiversity, sustainable transport, natural resource efficiency and the circular economy, renewable energy and energy efficiency.

- Some 21 million people are expected to benefit from safe drinking water.
- 37 million people are to be served by treatment facilities and 1.8 million persons will benefit from new waste collection systems with recyclables/bio-waste collected separately.
- Over 1.6 million people are expected to face a reduced risk of flooding.
- Some 5.3 million households could be supplied with the energy generated from renewable energy sources.

Many of these projects also support climate action, for example through lower carbon transport solutions, energy savings and afforestation.



# EUR 131.1 bn

of eligible investment<sup>1</sup> mobilised

## European Fund for Strategic Investments (EFSI)

By the end of 2017, the EIB approved 358<sup>2</sup> projects for EUR 39.2 billion, of which 278 projects were signed for EUR 27.4 billion of EFSI-backed financing under the Infrastructure and Innovation Window (IIW).

- Almost 15 million additional households are expected to have very high-speed broadband access.
- An extra 240 000 tonnes of waste treatment capacity will come on stream.
- 1 500 rolling stock units will be acquired and over 75 km of rail tracks upgraded.
- Over 110 private sector companies received financing for RDI projects, with a potential of more than EUR 80 billion of additional sales.
- Nearly 9 000 new 4G transmission sites are to be installed.
- Over 1 300 lane-kilometres of roads and highways will be upgraded.
- 6 million tonnes of new cargo handling capacity in ports will become available.
- 13 000 MW of additional electricity generation capacity is to be built, of which 95% from renewable energy sources, and over 8 million households will be supplied by the energy generated.
- Over 264 000 km of water mains and distribution pipework will be installed or upgraded, with over 17 million people benefiting from safer drinking water.

## Expected impact on employment, growth and competitiveness

Although the Bank's remit is economic development, rather than job creation, the projects it finances lead to increased employment during both implementation and operation. The financing which the Bank provides to support education, training, research, development, innovation and early-stage company growth should also have direct employment benefits.

The Bank's investments contribute to the development of new technologies, the creation of innovative products, and the introduction of new, collaborative ways of working. Furthermore, they help to create the conditions necessary for wealth creation and sustainable economic growth, opening the way to a sustainable future for Europe.

- Employment during project construction: 900 000 person-years.
- Employment during project operation: 115 000 full time equivalent jobs.
- Jobs sustained: 5.5 million.

<sup>1</sup> Eligible investment mobilised: eligible part of the overall Project Investment Cost.

<sup>2</sup> The total approved number of operations including cancelled operations was 362 for EUR 39.3 billion.

# 1. Introduction



## 1.1 Context of the EIB's operations in 2017

The framework for the EIB's current operations is provided by the Europe 2020 strategy, the EU's agenda for growth and jobs. Europe 2020 highlights the need to increase productive investment levels; exploit the potential of EU funds such as structural and national funds, notably via tools such as the European Fund for Strategic Investments (EFSI); ensure that finance reaches the real economy; boost the digital economy; and transition to a low-carbon economy.

The Bank can use its financial resources and in-house expertise to address the first four of the Europe 2020 targets. Although the EIB cannot tackle poverty directly, it can make a contribution through the provision of support to local authorities and other agencies to improve the physical environments of communities at risk.

### 1.1.1 EIB's policy goals

In line with the Europe 2020 strategy, the EIB has adopted four public policy goals:

**innovation and skills** – helping to achieve the Europe 2020 target of 3% of GDP invested in R&D by promoting broadband, creating a single digital market in Europe, and supporting innovation. In relation to skills, the EIB provides finance to develop educational and research facilities, and to support the training of young people;

**SME and mid-cap finance** – the EIB supports the development of SMEs by offering loans, guarantees and microfinance through financial intermediaries. It also supports mid-caps investing in research and product development with loans and guarantees;

**infrastructure** – the EIB provides the finance needed to develop strategic transport links (including TEN-T), build the infrastructure necessary for competitive and secure energy supplies (TEN-E), and undertake urban renewal projects, including those aimed at creating smart and sustainable cities;

**environment** – the EIB invests in sustainable transport (including various forms of public transport), environmental protection, the development of renewable energy, and energy efficiency.



The European Investment Bank is the investment bank of the European Union. Its shareholders are the Member States of the EU, and its primary purpose is to provide long-term finance and expertise to projects to help achieve the EU's objectives. Over 90% of EIB lending is within the EU, but the Bank is also a major source of development finance in other parts of the world, in support of EU policies.

This report is an account of the EIB's activities inside the EU during 2017, a year during which the Bank was required to take account both of the continuing echoes of the 2008 financial crisis, and of the changing global economic landscape. The report presents an analysis of the year's 380 new projects. It assesses their contribution to the Bank's policy objectives and their anticipated impact for EU citizens.

Europe 2020: five headline targets measured by the following key indicators:

- **R&D** - 3% of the EU's GDP to be invested in R&D;
- **employment** - 75% of 20-64 year-olds to be employed;
- **climate change and energy sustainability** - greenhouse gas emissions 20% (or even 30%, if the conditions are right) lower than in 1990; 20% of energy from renewables; 20% increase in energy efficiency;
- **education** - reduce the rate of early school leaving to below 10% of pupils; at least 40% of 30-34-year-olds completing third-level education;
- **fighting poverty and social exclusion** - at least 20 million fewer people in or at risk of poverty and social exclusion.



In addition, the EIB has two horizontal, or cross-cutting, objectives traversing the four public policy goals:

**economic and social cohesion** – the EIB supports the EU objective of economic and social cohesion by financing projects in less-developed areas which contribute to reducing the disparities between the levels of development of the different EU regions;

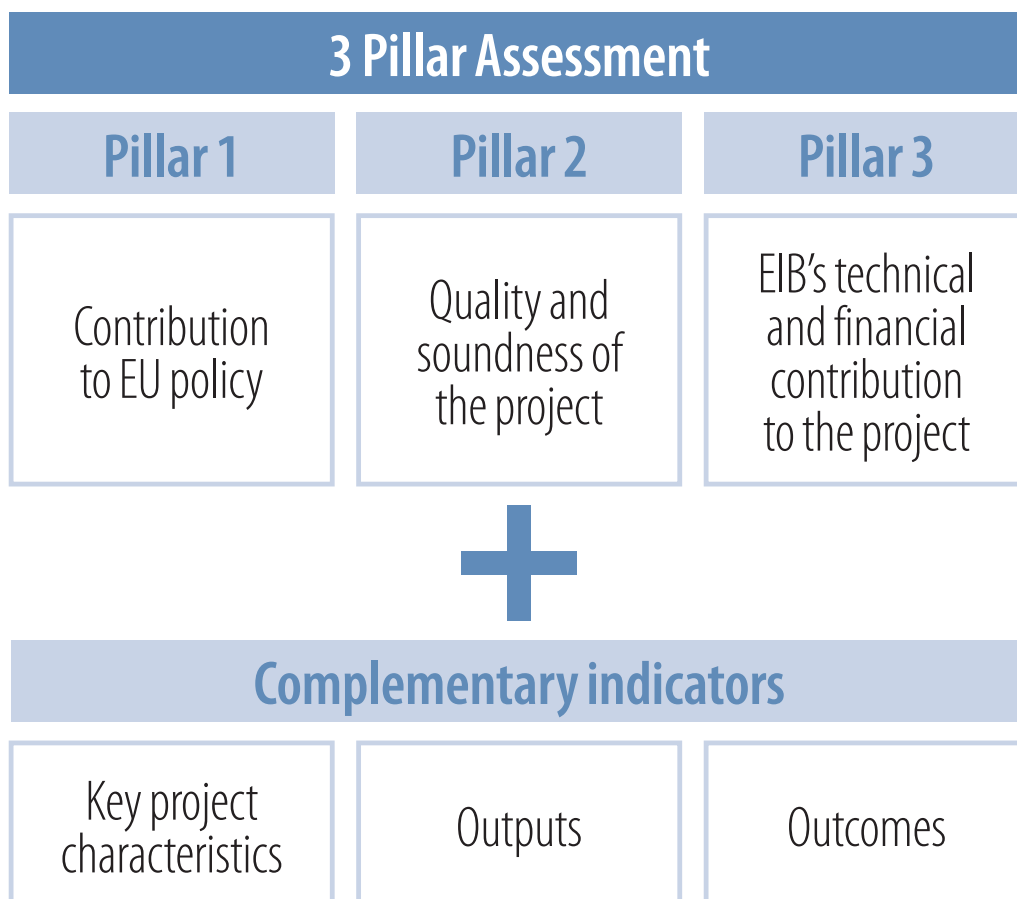
**climate action** – the EIB provides finance for climate mitigation and adaptation in all sectors, including afforestation and reforestation, which are effective means of sequestering CO<sub>2</sub> from the atmosphere through natural fixation.

The Bank’s priorities and operational orientations are set out in a three-year rolling operational plan. The Corporate Operational Plan (COP) for 2017-19 called for the Bank to continue supporting the Europe 2020 targets for smart, sustainable and inclusive growth, with key areas of activity being:

- energy – competitive and secure supply; energy efficiency; renewable energy
- transport and mobility – energy-efficient, low-carbon and cleaner sustainable transport; strategic transport infrastructure; mobility for Europe’s cities; urban and regional development and renewal
- health
- rural infrastructure development and agri-business support
- supporting SMEs and mid-caps
- environment – water; waste; rural infrastructure
- innovation – digital technology; biotechnology; materials science; bio-economy; energy

### 1.1.2 How the EIB demonstrates value added

There are many projects that would not be able to proceed without EIB intervention, perhaps because public finances are so constrained that the necessary financing is simply not available, or because the private sector considers a project

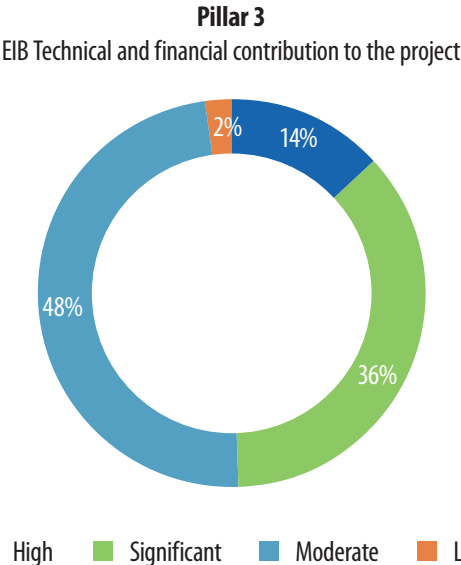
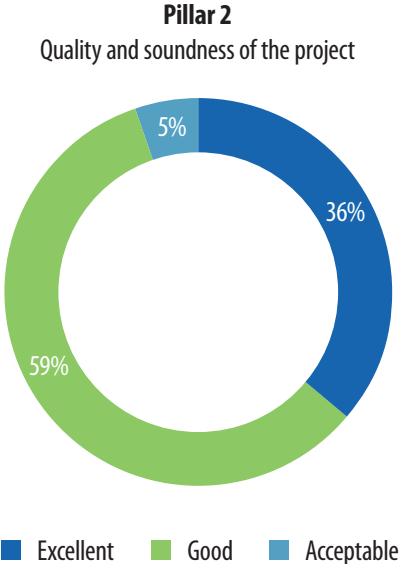
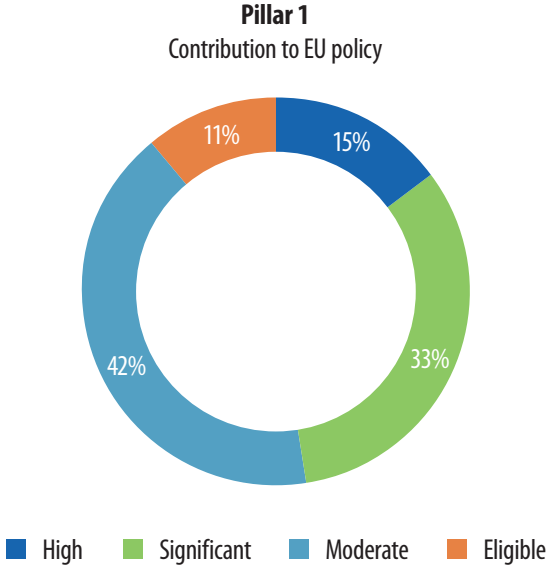


as being too risky with an uncertain payback. The Bank often supports projects of common interest to several Member States that, because of their size or nature, cannot be entirely financed by the various means available in the countries concerned. In these situations, it is likely that projects such as new transport links would only proceed in a piecemeal fashion, and possibly only over a longer period of time, without EIB involvement, delaying and reducing the scale of the economic and other impacts.

The Bank measures its success in terms of its contribution to EU policy, the quality and soundness of the projects it finances, and the technical and financial contribution it makes to each project using its Three-Pillar Assessment (3PA). Further details of the methodology are presented in Annex 1.

The charts below present the 3PA assessment of the projects supported by the EIB in 2017:

**3PA ratings for the EIB's 2017 operations**



If the categories of 'high' (or 'excellent') and 'significant' (or 'good') are combined to simplify the picture, it becomes apparent that the EIB's new operations in 2017 generally scored high across the three Pillars, demonstrating their alignment with the Bank's strategy and objectives.

## 1.2 Overview of EIB operations signed in 2017

### 1.2.1 EIB's 2017 operations by policy goal

The EIB's operations in 2017 contributed to its four main policy objectives as follows:

#### Volume and project cost of operations signed in 2017 by policy objective (in EUR bn)

Policy objective	All signatures	First signatures	Project cost (first signatures)
<b>Innovation &amp; skills</b>	<b>13.76</b>	<b>12.07</b>	<b>40.77</b>
Research and development	11.53	10.74	34.81
Education and training	2.23	1.33	5.96
<b>SME and mid-cap finance</b>	<b>18.25</b>	<b>15.64</b>	<b>52.29</b>
<b>Infrastructure</b>	<b>16.52</b>	<b>14.28</b>	<b>55.89</b>
Strategic transport (incl. TEN-T)	5.84	5.14	23.82
Competitive and secure energy (incl. TEN-E)	5.78	5.37	17.93
Integrated territorial development (incl. health)	4.90	3.77	14.14
<b>Environment</b>	<b>13.83</b>	<b>12.29</b>	<b>58.40</b>
Sustainable transport	4.17	3.09	19.06
Environmental protection and natural resource efficiency	4.34	4.00	19.19
Renewable energy and energy efficiency	5.32	5.20	20.15
<b>Total (EUR bn)</b>	<b>62.35</b>	<b>54.28</b>	<b>207.35</b>

Note: EIB financing has been allocated proportionately across EIB policy objectives where a project contributed to multiple objectives.

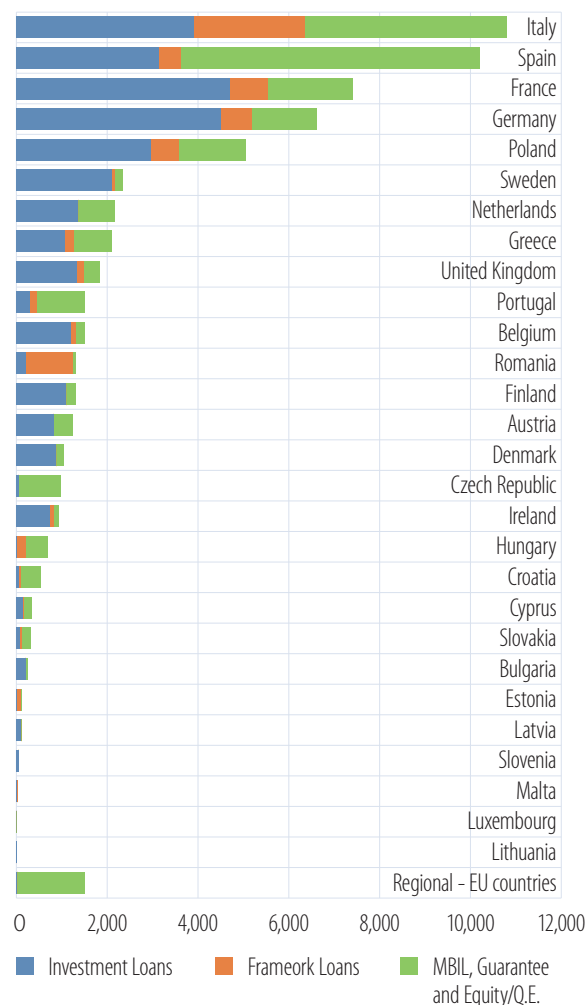
One of the Bank's targets is to ensure that at least 25% of total lending, across all its public policy areas, is devoted to climate action. In 2017, the EIB financed EUR 16.6 billion of climate action in the EU, representing 27% of all EU signatures.

Regarding the EIB's cross-cutting cohesion objective, EUR 18.3 billion of the EUR 62.4 billion signed in 2017 was for projects in EU regions classed by the European Commission (Eurostat) as being less developed or in transition.

### 1.2.2 EIB's 2017 operations by EU Member State

All EU countries benefited from EIB operations during 2017. The chart below provides a breakdown of operations by country and type of operation.

#### EIB signed operations in 2017 by country and loan type (in EUR m)





The geographical distribution of the Bank’s operations generally reflects the nature and size of Member State economies:

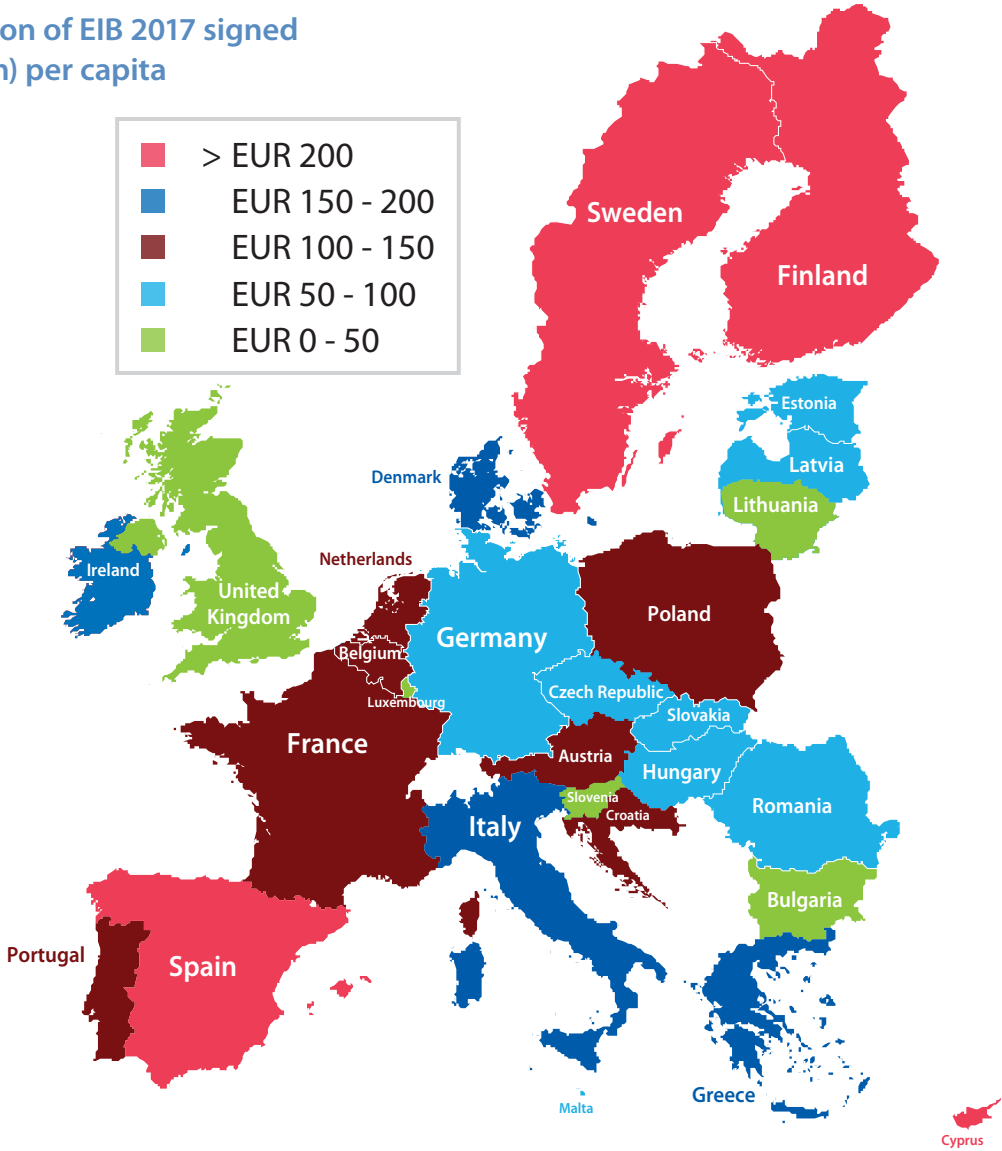
- in 2017, the six largest EU Member State borrowers were Italy, Spain, France, Germany, Poland and Sweden. The UK had been the fifth largest borrower in 2016, but uncertainty as to the future relationship between the UK and the EU, and more specifically the EIB, saw the number of new UK operations drop significantly. Its place in the top six borrower states has been taken by Sweden;
- the only country not to take at least one investment loan was Luxembourg, and only Malta and Slovenia did not use

the Bank’s MBILs, guarantees and equity-type instruments. The picture in respect of framework loans is more mixed but remains unchanged from 2016 with 18 of the 28 Member States using them.

The level of lending activity in 2017 can be related to the population size of the various Member States, as illustrated in the map below. The amount of financing per capita is higher in Poland and in the southern European countries – especially Cyprus, Greece, Croatia and Spain.

A detailed breakdown of the EIB’s 2017 operations by types of intervention and EU Member State is provided in Annex 2.

**Country distribution of EIB 2017 signed operations (EUR m) per capita**



Note: Calculation based on the total amount signed by country in 2017 divided by the 2017 country population taken from Eurostat

### 1.2.3 Employment impact

EIB operations create employment in a number of different ways. Firstly, there is the temporary employment associated with the physical implementation of the project. Most EIB lending is for the creation of physical assets, such as roads, schools, factories and flood defences. Building these will lead to the employment of construction workers in a given region. In addition, most projects will require plant and equipment to make them operational: production lines in factories, generating plant in power stations, furniture in schools and universities, etc. These will also create jobs. The EIB's operations in 2017 are estimated to have supported some 900 000<sup>3</sup> temporary jobs across the EU Member States.

The second type of employment impact attributable to EIB operations is the creation of and support for permanent, long-term jobs. The Bank's lending in 2017 is expected to generate some 115 000 new jobs across the EU. These are direct employment effects due to activity or business expansion, but jobs are also created both upstream and downstream of the investment. Infrastructure investments can induce employment creation as businesses take advantage of the improved infrastructure to expand their operations and to trade more effectively and efficiently with key markets elsewhere. Similar types of effects can be found in the fields of innovation and skills, and the environment.

Furthermore, some 5.5 million jobs are expected to be sustained. EIB investments in SMEs should enable them to innovate and grow, thereby creating new job opportunities. Although more difficult to measure, it is these longer-term direct and indirect, or induced, employment effects arising from EIB operations that are likely to be the most significant.

Supporting jobs is, of course, vital given persistent high unemployment rates across many EU Member States, especially amongst young people. However, while creating assets creates temporary jobs – which will be sustained if economies continue to grow – sustaining and developing permanent jobs is arguably more important. Here the EIB can make a significant contribution to the development of the European economy. Its investment in innovation contributes to the development of new technologies that are needed to promote Europe's long-term industrial competitiveness. Financial support for education helps to create the well-qualified workforce that is needed by modern economies as well as opening up employment opportunities for young people.

<sup>3</sup> Total temporary employment expressed in persons for the entire project construction period and based on all type of operations, i.e. including multi-sector and multi-objective loans covering access to finance to SMEs and mid-caps.

## 1.3 European Fund for Strategic Investments (EFSI)

The EIB continues to play an important role in the implementation of EFSI, and 2017 saw an acceleration of the Bank's activities towards its objective.

EFSI was launched via the European Commission in 2015 as part of the Investment Plan for Europe. This aims to stimulate growth and economic recovery following years of crisis and stagnation. The EIB Group was given the task of delivering EUR 315 billion of additional investment under EFSI between 2015 and mid-2018, over and above its own operations. The initiative is based on linking a guarantee from the EU's budget with EIB financing. More specifically, the plan focuses on projects which support R&D and the development of ICT; investments in the energy sector; the provision of financial support for SMEs and mid-caps; the development of transport infrastructure; environment and resource efficiency; and investment in human capital, culture and health.

By the end of 2017, the EIB had approved 358<sup>4</sup> operations for EUR 39.2 billion, expected to mobilise over EUR 165.3 billion. Out of the approved operations, 278 EFSI operations have been signed for EUR 27.4 billion, up from EUR 14.2 billion at the end of 2016, amounting to EUR 131.1 billion of EFSI eligible investment mobilised.

Following a positive evaluation by the European Commission of the use of the EU guarantee and the functioning of the guarantee fund, EFSI has been expanded to reach at least EUR 500 billion of mobilised investments by end-2020.

<sup>4</sup> Approved and not cancelled operations or loan tranches as of 31 December 2017.

## 1.4 The EIB's advisory role

In addition to its lending activities, the EIB plays an important advisory role. This is critical in promoting access to EIB financing and ensuring that there is a well-developed pipeline of sound, bankable projects across the EU. At the project level, the EIB's role includes providing technical assistance at all stages of the project cycle: strategic planning, early project assessment and identification, preparatory studies (feasibility, design, environmental impact assessment, technical studies) and implementation support.

The Bank continues to provide advisory support through JASPERS (Joint Assistance to Support Projects in European Regions), a joint EIB-EC venture covering a number of EU Member States as well as pre-accession countries.

Since 2016, the Bank has also increased its advisory role in support of financial instruments funded under the European Structural and Investment Funds (ESIF). In particular, Project Implementation Support services have been provided to Romania since 2009 when assistance was requested to complete problematic projects delaying closure of the ISPA<sup>5</sup> programme.



### Project Advisory Support Unit (PASU)

During 2017, the Project Advisory Support Unit (PASU) provided support to the Romanian authorities in a number of key processes related to the ex-ante conditionalities<sup>6</sup> for European Structural and Investment Funds (ESIF). These conditionalities needed to be met last year to avoid the suspension of ESIF funds for the Large Infrastructure Operational Programme. PASU provided support for a number of major deliverables including:

- works contracts for all public major infrastructure projects: new balanced, unequivocal contract conditions will create a more conducive environment for the implementation of the infrastructure projects and for addressing problems and disputes in the construction process;
- modernisation of the ex-ante control system of public procurement to ensure efficient use of resources in the public sector through more effective and smarter control, generating potential savings for tax-payers through centralised purchasing;
- contracts establishing expected performance levels for road and rail operators to ensure a clear relationship between the operators and the Ministry of Transport. In addition, these performance contracts allow the operators to plan infrastructure investments and maintenance expenditure in a multi-annual financial framework.

<sup>5</sup> Instrument for Structural Policies for Pre-Accession.

<sup>6</sup> Conditions which must be met in order to ensure the effective and efficient use of ESIF.

The EIB also continues to play a role under InnovFin Advisory which provides guidance to innovative companies on how to structure their RDI projects so as to improve their access to finance. The scheme also provides advice on how to improve investment conditions through activities which are not project-specific. This can include initiatives such as developing a business case for a new financing mechanism, and preparing studies on increasing the effectiveness of financial instruments to address specific RDI needs.

Some of the EIB's advisory support is now being channelled through the European Investment Advisory Hub (EIAH). This initiative, which is supported jointly by the EIB and the European Commission, was launched towards the end of 2015 as part of the Investment Plan for Europe. Services available via the EIAH include project development support from pre-feasibility to financing, advice on access to finance, capacity building, as well as more upstream advice on market studies, sector strategies, and project screening. Over 100 assignments are ongoing, in nearly all of the Bank's sectors of activity. Further to the extension of EFSI, EIAH will focus on improving the geographical and sectorial diversification of EFSI operations.



## Climate Change Adaptation and Resilient Cities (Florence, Italy)

The EIB provided technical assistance services to help improve the city of Florence's resilience to climate change through the development of targeted responses to climate-related risks. By reviewing existing feasibility studies and developing Climate Risk and Vulnerability Assessments (CRVA) it was possible to identify viable adaptation options for existing and future projects.

The operation focused on a project concerning a retention basin situated within the city limits. Concretely, the EIB assisted in:

- coordinating all the project stakeholders;
- developing a simplified CRVA based on available climate data to identify climate risks and vulnerabilities;
- developing a project design/cost proposal for the project to be included in the tri-annual plan that the EIB is financing under a framework loan.

The EIB's advice is expected to have a positive impact on the technical quality of the investments included in the current EIB Framework Loan as many of them were still at a relatively early stage. Future investment programmes are also expected to benefit. Furthermore, the project at the centre of this operation will form part of the city's Climate Adaptation Strategy and the related action plan due for completion by 2019.



## 1.5 Cohesion

The EU's cohesion policy aims to help each region achieve its full potential, to bring about a convergence of living standards and prosperity across the EU. It is a policy of investment in job creation, competitiveness, economic growth, improved quality of life and sustainable territorial development. These investments support the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth.

Promoting economic and social cohesion is one of EIB's priorities. The EIB helps to deliver growth, jobs and cohesion in

Europe by supporting the implementation of EU regional policy. Through a mixture of loans and advisory services, the EIB plays a critical role in addressing regional economic imbalances and raising living standards across the EU. In 2017, the EIB's support in Cohesion Priority Regions within the EU accounted for 29.6% of lending. The public-private partnership for the development and expansion of 14 Greek regional airports and the multi-sector framework loan supporting investment schemes in Andalusia are just some of the projects financed by the EIB in this area.



## 1.6 Climate action

All EIB investment projects are assessed for their contribution to addressing climate change and to achieving the EU's targets for climate and energy by 2030. It has been estimated<sup>7</sup> that meeting the climate change targets will require a total annual investment of EUR 100 billion by EU Member States.

The EIB Climate Strategy was published in 2015, following which further efforts have been made to implement measures

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<sup>7</sup> European Investment Bank, 'Restoring EU competitiveness' (2016 updated version).

to reinforce the decarbonisation pathway of the European economy. In line with the strategy, the EIB is developing ways of targeting its lending at high-impact climate action projects.

Transitioning towards a low-carbon economy is not only a strategy to mitigate the potentially catastrophic effects of climate change. Emphasising the roles of renewable energy, energy efficiency and other low-carbon technologies, can spur innovation and create jobs. These activities and actions now involve a very significant, and growing, number of businesses and jobs in many EU countries.





It is difficult to attract private sector investment in initiatives to combat climate change because of the long-term nature of the payback and the fact that the benefits may not be commercial in nature. Because of this market failure, the EIB has a key role in providing long-term finance for climate change actions.

The Bank is committed to financing climate action investments that amount to at least 25% of total lending (EU and non-EU) across all its public policy areas. In 2017, 27% of the total EU signed volume of EUR 62.4 billion was dedicated to climate action. The table below details the amounts signed in 2017 within the EU by climate action category.

### Breakdown of EU signatures in 2017<sup>8</sup> contributing to climate action

Climate action category	Signed amount (EUR bn)
<b>Climate mitigation</b>	<b>15.88</b>
- of which renewable energy	3.47
- of which energy efficiency	4.59
- of which RDI	1.01
- of which transport	5.94
- of which afforestation & forest management	0.03
- of which waste & wastewater management	0.27
- of which other categories	0.56
<b>Climate adaptation</b>	<b>0.70</b>
<b>Total</b>	<b>16.58</b>

<sup>8</sup> Provisional, unaudited data based on 2017 EU signatures with EIB own resources.

## Climate action mainstreaming

Climate action is integrated into the assessment and monitoring of all EIB investment projects. This is achieved in a variety of ways according to the specificities of each individual project, including:

- the use of an economic price of carbon in project appraisal;
- the use of an emissions performance standard for fossil fuel-fired power generation projects;
- providing technical assistance to promote energy efficiency;
- assessing climate risks and impacts;
- estimating and reporting on greenhouse gas emissions in all investment projects above certain thresholds.

The carbon footprint methodologies the EIB has developed are publicly available on the Bank's website. The EIB 2017 Carbon Footprint exercise estimates the GHG emissions from financing of investment projects at 4.6 Mt CO<sub>2</sub>-eq/annum, and carbon sequestration of 0.2 Mt CO<sub>2</sub>-eq/annum from forestry projects. Estimated savings from the same financing are 1.6 Mt CO<sub>2</sub>-eq/annum. As per all other EIB annual reports, these figures are subject to audit. The carbon footprint data of projects signed in 2017, both inside and outside the EU, can be found in the Bank's Sustainability Report 2017.

## 1.7 Sustainable Development Goals


As the EU Bank, the EIB plays an integral role in the efforts of the EU to ensure the implementation of the 2030 Agenda for Sustainable Development. The EIB is currently assessing how its operations contribute to the achievement of the 17 Sustainable Development Goals (SDGs). The table below highlights the potential connections between selected SDGs and

the EIB's new EU-based projects for 2017. It should be noted that each of the indicators referenced here could contribute to more than one SDG. SDG 6 Clean water and sanitation, SDG 7 Affordable and clean energy, and SDG 11 Sustainable cities and communities are areas where the EIB's operations are particularly likely to have an impact.





## Potential connections between SDGs and new EU-based projects in 2017

	<p>Cross-cutting poverty reduction impacts: EUR 18.2 bn of loans for projects in less-developed and transition regions in the EU</p>
	<p>Production of 140 500 t/y dairy and 150 000 t/y meat foodstuffs</p>
	<p>42 million citizens have access to improved healthcare services</p>
	<p>1.1 million students benefit directly from EIB projects</p>
	<p>21 million people benefit from improved water supply and 29 million people have access to improved sanitation</p>
	<p>Energy production from renewables sufficient for 5.3 million households Almost 1 million additional households connected to the network</p>
	<p>5.5 million jobs sustained in supported SMEs, microenterprises and mid-cap companies</p>
	<p>30 million journey hours/year saved through improved transport infrastructure 7.4 million additional households covered by very high-speed broadband 1 200 km railway tracks built or upgraded 1 100 km highway sections or roads built or upgraded</p>
	<p>9.6 million citizens benefit from new or improved urban public infrastructure and services 565 000 households living in new or refurbished social or affordable housing 1.6 million people face a reduced risk of flooding</p>
	<p>8 400 GWh of energy savings per year from energy efficiency measures 4.6 Mt CO<sub>2</sub>-eq/annum of GHG emissions from financing of investment projects 0.2 Mt CO<sub>2</sub>-eq/annum of carbon sequestration from forestry projects 1.6 Mt CO<sub>2</sub>-eq/annum of savings from the same financing</p>
	<p>Management improved on 80 000 ha of forest land</p>

## 2. Innovation and skills



### 2.1 Research, development and innovation

#### 2.1.1 Strategic context and description of EIB's 2017 RDI operations

RDI is a key driver of productivity, growth and employment, but it has to be funded ahead of any likely return. The intellectual property and know-how that investments in RDI develop may be intangible, but they are assets, and should be treated as such. Investment in RDI in Europe continues to lag behind competitors such as the USA and south-east Asian countries. Progress towards the Europe 2020 Strategy objective of investing 3% of GDP in R&D is slow so the EIB's commitment in this field is all the more important.

RDI investment is not limited to research and development and the wider promotion of innovation across the EU economy. It also includes helping to ensure that Europe has the broadband infrastructure needed by all companies, which must stay connected to their suppliers, their trading outlets, and their customers. The 2017 Digital Economy and Society Index indicates that significant disparities persist between different Member States as regards the deployment of digital infrastructure. The EIB continues to support access to fast broadband services as part of its innovation and skills goal.

The EIB's 2017 investment in RDI took a number of forms:

- supporting innovative firms in their development and commercialisation of new products, processes and services;
- promoting public and private sector investment in R&D in the field of information and communications technology, life sciences, food, sustainable agriculture, forestry and low carbon technologies;
- helping to complete Europe's digital network and create a single digital market that includes digital services.

The EIB provides loans to finance investments in RDI carried out by SMEs, mid-caps, large companies and publicly-funded research infrastructures throughout the EU-28 Member States. Depending on the nature of the entity or risk level, these loans may be supported by EFSI, InnovFin or other mandates managed by the EIB.



# EUR **12.1** bn

for new signatures  
in **innovation and skills**

of which EUR **10.74** billion on **RDI**  
EUR **1.33** billion for **education and skills**

## Selection of expected results from new RDI operations signed in 2017

	Outputs	Outcomes
Research & Development	Some EUR 20 billion of investment <sup>9</sup> in private sector RDI	EUR 33 billion additional potential sales resulting from projects financed by the EIB
	More than 91 private sector companies supported directly in R&D	
Innovation (incl. telecoms)	Some 39 000 4G sites in total	6 million subscribers with high speed mobile data services enabled
	Over 7.4 million additional households covered by very high-speed broadband services	Over 1 million new activated lines

The EIB is increasingly targeting smaller businesses, precisely the type of enterprises that are most negatively affected by market failures in the provision of finance for RDI. 2017 also saw a continuation of the trend where the Bank accepts more of the risk associated with RDI investments.

### 2.1.2 New RDI operations signed in 2017

The new RDI operations backed by the EIB to the tune of EUR 10.7 billion are likely to support RDI projects worth some EUR 35 billion. The private sector is likely to benefit from EUR 20 billion of RDI investment as a result of these operations and six million telecoms subscribers are expected to gain access to high-speed mobile data services.

In 2017, the EIB supported RDI projects in fields as diverse as life sciences, software development and e-Commerce, and worked with project promoters ranging from major companies developing new technologies in the energy storage sector to SMEs engaged in developing new software.

Note: These figures do not include RDI support via framework loans and MBIL operations, where the specific use of funds is only known after the funds have been allocated.

<sup>9</sup> In terms of total project investment cost

## Rail track fault-detection systems, MERMEC Group, Italy

Sometimes, people see Europe's railways as just a useful service: not very exciting, maybe a little old fashioned, but good for the environment. The rails and rolling stock don't appear to have changed much over the years. However, appearances can be deceptive. Modern rail systems are being revolutionised by the application of cutting-edge technologies to make them safer, more reliable, more predictable and more efficient.

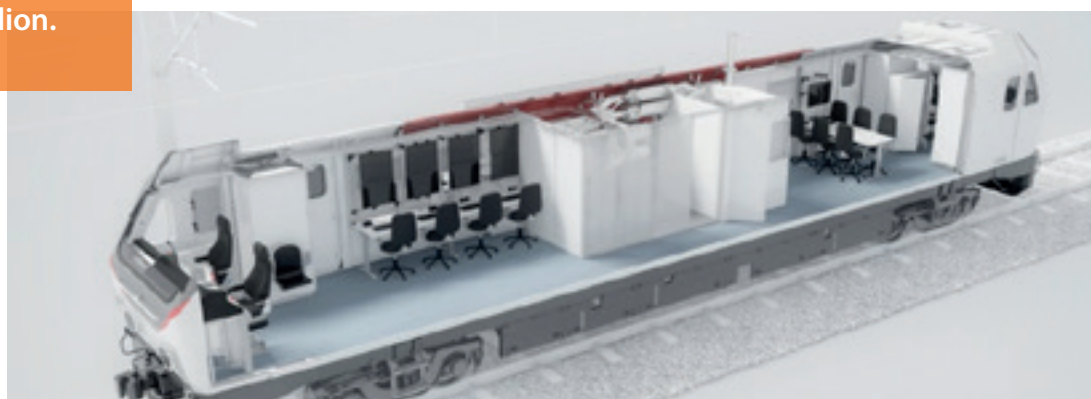
The project with MERMEC Group illustrates this perfectly. The company was originally established as Meridionale Meccanica over 30 years ago, to manufacture railway maintenance vehicles. In the 1990s, in collaboration with the Italian Research Institute, it started to develop an opto-electronic system to detect the condition of the tracks. Since then it has developed its expertise to become a leading provider of technology to the rail industry worldwide. MERMEC is R&D-led, investing the same proportion of its turnover in R&D as companies like Microsoft, and much more than many aerospace companies. The company's current products make extensive use of contactless measuring systems, video tracking and high-speed processing to identify potential safety issues at the train's full speed and track potential problems over time, long before they would have been identified by traditional inspection systems.

The company is also developing products for the wider rail system. One example is the use of three-dimensional video systems to identify the presence on the track of animals, people and other objects which might be at risk or pose a potential threat to the trains, and their passengers and staff.

The policy benefits of this project are clear. It is fully in line with the EU's R&D Horizon 2020 strategy, and the creation of high-quality jobs in Puglia supports the Union's Convergence objectives. MERMEC is also an active member of the EU's SHIFT2RAIL research and development initiative. Without the support of the Bank, there is a risk that the rail industry, and society as a whole, would not gain the safety and security benefits that this research and development project will bring. The combination of an EIB loan and the EFSI guarantee will not only make it easier for the company to access commercial financial sector resources to fund the company's growth, it will make travel safer and more secure for all.

► Research and innovation in railway technology: increasing safety, security, reliability and comfort.

► Total project cost: EUR 73.1 million, EIB loan: up to EUR 30 million, EFSI guarantee, EU grant support EUR 5.25 million.







## Graphene-based electrical storage, Skeleton, Germany and Estonia

Nanotechnology is a buzzword that people like to use when talking about the future of science, engineering and society. They may also mention graphene as an area of nanotechnology with great potential. This project, based in Germany and Estonia, shows that European scientists and engineers are already commercialising a nanotechnology and graphene future, with EIB and EU support.

The project supports the creation and commercialisation of electrical storage devices based on graphene technology. Carbon can be soft when its atoms are arranged in the form of graphite, or very hard when they make up a diamond. Graphene is what you get if you create a honeycomb lattice of carbon atoms that is just one layer thick. A graphene composite would be hundreds of times stronger than steel, but it is its electrical properties which Skeleton is exploiting. Capacitors are often used to smooth the flow of electricity in electronic and electrical devices. Like batteries, they store electrical energy. However, unlike batteries, they can charge and discharge very quickly. A capacitor using graphene sheets can charge and discharge many times faster than a conventional battery: almost instantaneously, with very high energy density. Skeleton is commercialising a range of graphene-based super capacitors to optimise energy use across a wide range of sectors, including direct regenerative braking which could replace hydraulic accumulators on construction machinery or conventional brakes on road vehicles.

Skeleton is a rapidly developing company, making the transition from a venture capital start-up, to a mass production supplier of energy control and storage systems to a wide range of engineering sectors. To achieve this, it is making capital investments at its existing facilities in Estonia and setting up a new production plant in Germany, whilst continuing to invest heavily in research and development. Its EIB loan, backed by an EFSI guarantee, will allow it to build its production facilities and consolidate its market position more quickly than might have otherwise been possible, and to continue developing its cutting-edge products.

► Development and commercialisation of high-speed, high-density energy storage systems based on graphene technology.

► Total project cost: EUR 34.8 million, EIB loan: up to EUR 15 million, EFSI guarantee.

## 2.2 Education and skills

### 2.2.1 Strategic context for EIB's 2017 education and skills operations

Investments in education and skills are critical for the development of a knowledge economy in Europe, and the implementation of the Europe 2020 strategy. At the national and EU level, a well-educated, appropriately skilled workforce is essential for innovation, productivity and growth. For individual EU citizens, the provision of education and training at all levels is essential to ensure access to high-quality employment opportunities and rewarding careers. This is particularly true for younger generations.

The Europe 2020 strategy sets two targets for education and skills:

1. by 2020, no more than 10% of children should be leaving school early. In 2016, the latest year for which figures are available, the EU-28 average was 10.7%, having fallen from 15.3% ten years earlier;
2. at least 40% of 30-34 year olds should have achieved a tertiary or equivalent qualification. The EU-28 average was 39.6% in 2016.

Although both objectives are now achievable, it is important to remember that significant differences exist between, and within, individual Member States.

### 2.2.2 Types of EIB operations to promote education and skills

In 2017, to help achieve the EU targets set out in the education and skills 2020 strategy, the EIB continued to focus its financial assistance on three main areas:

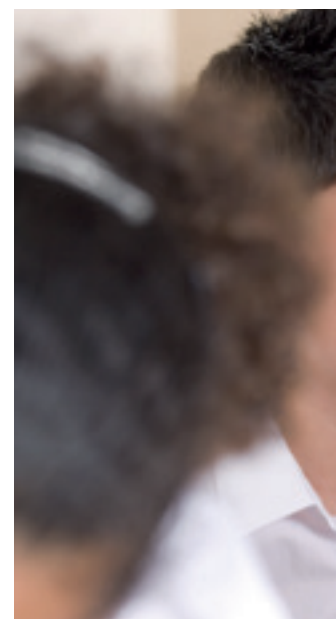
1. helping to ensure that Europe can commit adequate resources to the development of leading research and teaching institutions, and supporting the construction and modernisation of educational facilities;
2. support for the training and skills development of young people enhancing both their employability and their employment opportunities;
3. support for lifelong learning and vocational training opportunities for all age groups through a range of tailored opportunities and supporting measures.

### 2.2.3 New education and skills operations signed in 2017

In 2017, the EIB signed EUR 1.3 billion of new education and skills operations in relation to projects worth almost EUR 6 billion. Over 1.1 million students are expected to benefit directly from these projects in terms of additional or improved facilities and opportunities.

#### Selection of expected results for education and skills new operations signed in 2017

Outputs	Outcomes
Some 50 000 places created in educational facilities	Over 1.1 million students to benefit directly from EIB projects  Some 15 000 additional people will graduate from universities as a result of EIB financing
EUR 51 million of new equipment supplied	
Some 1.25 million m <sup>2</sup> of education facilities built or rehabilitated	



## Energy efficient school buildings in Seine-Saint-Denis, France

Although the population of France as a whole is growing at around 0.4% per annum, in the Département of Seine-Saint-Denis, the sixth largest in France, the rate is 0.8%. Within ten years, the population will have increased by 200 000, and more than 30% of the population will be less than 20 years old. Seine-Saint-Denis is also characterised by below-average levels of adult literacy, an above-average proportion of non-native French speakers, and relative poverty. To help meet these challenges, the education authorities are bringing the existing school stock up to date, and building ten new secondary schools.

The physical objective is to create 5 450 pupil places in new buildings, and 6 230 more places through the upgrading and better utilisation of existing buildings. To operate the new schools, an additional 480 full-time equivalent staff will be employed, mainly teachers. The new schools to be built will meet “Nearly Zero-Energy Building” standards, and the works on the fourteen existing school buildings, with their emphasis on energy efficiency, will allow an average 45% reduction in energy consumption. This is equivalent to avoiding 580 tonnes of CO<sub>2</sub> emissions every year. However, while the energy savings are important for society, and will make education more affordable, the critical objective is to improve the success rate of pupils leaving the schools. At present, 80% of school leavers achieve the Diplôme national du Brevet, against a national average of 86%; mainly due to the socio-economic context of the Département. The EIB’s investments in educational resources aim to improve the life prospects of the individuals attending these schools, and their communities as a whole.

Working together, the EIB and the Département developed a project which supports the objectives of both organisations and which is fully aligned with EU policies. The investment makes a 100% contribution to the EIB’s innovation and skills objective, whilst also supporting the Bank’s climate action objective, with 63% of the project cost directly related to energy efficiency. With the support of the EIB, the Département will be able to implement its development plan at an affordable cost and within the desired timescale. The value added of the EIB’s involvement lies in the provision of long-term financing at attractive interest rates to a financially constrained but fast-growing Département: helping it address social challenges by improving the physical conditions of compulsory schooling.



- ▶ 10 new secondary schools, modernisation/ redevelopment of 12 more, and energy efficiency improvements for a further 14.
- ▶ Total project cost: EUR 499 million, EIB loan: up to EUR 240 million.



# 3. SME and mid-cap finance



## 3.1 Strategic context for SME and mid-cap finance

The EIB channels finance for SMEs and mid-caps through local financial intermediaries under specific contractual conditions. The intermediaries' knowledge of and relationships with companies in their local area should improve access to finance for SMEs and mid-caps which make strong contributions to EU growth and employment but typically face constraints in terms of high borrowing costs and demanding collateral requirements.

Recovery in the European economy is reflected in a general improvement of the economic and financial situation of SMEs.<sup>10</sup> On the question of impaired access to finance as an impediment for

SMEs, the latest EC/ECB SAFE survey, suggests that this has become less important compared to other factors such as competition, availability of skilled staff, market uncertainty, regulation, and energy costs. However, there are still disparities across regions and company size. This is confirmed by the results of the second round of the EU-wide survey on Investment and Investment Finance (EIBIS17).<sup>11</sup>

SMEs are more bank-dependent than larger companies, and have a more restricted range of collateral types which are acceptable to commercial banks. They suffer from greater information asymmetry and, given this more limited access to information, the commercial banks' evaluation of the credit risk tends to lead to higher costs of borrowing. SME lending is also more

<sup>10</sup> For a detailed overview of the different market segments of SME financing, see the EIF's latest "European Small Business Finance Outlook", [http://www.eif.org/news\\_centre/research/index.htm](http://www.eif.org/news_centre/research/index.htm).

<sup>11</sup> EIB (2017), "EU overview of the EIB group survey on investment and finance"





# EUR **15.6** bn

of new signatures  
for **SME and mid-cap finance**

costly for banks, as set-up and monitoring costs, which are analogous to fixed costs, have to be recovered over the smaller loans generally associated with SME lending. There are substantial differences from country to country, and from sector to sector. In general, smaller and younger firms, as well as innovative firms and those with a higher proportion of intangible assets, tend to have the most difficulty in raising finance for development and expansion.

One lesson that has been learnt from the financial crisis is that the corporate sector in Europe – particularly small firms – is too dependent on external finance provided by banks. As part of the recovery process, many banks had to reset their balance sheets and make adjustments to meet new regulatory requirements, and optimise their capital management. These actions all tended to limit the supply of financing for their SME clients. However, there are mechanisms by which investment funds can reach developing SMEs, particularly in

the current liquid environment. Credit guarantee schemes can be effective in these circumstances. Similarly, securitisations, non-bank intermediated sources such as mini-bonds, private debt, financing from fin-tech companies and, of course, venture capital, are all instruments which can be used to enhance the overall competitiveness of the EU economy. All of these are areas of interest for the EIB.

Given the market imperfections that continue to impede and impair financing for smaller companies, and the lingering impact of the crisis on different segments of SME financing in several countries, there remains a clear need for public sector policy support. With this in mind, the Bank has been using external mandates to enhance its support to SMEs, with EFSI being a case in point.

### 3.2 New SME and mid-cap signatures

SMEs and mid-caps constituted the EIB's single largest public policy goal area in 2017 with EUR 15.6 billion for first signatures, representing 30% of all new EIB lending. This EIB financing is expected to support investments of at least EUR 42 billion which, in turn, should help sustain some **5.5 million jobs**.

In addition to traditional intermediated loans to SMEs through local commercial banks, the Bank finances SMEs and mid-caps through a range of innovative instruments, including risk sharing of guarantee portfolios, and equity and quasi-equity operations. The EIB's own lending products are complemented by the European Investment Fund's (EIF) specialised products for SMEs, including venture and growth capital, private debt, mezzanine finance, microfinance and social impact finance.

#### New SME and mid-cap operations signed in 2017

Key indicators	EUR billion	Number
Volume of intermediated loans to SMEs and mid-caps	15.6	226 000
Additional SME finance leveraged through intermediaries	42	

**5.5 million jobs sustained**

#### Selection of expected results from new SME and mid-cap operations signed in 2017

	Outputs	Outcomes
Key new initiatives and pilots for SMEs and mid-caps	Signature of the SME Initiative Italy, providing a guarantee capacity of approx. EUR 142 m	First initiated in 2015, 6 different SME initiative instruments have already been deployed catalysing private investment and fostering job creation
	InnovFin Midcap Guarantee facility (EUR 175m), InnovFin Energy Demo Projects Finance Facility (15m) and InnovFin Infectious Diseases Finance Facility (80m)	In addition to providing guarantees and financing to mid-caps, the InnovFin windows are aimed at bridging the gap between demonstration and commercialisation. They also stimulate investment in research into infectious diseases
	EIB participated in 21 funded and unfunded securitisation transactions having signed EUR 4bn	The securitisations signed in 2017 are expected to support EUR 11.5bn new SME and mid-cap investments

## Sunflower oil production, Bulgaria

Oliva AD is a successful Bulgarian-based operator in the sunflower market, employing 416 people, and was the first beneficiary of EIB direct lending under the EU's EFSI programme in Bulgaria. The company needed financing for the development of a new, greenfield sunflower oil production plant to support its expansion and diversification strategy. The project was intended to support rural economic development in a cohesion region and strengthen a mid-cap company active in the agro-food value chain, so the investment was fully consistent with EFSI objectives.

The new factory is located in Beloslav, Bulgaria, close to agricultural areas of sunflower production and not far from the Black Sea port of Varna, through which most of the production is exported. In the first phase, the new facilities will include grain elevators and silos with a combined storage capacity of 150 000 cubic metres, 22 seed cracking rolls, two screw presses and all related equipment. The project is split into two phases: the crushing capacity will start at 680 metric tonnes per day and will reach 1 500 when fully implemented; and while sunflower seeds will be the primary raw material, the plant will also be able to process soya beans and rapeseeds. The investment includes an on-site wastewater treatment plant and a biomass steam boiler, using by-products as fuel-feedstock, which will provide the factory with all the heating required for production.

Agriculture is an important part of the Bulgarian economy, contributing around 5% to GDP (2016), with oilseeds playing a significant role. The country is the EU's second largest producer of sunflower seeds and local industry currently processes circa 42% of their agricultural production, with the remainder currently being exported for processing elsewhere. Oliva's investments in Bulgaria's agricultural value chain will contribute directly and indirectly to economic development and employment in a less-developed EU region.

- ▶ New edible oil extraction plant targeting exports, using local sunflower seeds, with energy produced from by-products.
- ▶ Total project cost: EUR 62 million; EIB loan: up to EUR 31 million, EFSI-backed.



### 3.3 New initiatives for SMEs and mid-caps

#### 3.3.1 SME Initiative rollout

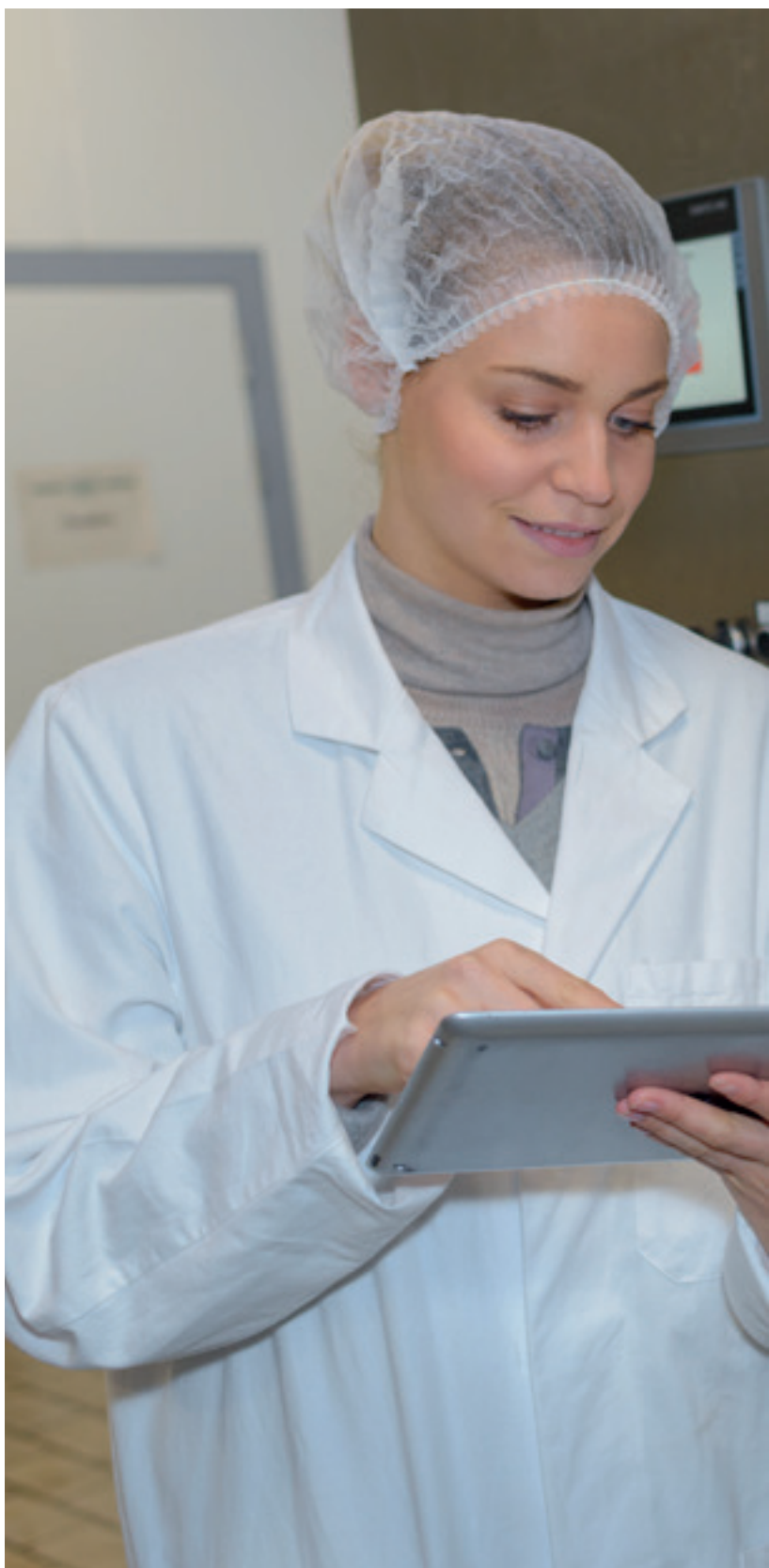
The SME Initiative is a joint financial instrument of the European Commission, the EIB Group and Member States. It aims to stimulate SME financing by financial intermediaries through the provision of partial risk cover for SME loan portfolios which they have originated. Alongside the European Structural and Investment Fund resources contributed by Member States, the SME Initiative is co-funded by the EU budget through Horizon 2020 and/or COSME resources, as well as EIB Group resources. The participating Member States have entrusted the EIB Group with the implementation of the SME Initiative, for which the EIB provides senior risk cover, while the EIF provides upper mezzanine level risk coverage. In 2017, EIB Group continued to expand the initiative through participation in securitisations in Italy, with an overall commitment of EUR 142 million. The SME Initiative has been deployed in six Member States: Italy, Romania, Bulgaria, Malta, Spain and Finland.

#### 3.3.2 Targeted support for climate action and innovation in SMEs and mid-caps

The lack of access to finance for the SME & mid-cap segment is considered a structural market failure with important differences according to geography, business segment and financing type. As the EU economy returns to growth, access to finance is generally improving and EIB policy focus is progressively oriented also towards complementarity with transversal dimensions of SME and mid-cap finance such as innovation and climate action.

2017 has seen significant product developments, intended to adapt to the needs of both the Bank's network of financial intermediaries and the policy expectations of EU stakeholders:

1. the EIB defined a simplified set of eligibility criteria, and a modus operandi, for the appraisal and monitoring of dedicated, targeted, innovation/digitalisation, multi-beneficiary intermediated loans (MBILs). Since July 2017, EUR 0.5 billion has been signed through five loans for SME operations in this field;
2. a similar dedicated approach was adopted for MBIL operations with specific climate action windows. A pilot phase targeted deployment of MBILs with financial intermediaries in several geographical regions that had already shown good results in targeting climate action investments. As a result, the MBIL operations signed during the year for a total of EUR 1.9 billion are expected to generate a contribution of some EUR 774 million, or 42% of the total signed amount.







# 4. Infrastructure



The EIB's investments in infrastructure are about helping to ensure that the EU has the necessary physical structures to be able to create a 'Smart Europe' and cover:

- strategic transport;
- competitive and secure energy;
- integrated territorial development, including urban renewal and health.

Sound infrastructure is arguably a precondition for the achievement of key objectives across a broad range of other policy areas including: research and development, education and training, sustainable transport, environmental protection

and natural resource efficiency, and renewable energy and energy efficiency.

The Bank has a key role to play in providing long-term finance for the development of long-term infrastructure. Its contribution was especially important after the financial crisis which led to a period of under-investment in public and private infrastructure across Europe. Infrastructure investments support progress towards many of the Europe 2020 targets, particularly the efficient and sustainable use of energy.





EUR **14.3** bn  
for first signatures  
in **infrastructure**

for a total project cost of  
EUR **55.9** billion

## 4.1 Strategic transport (including TEN-T)<sup>12</sup>

### 4.1.1 The strategic context of EIB investments in transport

The EIB's aim with regard to strategic transport is to enable and promote trade, and support competitiveness and economic activity in all sectors of the EU economy. This requires the provision of financing for:

- TEN-T investments
- Completion and renewal of Europe's core structural networks
- Improved links to ports, airports, and urban centres
- Multi-modal platforms to support more efficient trade and logistics
- Facilitation of efficient movement of passengers and freight.

The Bank's operations in the areas of strategic transport and sustainable transport (see section on Environment) align with policy goals set out by the European Commission in its 2011 White Paper on Transport, the 2014 European Transport Infrastructure Policy, its 2016 strategy for low emission mobility and the Clean Mobility Package of November 2017. The overarching objective is to achieve a 60% reduction in transport emissions by 2050. Other priorities include closing the gaps between Member States' transport networks, removing bottlenecks that hamper the smooth functioning of the EU's internal market, overcoming technical barriers such as incompatible standards for railway traffic, and promoting and strengthening seamless transport chains.

<sup>12</sup> The EIB's 2017 sustainable transport operations are covered in the section on Environment.

#### 4.1.2 Types of EIB operations supporting strategic transport

When selecting transport projects to finance, the Bank prioritises schemes which are likely to promote:

- **climate- and environmentally-friendly transport** including public transport, railways, inland waterways, and short sea shipping projects. The EIB also actively seeks ways of supporting the development, distribution and uptake of appropriate new technology including alternative fuels;
- **safe personal mobility**, through the development of sustainable urban transport and nodes, and road safety, is a key priority for the Bank. In calculating the benefits of an investment, the Bank's analysis takes into account the savings to society of improving safety by cutting levels of pollutant emissions, alleviating congestion, reducing exposure by minimising travel times, and reducing the number and severity of accidents;
- **innovations in transport** which are important for the achievement of the long-term competitiveness of the EU. The Bank invests in R&D projects and the deployment of new technologies that realise the benefits of the policies outlined above.

#### 4.1.3 New EIB signatures in strategic transport for 2017

During 2017, there were new EIB signatures totalling EUR 5.1 billion (9%) to promote strategic transport development. Investment in roads is expected to save a total of 12 million hours per year whilst improved rail infrastructure will benefit over six million additional passengers annually.

## 4.2 Competitive and secure energy

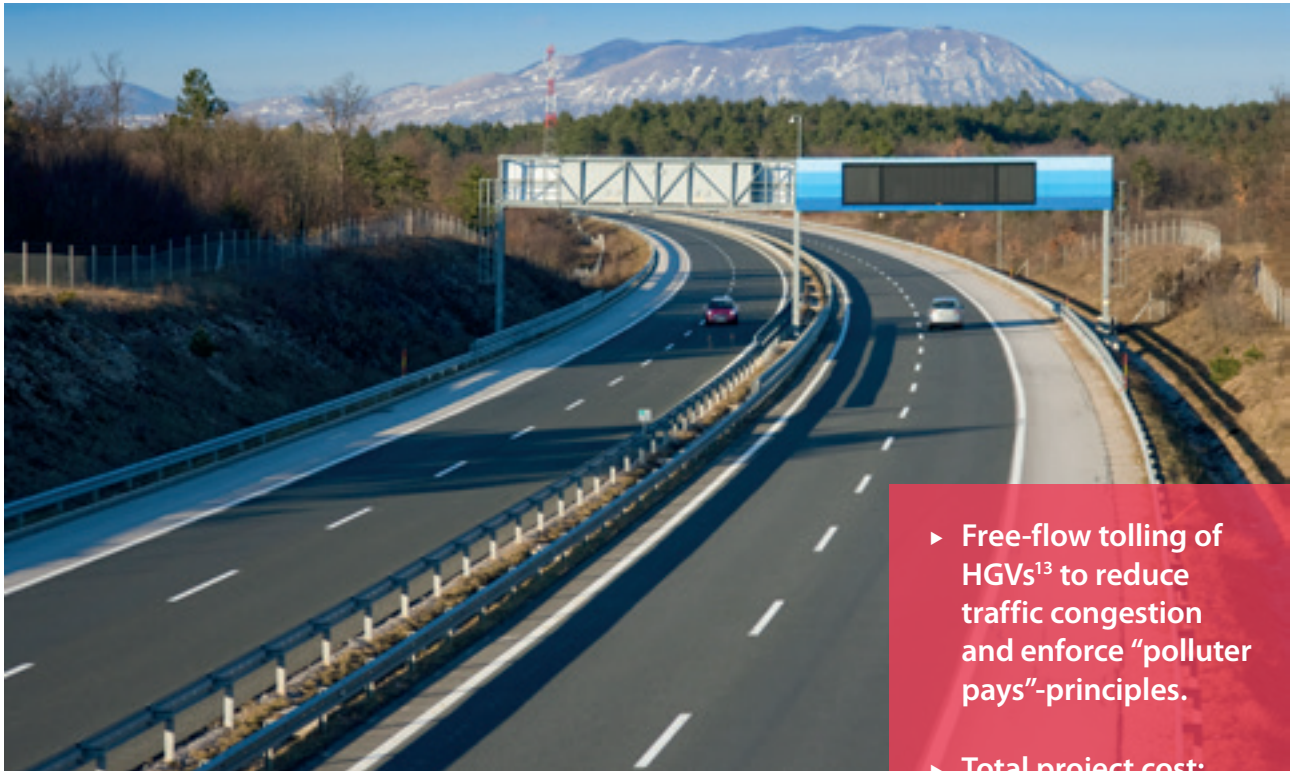
The Bank's activities in the field of competitive and secure energy contribute to the following specific policy goals:

- support cross-border transmission projects in both gas and electricity thereby boosting competition on energy markets and increasing energy security by diversifying sources;
- support the modernisation and the application of "smart" technologies to gas and electricity distribution grids.

### Selection of key results expected from strategic transport (including TEN-T) operations based on operations with first signature in 2017

	Outputs	Outcomes	
Road	Some 1 100 lane-kilometres of roads and highways upgraded or built	Over 110 million additional passengers a year benefiting from new or upgraded road infrastructure per year  Some 12 million of hours of annual time savings related to new or upgraded roads	Over EUR 21 million per year of vehicle operating cost savings
Rail	Over 1 200 km of railway tracks upgraded or built  Over 16 stations constructed or upgraded	Over 6 million additional passengers a year benefiting from new or refurbished rail infrastructure per year  Over 10 million hours of time savings per year	
Sea	Additional 3.2 million tonnes of annual port cargo capacity	Some 3 million tonnes of annual cargo traffic handled in the terminals	
Air	Additional airport capacity of 36 million passengers per year	Additional annual passenger throughput of 41 million passengers	





- ▶ Free-flow tolling of HGVs<sup>13</sup> to reduce traffic congestion and enforce “polluter pays”-principles.
- ▶ Total project cost: EUR 105.4 million; EIB loan: up to EUR 51 million, EFSI-backed.

## Electronic toll collection system, Slovenia

Slovenia is heavily dependent on road transport, which accounts for 80% of all inland transport. Much of this traffic is international transit traffic, with 68% of all HGVs using the motorways being foreign registered.

Conventionally, vehicles have to slow down, queue, stop, collect a ticket or make a payment, exit the toll gate, and accelerate back up to speed. This process wastes fuel, wastes the economic resources of the truck, the driver and the load, increases local emissions and is an inefficient use of financial and human resources. It also contributes to congestion.

The Slovenian motorway network is managed by a single body: Družba za avtoceste v Republiki Sloveniji<sup>14</sup> (DARS). DARS managers proposed to move from conventional physical tollgates to a contactless, free-flowing, Electronic Toll Collection System (ETCS). ETCS is already in use in a number of EU countries, some funded by the EIB.

Under this system each vehicle needs a low-cost microwave tag. These will be available at 80 customer services points, or on-line, and they communicate with 34 gantries or road side-towers, to be installed as part of the project. Using Dedicated Short Range Communication (DSRC) technology, the users will then be charged electronically, based on the distance travelled and the vehicle’s EURO class, supporting the “user/polluter pays” principle, and promoting a more rational and efficient use of roads, leading to smarter transport. There should even be fewer accidents as vehicles will no longer have to stop at the toll booth.

<sup>13</sup> Heavy Goods Vehicle – all vehicles with a Gross Combination Mass greater than 3 500 kg

<sup>14</sup> The Motorway Company of the Republic of Slovenia

#### 4.2.1 Strategic context - competitive and secure energy

A secure and sustainable supply of energy at affordable prices is central to the EU's competitiveness and economic growth, quite apart from its importance for the individual household. However, as the EU's Energy Security Strategy notes, the EU currently imports 53% of its energy needs (90% of its crude oil, 66% of its natural gas) at a cost of over EUR 1 billion per day and is heavily dependent on Russia for much of its energy supply. Furthermore, pressure on energy supplies is growing with global demand expected to rise by 27% by 2030.

Modern energy infrastructure is essential if the EU is to integrate its energy market and meet its energy and climate goals. It is estimated that around EUR 200 billion of investment in Europe's transmission grids and gas pipelines will be needed in the current decade. However, not all of these big investments are able to find the financing needed for their implementation.

The EIB's operations are guided by the priority corridors that have been identified in the Trans-European Networks Energy (TEN-E) strategy. These corridors require major infrastructure developments to connect regions and countries currently isolated from European energy markets, to promote the strengthening of existing cross-border interconnections, and to facilitate the integration of renewable energy supplies into national and international grids.

#### 4.2.2 Types of operations to support competitive and secure energy supplies

The Bank's added value to TEN-E infrastructure projects is exemplified by its ability to provide the long-term finance needed for this type of project. Its terms are very competitive and grace periods and loan maturities can be tailored to the project's construction and operating phases, with the possibility of structured finance as a complement to commercial bank and capital market funding.

In addition to providing various types of finance for infrastructure projects, the EIB also provides technical advisory services, particularly in less-developed regions and on projects involving complex structures, such as public-private partnerships.

#### 4.2.3 New signatures in competitive and secure energy in 2017

During 2017, competitive and secure energy projects accounted for EUR 5.4 billion or 10% of all new EIB signatures in the EU. As a result of EIB financing, enough additional electricity generation capacity will be created to supply over 20 000 households and over 36 million smart meters will be installed.

#### Selection of expected results from the EIB's competitive and secure energy operations with first signature in 2017

	Outputs	Outcomes
Electricity and heat production	<p>45 MW electricity generation capacity from conventional energy sources</p> <p>19 MW of heat production capacity from conventional energy sources</p>	<p>Some 64 GWh of additional electricity produced and 89 GWh of heat generated from conventional energy sources per year</p> <p>More than 20 000 households which could be supplied with the energy generated</p>
Electricity and heat networks	<p>Over 43 500 km of power lines and 525 km of heat pipelines installed or upgraded</p> <p>16 212 MVA of sub-station capacity constructed or upgraded</p> <p>Over 33 million electricity smart meters installed</p> <p>Over 580 000 new electricity and some 4 200 new heat connections to the network</p>	<p>Some additional 63 400 GWh of electricity and 900 GWh of heat transported per year</p>
Gas networks	<p>Some 9 750 km of gas and oil pipelines constructed or upgraded</p> <p>Over 3.1 million gas smart meters installed</p> <p>Over 350 000 new gas connections to the network</p>	<p>Over 350 000 GWh of gas transported or storage capacity utilisation per year</p>

- ▶ Diversifying energy supply and increasing energy security with a new gas pipeline
- ▶ Total project cost: EUR 503 million; EIB loan: EUR 100 million, EFSI-backed; EU Structural Funds: EUR 179 million.



## Transgaz BRUA gas interconnection, Bulgaria, Romania, Hungary and Austria

Natural gas has become a major source of energy for EU consumers. However, the cost of this gas is substantially higher in the countries of South-East Europe than in the rest of the EU. This is due to an effective monopoly in the supply of gas to the countries of the region, dating from before their EU accession. This gas interconnector project is a major component of a new supply route across the region, wholly within EU Member State territories. Creating a more competitive gas supply market will not only cut energy costs for households, but will reduce costs for all types of manufacturing and service businesses, making them more internationally competitive. The project will also improve the security of energy supply in South-East Europe, which currently relies on a single foreign source of imported gas and will therefore benefit from the diversification of the available energy supply promoted by the project.

The strategic importance of this project is underlined by the European Commission's decision to include it in the list of Projects of Common Interest in 2015, but also by the award of a Structural Funds grant of 35% of the project cost under the Connecting Europe Facility.

## 4.3 Integrated territorial development

The EIB's policy goals in this area are to provide financing for the development of smart and sustainable regions and cities by:

- encouraging more mixed-use developments to accommodate higher densities and reduce the need for energy based travel;
- improving individual building performance to reduce energy consumption and carbon emissions;
- investing in more 'equitable' cities by, for example, financing social and affordable housing to mitigate urban poverty;
- investing in the harmonious, balanced, efficient, sustainable territorial development of regions through the financing of Regional Investment Programmes derived from an integrated territorial development strategy.

### 4.3.1 The strategic context for the EIB's integrated territorial development operations

Cities and large conurbations remain the powerhouses of economic growth, innovation and employment and are home to over 72% of all Europeans. However, cities and their continuing growth are facing ever greater social challenges in terms of the environment, transport and social cohesion.

The EU Urban Agenda, which provides strategic context for EIB urban operations, seeks to address these issues on the basis of collaboration between the European Commission, Member States, cities, the EIB, and selected NGOs. It aims to strengthen the recognition of the urban dimension within European and national policy-making, and to "stimulate growth, 'liveability' and innovation in the cities of Europe and to identify and successfully tackle social challenges".

All Europeans live in regions, whether formally politically bounded or not. The Territorial Agenda of the European Union 2020 calls for harmonious, balanced, efficient, and sustainable territorial development. Development needs faced by rural areas, cities and regions cut across different sectors. Sustainable territorial development therefore requires an integrated development strategy across all sectors addressing the development needs of the area concerned in a comprehensive way.

### 4.3.2 Types of EIB operations to support integrated territorial development

The EIB has a long history of financing cities and regions. The Bank finances urban renewal investments through framework

loans to municipalities and specialised enterprises such as housing companies or energy efficiency agencies. It also provides "intermediated" financing through commercial and public sector banks to public or private enterprises, delivering services in urban areas that support urban renewal projects and programmes. In addition it can finance large urban regeneration projects directly, and invest in urban regeneration equity funds.

Similarly, the EIB is a financing partner for regions and their investment programmes. EIB loans typically address priority investments under a region's integrated territorial development strategy. The EIB's framework loan is well suited to such investment programmes, which cut across a range of sectors and address horizontal objectives such as climate adaptation/mitigation. With the framework loan, the EIB and the region agree upfront on project criteria, then approve projects year by year. This gives the region flexibility over the life of the investment programme to add new projects to cope with emerging needs. Similar flexible financing support in the form of Structural Programme Loans is also available to regions where investment programmes are principally financed by European Structural and Investment Funds (ESIF) Operational Programmes.

### 4.3.3 New EIB signatures for integrated territorial development (incl. health) in 2017

In 2017, integrated territorial development (including multi-sector regional and urban lending, social housing and health, but excluding other aspects of the urban agenda such as urban mobility, digital transition and water) accounted for EUR 3.8 billion of new operations. More than 30 million people are expected to benefit in their daily lives from the new or upgraded urban and regional infrastructure financed by the EIB and 42 million are expected to gain access to improved health services.



**Selection of expected results from the EIB’s 2017 new operations in integrated territorial development (including health)**

	Outputs	Outcomes
Urban and regional development	565 000 social or affordable housing units and almost 1 965 social facilities built or renovated	565 000 households in new or refurbished social and affordable housing
	Circa 50 administrative facilities and 320 culture, recreation and sports facilities built or renovated	
	4 000 new refugee/asylum-seeker places provided in new or refurbished reception centres or temporary accommodation facilities	Over 1.3 million visitors per year to new or renovated culture, recreation and sport facilities
	35.6 million m <sup>2</sup> of additional building floor area, including energy-efficient buildings	Some 9.6 million beneficiaries of upgraded or new urban infrastructure and services
825 km of new or upgraded network-lengths of cable, plus equipment installations		
736 000 m <sup>2</sup> of new park area created 1 200 ha of brownfield land regenerated	Over 22 million people benefiting from the upgraded/new infrastructure and services through EIB co-financed multisector regional development investment programmes	
Health	Over 530 km of urban streets and associated infrastructure built or upgraded	
	EUR 19 million invested in equipment and ICT supplied to health facilities. Over 540 000 m <sup>2</sup> floor area in health facilities constructed or upgraded	Over 42 million inhabitants having access to improved health care services.



## A new financing delivery mechanism for urban renewal in Portugal 2014-2020

This project is about the creation of a financing delivery mechanism, with a range of stakeholders, involving public and private sector resources for urban rehabilitation and revitalisation. The funds will be used for private, social or affordable housing projects as well as rehabilitation of buildings for economic activities such as offices, hotels and restaurants in cities throughout Portugal. Fifty percent of the financing comes from public bodies, including the EIB, the European Commission via ESIF, the Council of Europe Development Bank and Portuguese public authorities. Matching these funds will be private sector resources from financial intermediaries, mainly local banks. The final beneficiaries will include municipalities, SMEs, and other public or private entities.

Final beneficiaries present their project proposals to the local financial intermediaries. Applications for financing are subject to the initial decision of the financial intermediary having regard in particular to its credit risk policy, the opinion of the related municipality concerning urban regeneration plan and some other technical eligibilities. Assuming the project proposal meets the eligibility criteria, it will be approved and the local financial intermediary will disburse the funds to the project.

- ▶ Promoting regional development by combining EIB and ESIF resources and delivering via local bank partnerships.

- ▶ Total project cost: EUR 1 000 million, EIB loan: up to EUR 300 million; ESIF: up to EUR 100 million.

The main feature of the programme is that the funds can be re-used several times (revolving fund) as an efficient and sustainable way of financing. The funds will be revolving within the life of the loans from the EIB *et al.* The lending to the final beneficiaries will typically be for shorter periods than the financing. This means that returning capital from early loans can be reused for other projects, provided they meet the same conditions as the first round of lending. This creates a multiplier effect on the original financing.







- ▶ Economic recovery programme for a Spanish region badly hit by the recession, targeting growth and employment.
- ▶ Total project cost: EUR 6 354 million; EIB loan: up to EUR 725 million; other EU: EUR 3 862 million.

## EU funds co-financing Andalusia 2014-2020

The EIB is continuing the work which it started in response to the banking crisis of 2008 and the deep recession which followed. The impact on the Spanish economy is well documented and regions such as Andalusia, are still in a recovery phase. There is no simple solution to events of this kind, and the issues to be addressed are diverse and wide ranging.

The government of the autonomous region of Andalusia has elaborated a development strategy to give the region a new economic impetus. During the implementation phase this strategy will involve the design and execution of many small projects. The objectives of these projects may be grouped under three broad headings: economic, environment and territorial, and social and institutional. The economic objectives cover established priority areas for the EU, including re-industrialisation, export development, improved access to high-speed internet, and digital market development. For environment and territorial, priority is being given to energy saving and the development of renewable energies, rural development, water, urban development and travel infrastructure. Finally, there are social and institutional objectives: social innovation, inclusion, education and training, transparency and improved social administration, etc.

- ▶ **New, state-of-the art hospital replacing outdated, scattered facilities: improving patient care for an ageing population.**
- ▶ **Total project cost: EUR 400 million; EIB loan: up to EUR 100 million, EFSI-backed.**

## Amphia Hospital, Netherlands

Amphia, is a regional hospital in the province of Noord-Brabant, in Southern Netherlands. The project aims at regrouping all core services on a single site, leading to improved patient accommodation, cost savings, higher quality care provision and service benefits. It is an essential step in the development of Amphia's main focus areas: cardiology, oncology, obstetrics, paediatrics, orthopaedics and healthy ageing. All 711 beds in the new facility will be in single rooms and the promoter will also renovate and adapt existing buildings to meet local needs. The natural catchment area of the hospital has a population of some 400 000, whose other options are limited.

Since 2006, the structure of the Dutch healthcare sector has seen substantial changes, with the introduction of managed competition between service providers. The effects of the changes are still unfolding and there is a degree of uncertainty as operators establish their role within the marketplace. The development of the new hospital has therefore been partly driven by the need to maintain its strong position in a competitive market on the one hand and, on the other, the desire to further develop its top clinical specialisations. The services proposed by the hospital are well matched to the needs of the country's ageing population.

However, like private companies, hospitals must seek new sources of financing for capital investments. For the Amphia project, a large part of the financing will come from a consortium of three private banks, at commercial interest rates and, more importantly, with a term over a limited number of years and subject to refinancing. This presents challenges for the hospital group, as it is more beneficial to access finance in line with the lifetime of the assets. Thanks to the availability of an EFSI guarantee, the EIB has been able to offer longer-term financing than was otherwise available, giving the hospital repayment terms in line with asset life and long-term financial stability.









# 5. Environment



**2017** saw the EIB continue its long-standing commitment to promoting a safe and healthy environment. The Bank made substantial investments in fields ranging from sustainable transport through environmental rehabilitation to the development of renewable energy and energy efficiency.

## 5.1 Sustainable transport

In 2017, the EIB's new operations in sustainable transport involved lending totalling EUR 3.1 billion.

### 5.1.1 Strategic context for EIB's 2017 sustainable transport operations

Transport continues to represent almost a quarter of Europe's greenhouse gas emissions and is the main source of air pollution in cities.<sup>15</sup> Although emissions started to decrease in 2007 they still remain higher than in 1990. Road transport is by far the

biggest source of pollution and in the face of growing demand for passenger and freight transport, the risks of pollution and congestion are increasing.

The Europe 2020 strategy does not set targets for sustainable transport. However, in a bid to increase energy efficiency in the transport sector, the EU's low-emission mobility strategy includes mandatory emission reduction targets for new passenger cars and other vehicles. The objectives of the strategy are incorporated into the Bank and Commission's Cleaner Transport Facility which supports projects that help to mitigate the negative impacts of transport. This includes support for the production and deployment of lower emission vehicles and related infrastructure.

The EIB's financing in this field also supports the UN's 2015 Sustainable Development Goals (SDGs) and Framework Convention on Climate Change (UNFCCC).

<sup>15</sup> European Commission [https://ec.europa.eu/clima/policies/transport\\_en](https://ec.europa.eu/clima/policies/transport_en)



EUR **12.3** bn  
for first signatures  
for **environment**

EUR **4** billion of first signatures for  
environmental protection and natural  
resource efficiency

EUR **5.2** billion for renewable  
energy and energy efficiency

EUR **3.1** billion  
for sustainable transport

### 5.1.2 Types of EIB operations to promote sustainable transport

The relatively high cost of sustainable transport investments, and the fact that the financial payback can be relatively long-term, means that it is often difficult to attract private sector financing. This represents a market failure; one which the EIB can help to address.

Sustainable transport projects supported by the EIB in 2017 covered a broad range of transport modes with a particular emphasis on urban transport. In general, the transport projects financed by the EIB are increasingly green compared to previous years.

### 5.1.3 New EIB sustainable transport operations signed in 2017

The EIB's 2017 operations meant that some 9.5 million passengers are expected to benefit from improved urban transport infrastructure, 250 million additional passenger trips can be made and 8 million hours of journey time will be saved.

### Selection of expected results from new sustainable transport operations signed in 2017

	Outputs	Outcomes
Urban transport and rolling stock	Some 2 000 public transport vehicles and rolling stock purchased or rehabilitated	Demand of some 250 million additional passengers generated by public transport services per year (including rolling stock operations)
	130 km of urban rail and bus lanes upgraded or built and some 250 km of urban road built or upgraded	Over 9.5 million citizens benefiting from upgraded or new urban infrastructure and services through multi-sector municipal framework loans
	Some 830 stations or stops upgraded or built	Annual time savings of 8 million hours

## BAI – Honfleur cross-Channel ferry, France

People often think of the EU as a land mass: continental Europe – but the EU has 68 000 km of coastline. Four Member States have no road link to mainland Europe, and another eighteen have coastlines, usually with offshore islands. Linking these are the EU’s “Motorways of the Sea”: key shipping routes between countries and along coastlines. However, while there has been continuous progress in reducing the levels of pollution generated by road vehicles, the shipping industry has moved more slowly. This is partly because of its international nature, and partly because fuel can represent 50% of operating costs. Heavy oil is cheap, but it is also high in sulphur and is a notorious source of SO<sub>2</sub>, particulates, and NO<sub>2</sub>.

Alternatives to heavy oil do exist, and include liquefied natural gas (LNG), which is the chosen fuel for Brittany Ferries’ newest ship. Breton farming co-operatives originally set up the company in 1972, to make it easier to export their produce. Now it has grown to become an international ferry brand, linking Brittany with the UK, Ireland and Spain. The new ship should enter into service in 2019 and will normally run between Caen in France and Portsmouth in the UK. Although there is a cost premium for the LNG, the company has entered into a long-term supply agreement with its energy provider to keep the extra cost as low as possible.

The Bank’s financial contribution will be 28% of the project cost, with the balance coming from the company’s own resources and a consortium of established financial institutions. In view of the project’s important contribution to EU environmental and transport policies, the project was eligible under the European Commission’s CEF. However, having piloted the use of EU support for lower impact fuels, future operations of this type would be supported by the new EFSI Green Shipping Guarantee Scheme.

- ▶ New ferry with new environmental thinking between UK and France.
- ▶ Total project cost: EUR 178 million; EIB loan: up to EUR 49.5 million; Connecting Europe Facility (CEF) support.







## Riga Transport Company trams, Latvia

Riga, the largest city of the Baltic States, has an extensive public transport network with multiple modes: nine tram lines based on mostly traditional, ageing high-floor trams, 19 trolley bus lines with range extension provided by diesel motors, and 53 conventional bus lines – all diesel-fuelled. These achieved some 147 million passenger trips in 2015. However, while passenger numbers were increasing up until 2014, they have fallen into a decline as the network ages, reliability levels fall, and private passenger car numbers increase. To address this, a new set of strategies and programmes have been developed to guide and reverse the trend. One of the city's specific goals is to make Riga a pedestrian, bicycle and public transport-friendly city, and it has adopted a strategy of zero emission vehicles for the city centre to reduce the pollution. In part, this has been driven by the city centre's canyon-like narrow streets, bounded by high buildings, which tend to trap atmospheric pollution at ground level. The trams and hydrogen cell buses have a particular role to play in achieving these zero emissions objectives.

The new investments include: 20 new low-floor trams, plus 11 km of upgraded track to allow the new trams to operate, and a range of other tram infrastructure investments; the acquisition of ten new hydrogen fuel-cell electric buses, supported by a hydrogen production, storage and refuelling station; and the purchase of ten trolley buses with hydrogen fuel-cell-powered range extenders. Range extenders allow trolley buses to operate like conventional buses and travel beyond their dedicated infrastructure. Backing up these investments will be the complete overhaul and reconstruction of a tram depot to allow it to maintain and repair the new generation of low-floor trams.

Riga Transport Trams is yet another example of how projects which benefit from Bank financing can simultaneously support multiple EU policy objectives. Clearly, the project supports the sustainable transport objective, and the horizontal climate action policy. It falls under the Cleaner Transport Facility as it is one of the early examples of the deployment of hydrogen buses. However, the project will also benefit from direct EU support under the EU's CEF and, of course, it is also located in a Cohesion Region. The combination of EIB financing and an EFSI guarantee meant that the borrower could benefit from longer-term lending than the market could offer, and allow crowding in of local commercial banks to support Riga city's transport objectives.

- ▶ Network modernisation: new low-floor, high-capacity trams; hydrogen bus fleet and electric range extended trolley buses.
- ▶ Total project cost: EUR 195 million; EIB loan up to EUR 75 million, EFSI guarantee; EU CEF grant: EUR 5 million.

## 5.2 Environmental protection and natural resource efficiency

The EU's environment policy is aimed at greening the European economy, protecting the natural environment, and safeguarding the health and quality of life of European citizens. In 2017, first signatures in environmental projects totalled EUR 4.0 billion.

### 5.2.1 Strategic context for EIB's 2017 operations to protect the environment

EU legislation has established more than 130 separate environmental targets and objectives to be met between 2010 and 2050. A key Europe 2020 target is to cut energy consumption by 20% relative to "business-as-usual" projections by 2020. The EU's environment policy for the period up to 2020 is set out in the Seventh Environment Action Programme which identifies three key objectives:

- protect, conserve and enhance the EU's natural capital;
- help develop a resource-efficient, green, and competitive low-carbon European economy; and,
- protect EU citizens from environment-related pressures and risks to health and wellbeing.

These objectives are to be met in a number of ways including through increased and smarter investment for the environment and climate policy. The EIB has a key role to play here.

### 5.2.2 Types of EIB operations to protect the environment

The EIB provides long-term financing and guarantees for investment in a range of projects that help to protect the environment. Sectors supported include:

- forestry - afforestation and rehabilitation of degraded areas and low productivity forests. This helps mitigate the effects of climate change through carbon sequestration, prevents soil erosion and increases soil water retention capacity to improve fresh water quality and reduce the risk of floods;
- development of water resources – drinking water and waste water management. Water scarcity and flooding are threats which are being exacerbated by climate change.
- solid waste management – support for progress towards a resource-efficient circular economy through increased investment in recycling and energy recovery from waste bring-

ing environmental benefits and reduced dependence on imported raw materials.

### 5.2.3 New EIB operations to protect the environment in 2017

2017's new operations to protect the environment will bring real improvements to the lives of millions of EU citizens. 29 million people are expected to benefit from improved sanitation and 21 million from safe drinking water. Others will experience reduced risk of flooding in their neighbourhood or improved refuse collection and recycling services.

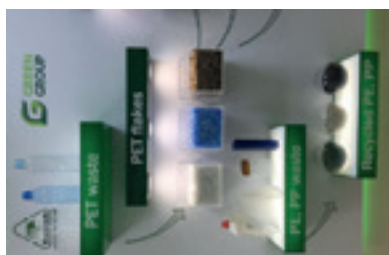
The EIB remained the largest debt provider to Europe's water sector in 2017, a role which included identifying new financial structures for innovation in the sector. The Bank is currently increasing its focus on water security and innovation.

## Selection of expected results from new operations signed in 2017 to protect the environment

	Outputs	Outcomes
<b>Agriculture</b>	490 500 t/y of additional production capacity for food and agricultural products 80 000 ha of land under improved management	290 500 t/y of food and agricultural products
<b>Sewerage</b>	More than 10 million population equivalent of sewerage plant rehabilitated or constructed 26 000 km of sewer and/or storm water pipes built or upgraded	Almost 29 million people benefiting from improved sanitation services
<b>Waste</b>	1.5 million t/y of new or rehabilitated treatment facility capacity, including the treatment of recyclables/ bio-waste collected separately 900 000 t/y of waste absorbed by biogas plant	37 million people served by treatment facilities and 1.8 million people benefiting from new waste collection systems with recyclables/ bio-waste collected separately
<b>Water</b>	267 000 km of water mains or distribution pipes built or upgraded Over 2.7 million m <sup>3</sup> daily water capacity from constructed or rehabilitated water treatment plants 650 000 domestic connections to water supply created or rehabilitated	Some 21 million people benefiting from safe drinking water
<b>Flood protection</b>	Construction and rehabilitation of dykes, flood barriers and flood retention basins Channelling and protection of the river beds when crossing 10 towns and cities	Over 1.6 million people face a reduced risk of flooding







- ▶ Integrated recycling group using PET<sup>16</sup> from discarded plastic bottles to produce PSF<sup>17</sup>.

- ▶ Total project cost: EUR 22.7 million; EIB loan: up to EUR 7.5 million, EFSI guarantee.

## Recycling and circular economy, Green Fibre International, Romania

There is increasing public awareness of the environmental risks posed by plastic waste: from litter in the street to plastic pollution in the oceans. However, one of the answers may just be to stop calling it waste. If we consider one-way plastic packaging as a resource, and the starting point for new products, it would be more highly valued and more of it would be recovered. Green Fibre International is building its future on this type of material in Romania.

This project supports a relatively new company that started out making PET flakes from old plastic bottles. As it grew, its know-how developed until it became one of Europe's market leaders. Now Green Fibre will expand its PET activities upstream and downstream. One of the problems for re-processors is to get a consistent supply of plastic feedstock (old bottles). Part of the project is therefore to create 125 public collection units. At the same time, the company is establishing relationships with national collection systems, and importing materials from other countries which do not have processing capabilities. These inputs will feed into a new processing unit which convert the PET flakes itself into fibres, for use in a range of products, depending on the quality of the input material. Furthermore, having established a collection system, Green Fibre will also operate a Waste Electrical and Electronic Equipment processing unit that will take old appliances, devices and cables, repair what is repairable, extract reusable components, and prepare other materials for recycling. The company recycles other materials too, for example glass and light bulbs, with a high focus on traceability, to facilitate reporting on recycling achieved. By securing part of their feedstock through their own collection channels, and focusing on quality, the company is able to compete with Asian markets that have lower labour costs.

Although Green Fibre is a major processor of recovered plastics, it is still small in absolute terms and the project is a bold step in its development. Growing companies need both additional working capital to fund growth and investment financing to expand their capacity. The EIB's SME/mid-cap loan, backed by EFSI, was therefore critical for the company's development programme.

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<sup>16</sup> PET – Polyethylene Terephthalate – one of the commonest materials for plastic bottles.

<sup>17</sup> PSF – Polyester Staple Fibre, produced using converted PET as the feedstock.



## Water supply and sanitation, Portugal

Many of the Bank's projects involve large-scale investments in a single location. However, the Water Supply and Sanitation project in Portugal is an example of how EIB financing can reach the wider community. The operation supports the investment programme of Aguas de Portugal (AdP), which serves about 80% of the total population.

Over eight million inhabitants are expected to benefit from improved water services and over six million from enhanced wastewater services. To achieve this, treatment plants will be constructed, upgraded or expanded and nearly 2 500 km of sewers will be laid or upgraded, along with 1 400 km of mains water piping. The scale and nature of the physical works means that the programme will take some time to implement, but all of the sub-projects should be complete by the end of 2021.

The project should ensure compliance with key European legislation in the water sector. In 2015, the Portuguese government launched a comprehensive reform programme to improve the quality and sustainability of water and wastewater services: harmonising tariffs across the country, promoting equality and regional solidarity, and strengthening financial sustainability. The reform also involves the aggregation of operators at both municipal and supra-municipal levels to reduce market fragmentation and promote efficiency and effectiveness.

The value added of the EIB's intervention under the EFSI guarantee is that it will allow the AdP Group to carry out a major investment programme on conditions which would otherwise not have been available to it, and accelerate the implementation of targets set by new regulations. In addition to providing the clean water which is regarded as a human right, the project will also improve the system's energy efficiency, and make it more resilient to climate change. There will be a particular benefit in remote areas by allowing a wider range of economic activities to be undertaken, including tourism.

- ▶ Increased water resilience and better wastewater treatment with less energy and a lower environmental impact.
- ▶ Total project cost: EUR 881 million; EIB loan: up to EUR 420 million, EFSI guarantee.



### 5.3 Renewable energy and energy efficiency

2017's new operations in renewable energy and energy efficiency totalled EUR 5.2 billion were first signatures for a total project cost of EUR 20.1 billion.

Renewable energy is proving itself capable of providing an affordable, sustainable and secure energy alternative to traditional sources, while mitigating climate change and, in many instances, reducing environmental damage. Ambitious targets within the framework of the Europe 2020 strategy stipulate that 20% of energy consumption should come from renewables, and energy efficiency (relating both to energy sources and their use) should increase by 20% by 2020. While some regions are already meeting the 20% renewables source objective, the progress overall is quite slow. Achieving the Europe 2020 target will therefore require significant additional investment. Many EIB projects focus on making buildings energy-efficient and developing the efficient use of energy in other fields such as transport.

#### 5.3.1 Types of EIB operations to promote renewable energy and energy efficiency

The EIB supports a wide range of projects to promote renewable energy, energy efficiency, and energy RDI projects that help the EU meet energy and climate objectives and to boost employment. EIB-supported projects include measures to extend existing technologies to new markets, and support for new and innovative technologies, including near-zero energy buildings. The Bank remained one of the largest investors in offshore wind farms in 2017.

#### 5.3.2 New renewable energy and energy efficiency operations signed in 2017

As a result of EIB operations signed in 2017, enough energy is expected to be generated from renewable resources to supply over 5 million homes whilst significant energy savings will be realised due to investments in energy efficiency projects. Of particular interest were new investments in renewable energy projects with elements of risk sharing.

### Selection of expected results from new energy efficiency and renewable energy operations signed in 2017

	Outputs	Outcomes
Electricity and heat production	More than 7 850 MW of electricity generation capacity from renewable energy sources	Some 20 300 GWh of electricity and 440 GWh of heat produced from renewable energy sources per year
	More than 500 MW of heat production capacity from renewable energy sources	Some 5.3 million households can be supplied with the energy generated
Energy efficiency	EUR 5.6 billion of investment in energy efficiency projects	Over 8 400 GWh of energy savings from energy efficiency measures per year



- ▶ Conversion of an existing, wholly conventional commercial building to near zero energy consumption plus a new building.
- ▶ Total project cost: EUR 473 million; EIB loan: up to EUR 200 million.

## Vasakronan Nearly Zero Energy Buildings, Sweden

If a survey were to be carried out which asked people whether it would be possible to make their home a Nearly Zero Energy Building (NZEB), the commonest response might be “not without knocking it down and starting again”. However, the same sample of people would probably also say that a commercial real estate company would only spend money if they were going to make more money in return. Only one of these statements is correct: the second one. This project in Sweden is being implemented by one of the country’s largest commercial property developer/operators, owned by Swedish pension funds. The funds may be state-owned, but the company has to operate on a commercial basis to meet its shareholders’ pension obligations. The company also has a successful track record in the area of energy and the environment, having reduced its carbon emissions by 95% since 2006 and having 80% of its portfolio LEED<sup>18</sup>-certified.

The project has two components. One does indeed involve pulling down an old building and starting again. However, the other involves retaining around 80% of the structure and extending it by 25%. Both developments rely on the district heating and cooling systems of their respective cities: Stockholm and Göteborg. They also have other features in common: high-performance heating, ventilation and air-conditioning systems, high-performance insulation, LED lighting, building and energy management systems, integrated photovoltaic panels, etc. In fact, although the new building can take advantage of slightly higher levels of insulation and a geothermal energy storage heat pump system, both buildings qualify as NZEB’s and will be classified as LEED platinum, the highest standard. One of the few areas where the new building can show an advantage is that by starting with a clean sheet it has been possible to integrate charging facilities for electric cars, and set aside 800 square metres for bicycle parking.

Energy efficiency is a core component of EU decarbonisation strategy and requires sustained investment in buildings. Buildings represent around 40% of the overall energy consumption and are widely considered the largest untapped sector for energy efficiency investments. These two projects are exemplars of what commercial, profit-oriented developments can achieve, even if part of the project involves existing physical structures. As such they rate highly in terms of the EU’s primary objectives of renewable energy and energy efficiency, and the cross-cutting objective of climate action and fully justify the use of EIB resources in their development and implementation.

<sup>18</sup> Leadership in Energy and Environmental Design



- ▶ 18 wind turbines with an operating capacity of 48.6 MW, substituting current high carbon energy production.
- ▶ Total project cost: EUR 54.80 million; EIB loan: up to EUR 23.6 million, EFSI guarantee.

## Viotia Wind Parks, Greece

Although the Greek economy is still in a recovery phase, Greek renewable energy policy is in line with the rest of the EU, and substantial support has been given to investments in renewable energy projects over the last ten years. However, investments in electricity generation based on wind energy have fallen behind government targets, as a result of the economic crisis and structural inefficiencies of the electricity sector. The Viotia Wind Parks project is a step towards filling the remaining gap for Greece's 2020 renewables target, which requires additional investments of around EUR 4 billion by the end of the decade.

The project comprises three groups of wind turbines, with a combined capacity of 48.6 MW, all installed on mountain ridges in the Viotia region, around 90 kilometres north-west of Athens. Underground cables take the generated power to two existing electricity substations, where it feeds into the grid. As part of the environmental permitting process, all three sites underwent an environmental impact assessment, including public consultation, before the works started. The three wind farms became operational in 2017. All of the electricity produced by the wind farms will feed into the grid, based on a feed-in tariff, set in advance and legally guaranteed.

Greece has seen a fall in electrical demand in recent years, particularly in peak demand, due to the combination of a difficult economic climate and the growth in the use of solar energy. However, the introduction of electrical power from this project will reduce the dependence on some thermal power plants which weigh more heavily on the environment.







## 6. European Fund for Strategic Investments



The European Fund for Strategic Investments (EFSI), one of the three pillars of the Investment Plan for Europe, is an initiative launched in 2015 jointly by the EIB Group and the European Commission to help overcome the current investment gap in the EU. In December 2017, EFSI's investment period was extended to end-2020 for approvals and end-2022 for the respective signatures. The financing capacity of EFSI was also increased: EFSI is a EUR 26 billion guarantee from the EU complemented by a gradual EUR 7.54 billion contribution from the EIB. The total amount of EUR 33.54 billion aims to support, by end-2020, at least EUR 500 billion of public and private investment and increased access to financing for entities with up to 3 000 employees. The original objective was to support EUR 315 billion of investment by mid-2018.

EFSI allows the EIB Group to take an enhanced catalytic role, increasing its capacity to mobilise additional investments. It can accelerate the decision to finance a project when risk aversion would otherwise have held investors back. An early intervention by the EIB using lending backed by EFSI can trigger additional resources from other investors who can put in funds with a senior position.

EFSI is managed by the EIB Group, with the EIB managing the implementation of the Infrastructure and Investment Window (IIW), and the EIF the implementation of the SME Window (SMEW). Under IIW, the EIB targets economically viable, generally high-risk projects within the EU or cross-border projects concerning countries within the scope of European Neighbourhood Policy as defined in Article 8 of the EFSI Regulation<sup>19</sup> that contribute to the objectives set in the EFSI Regulation. Under SMEW, the EIF provides intermediated financial support to entities with up to 3 000 employees, with a particular focus on SMEs and small mid-cap companies with fewer than 500 employees. All projects under EFSI are additional, meaning that they address market failures or sub-optimal investment situations and could not have been carried out during the period in which the EU guarantee can be used, or not to the same extent, by the EIB, the EIF or under existing Union financial instruments, without EFSI support.

<sup>19</sup> Regulation (EU) 2017/2396 of 13 December 2017 amending Regulations (EU) No 1316/2013 and (EU) 2015/1017.



## 6.1 EFSI project appraisal under the IIW

All EFSI projects under the IIW are EIB operations, which have to be eligible under at least one EIB public policy goal, and are subject to the same due diligence as any other EIB project, including with respect to procurement, and environmental and social impact. They are also approved by the EIB's standard governance structures. In addition, all EFSI projects are assessed by the EFSI Investment Committee to ensure that they are eligible for backing under the EU guarantee.

Projects should demonstrate that they:

- are economically and technically sound;
- match the eligible sectors;
- provide additionality;
- contribute to EU objectives and to sustainable growth and employment;
- maximise the mobilisation of private sector capital;
- are sufficiently mature to be bankable and priced in line with the project risk.

EFSI projects are assessed using a scoreboard of indicators under four pillars, similar to the 3PA framework used to assess EIB projects.

## 6.2 EFSI activity under the IIW by the end of 2017

Between the start of implementation in 2015 and the end of 2017, the EIB approved 358<sup>20</sup> projects for EUR 39.2 billion, out of which 278 projects signed for EUR 27.4 billion of EFSI-backed financing under the IIW. The related investment to be mobilised<sup>21</sup> is estimated to be EUR 165.3 billion for approvals and EUR 131.1 billion for signatures. These projects collectively contributed to EFSI objectives as follow:

### Overview of EFSI operations signed and not cancelled between 2015 and 31 December 2017 by EFSI objective<sup>22</sup> (EUR billion)

EFSI objective	Signed amount	Eligible investment mobilised <sup>23</sup>
Research, development and innovation	5.83	20.39
Development and deployment of information and communication technologies	2.12	8.65
Development of the energy sector in accordance with Energy Union priorities	7.63	42.77
Development of transport infrastructure, equipment and innovative technologies for transport	3.79	15.72
Environment and resource efficiency	2.03	8.65
Financial support through the EIF and the EIB to entities with up to 3 000 employees	5.08	29.46
Human capital, culture and health	0.93	5.51
<b>Total</b>	<b>27.41</b>	<b>131.14</b>

<sup>20</sup> Approved and not cancelled operations as of 31 December 2017. The total number of approved operations is 362 amounting to EUR 39.3 billion.

<sup>21</sup> Unlocked investment in terms of eligible investment mobilised as per the EFSI regulation.

<sup>22</sup> EFSI objectives listed according to the eligibilities defined in the EFSI regulation.

<sup>23</sup> EFSI objectives listed according to the eligibilities defined in the EFSI regulation.



EFSI operations will have both temporary and permanent employment effects. Temporary employment is associated with the implementation phase of projects and is measured in persons over the years of project's implementation/construction. EFSI-backed operations signed by the end of 2017 will provide 570 000 person-years of employment across the EU Member States.

The permanent employment impact is observed during the operational phase of EFSI projects. The operations signed over the period 2015-2017 are expected to support the creation of some 115 000 full-time equivalent permanent jobs. There should also be significant indirect or induced employment. For example, a project to develop new transport infrastructure such as rail links will almost certainly mean the creation of new jobs in the local economy because firms are able to trade more cost-effectively with key markets elsewhere. Although they are more difficult to measure, it is the longer-term direct and indirect or induced employment effects arising from EFSI-backed operations that are likely to be the most significant.

The Bank's operations involving financing for SMEs and mid-caps are likely to sustain a further 2 million jobs.

### 6.2.1 Research, development and innovation

EFSI-backed loans totalling EUR 5.8 billion in RDI will unlock EUR 20.4 billion of investment for the development of new technologies that are needed to promote Europe's long-term industrial competitiveness. The EIB's loans under the EFSI objective of promoting RDI have provided direct finance to some 114 private sector companies, potentially generating over EUR 79 billion of annual sales resulting from the project.

The following case studies shed more light on the EIB's EFSI-backed operations under the European Growth Finance Facility (EGFF):

- Skeleton is a company which is developing projects in the field of electric energy storage systems based on supercapacitors;
- Mermec is an innovative mid-cap company in the field of rail diagnostics and signalling systems which is aiming to strengthen its competitive market position.

### 6.2.2 Development and deployment of information and communication technologies

The total amount signed by end-2017 under the EFSI objective development and deployment of information and communica-

tion technologies was EUR 2.1 billion with an overall EUR 8.7 billion of investment mobilised. The projects supported included schemes to help develop broadband networks in all 28 Member States. Some of the schemes, such as the Connecting Europe Broadband Fund (CEBF), concern the investment in a broadband infrastructure fund, which supports to a large extent greenfield broadband projects that are mostly located in less densely populated areas, are smaller in size and have a high risk. As presented in the case study below, the EFSI-backed participation of EUR 100 million in the CEBF fund is expected to mobilise an additional EUR 1.37 billion of investment. As a result of EFSI loans signed cumulatively over the past three years under this objective, over one million new subscriptions are expected to be taken out for mobile data services and two million very high-speed broadband lines activated.

### Selection of expected results of EFSI operations signed under the "development and deployment of information and communication technologies" objective by the end of 2017<sup>24</sup>

Outputs	Outcomes
8 661 additional 4G sites	1.3 million new subscribers for mobile data services
15 million additional households covered by very high-speed broadband services	2 million very high-speed broadband lines activated

<sup>24</sup> Based on available information at project appraisal stage. Expected results from cancelled operations have been excluded.



- ▶ Investing in high-speed broadband, particularly in rural/remote areas which are less attractive to mainstream investors.
- ▶ Fund size: up to EUR 500 million; EIB share: up to EUR 140 million; EFSI guarantee.

## Connecting Europe Broadband Fund, EU 28 + Norway and Iceland

High-speed broadband is recognised as a critical enabling technology which can help drive economic development. Its importance is reflected in the European Commission's Digital Agenda for Europe, which includes two relevant targets: widespread 30 Mbps<sup>25</sup> coverage by 2020, and 50% take-up of 100 Mbps by 2020. Many densely populated areas should be able to reach these figures without external assistance, particularly in wealthier regions. However, where economies are weaker, and the population sparse, there are fewer operators willing to make the investments needed to achieve these speeds. Many regional economic development bodies see the digital superhighway as an alternative to fixed transport infrastructure: allowing remote communities in mountainous or coastal regions to provide services instantaneously across physical, national and international barriers. The Connecting Europe Broadband Fund was conceived, developed, and is now funded, with the objective of addressing market failure in the supply of what has become an essential piece of economic infrastructure.

Fixed broadband projects can have a risky profile, with high up-front costs, uncertain demand, and cashflows which take time to develop. This creates a potential financing gap which conventional lenders would seek to avoid. To bridge this, the EIB and the European Commission have joined forces to create the first European broadband infrastructure investment fund. The fund has been designed to allow different investors to accept levels of risk which are appropriate for their own business model. The highest level of risk is carried by the Connecting Europe Facility, managed by the European Commission, followed by the EIB with support from EFSI, and possibly national promotional banks as well. The third, and lowest, risk level targets institutional and other mainstream investors. The fund itself is to be managed by an experienced, professional fund manager with relevant sector experience and a sound track record in managing funds of this type.

The fund will be labelled as an "EFSI Investment Platform" and will focus on equity and quasi-equity investments, with leveraged debt financing coming from the financial sector. The average investment by the fund is expected to be EUR 10 million, offering the prospect of 50 new projects being supported during the commitment phase of the fund.

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<sup>25</sup> Download/upload speed: megabits per second.

### 6.2.3 Development of the energy sector in accordance with Energy Union priorities

Investments in the energy sector are vital for the promotion of secure, sustainable and cleaner energy. Over the past three years, EFSI operations totalling EUR 7.6 billion have mobilised some EUR 42.8 billion for building capacity to generate energy from renewable sources, improving energy efficiency and supporting electricity network projects. Also worth noting is the promotion of major cross-border interconnection projects to strengthen energy diversification and security of supply and promote cooperation between EU countries. The Transgaz BRUA gas interconnection between Bulgaria, Romania, Hungary and Austria presented as a case study in the section on competitive and secure energy, is a good illustration of a project allowing better market integration and increased security of supply. The Viotia Wind Parks operation, described in the section on renewable energy and energy efficiency, further demonstrates the type of project which EFSI can facilitate.

EFSI support is expected to give a significant boost to energy and heat generation capacity from renewable sources, facilitating the transport of both and increasing the number of households benefiting from green energy.

### Selection of expected results from EFSI projects signed over the period 2015-2017 in relation to the development of the energy sector in accordance with Energy Union priorities<sup>26</sup>

Outputs	Outcomes
13 000 MW of electricity generation capacity, of which almost 95% from renewable energy sources	Over 35 750 GWh of additional electricity generated per year, of which over 90% from renewable energy sources  8.2 million households supplied by the energy generated
725 MW of heat production capacity, of which 2/3 from renewable energy sources	3 300 GWh additional heat generated per year, of which 2/3 from renewable energy sources
Some 18 000 km of power lines constructed or upgraded Some 6 250 MVA <sup>27</sup> of substation capacity constructed or upgraded Over 6 600 km of gas or oil pipelines constructed or upgraded Over 28 million electricity and gas smart meters installed Some 637 000 new energy (electricity, gas, heating) connections to the network	Some 28 000 GWh of additional energy transported per year  An additional 108 000 GWh per year of gas transported/storage capacity utilisation
Some EUR 11.2 billion of mobilised investment in energy efficiency projects	Over 5 000 GWh per year of energy savings from efficiency measures

<sup>26</sup> Based on information available at project appraisal stage. Expected results from cancelled operations have been excluded.

<sup>27</sup> Mega Volt Amperes.



## 6.2.4 Development of transport infrastructure, equipment and innovative technologies for transport

Investment in transport infrastructure and the environment is a precondition for Europe's overall economic competitiveness and growth. Almost EUR 3.8 billion of EFSI-guaranteed loans have been signed over the last three years, unlocking some EUR 15.7 billion to promote mobility transport networks, cleaner fleets, as well as projects to reduce congestion costs and trade bottlenecks. One of the new projects signed in 2017 that highlights EFSI's contribution in this area is the free-flowing electronic tolling system supporting inter-operability for heavy vehicles on the Slovenian motorways (presented in the section on strategic transport). Riga Transport (see section on sustainable transport) also shows how EFSI's support is helping to combat pollution. This project consists of the introduction of low-floor, high-volume trams and hydrogen-fuelled buses and trolley buses which will help slow the trend towards private car use and the ensuing traffic congestion.

## Selection of expected results from EFSI operations signed over the period 2015-2017 in transport<sup>28</sup>

Outputs	Outcomes
Over 1 300 lane-kilometres of roads and highways upgraded or built, out of which 15 km of access roads to ports	42.6 million additional passengers benefiting from new or improved road infrastructure per year
Some 70 km of bus and tram lanes and metro track constructed or upgraded	Vehicle operating cost savings of EUR 20 million per year
110 stations or stops constructed or upgraded	Over 95 million additional passengers benefiting from new or improved rail and urban infrastructure per year
1 500 rolling stock units purchased and 75 km of railway tracks upgraded	Time savings of some 23 million hours per year
6 million tonnes additional annual cargo capacity	An additional 3.4 million tonnes of annual cargo traffic handled in terminals
Additional airport capacity of 8.7 million passengers per year	Additional annual airport passenger throughput of 10.7 million passengers

<sup>28</sup> Based on available information at project appraisal stage. Expected results from cancelled operations have been excluded.

## 6.2.5 Environment and resource efficiency

The EU's environmental policy is aimed at greening the European economy, protecting the natural environment, and safeguarding the health and quality of life of European citizens. By the end of 2017, the EIB had signed over 7% of total EFSI lending volume (mobilising EUR 8.7 billion) for projects concerning water supply and sanitation, waste water and solid waste treatment and recycling, as well as to support sustainable urban and rural development. As described in the section on environmental protection, Romania Recycling and Circular Economy illustrates how EFSI can support the transition to a

circular economy and the achievement of national recycling targets. In the area of water supply and sanitation, another recent example is the EUR 815 million investment of the AdP group at subsidiary level in the water and wastewater sector across Portugal.

As a result of EFSI operations in this area, over 13 million people will benefit from improved sanitation services, over 33 million people will have access to improved waste treatment and over 17 million will have safe drinking water.

### Selection of expected results from EFSI operations contributing to environmental resource efficiency signed for the period 2015-2017<sup>29</sup>

Outputs	Outcomes
4 500 ha of new forestry area planted (afforestation) 20 km of agricultural/forestry access roads and 20 km rural roads built or maintained	13 m <sup>3</sup> per hectare of yearly forest growth
Over 19 000 km of sewer and/or storm water pipes built or upgraded Over 2 million persons-equivalent capacity of sewage treatment plants constructed or rehabilitated	Over 13 million people benefiting from improved sanitation services Over 500 000 people face a reduced risk of flooding
Additional 240 000 tonnes per year of waste treatment facility capacity 625 000 m <sup>3</sup> of new sanitary landfill capacity Remediation of 685 000 m <sup>2</sup> contaminated land	33.3 million people served by new or modernised waste treatment facilities 1.7 million citizens benefiting from new waste collection systems
Almost 190 000 waste collection containers and 52 new or upgraded collection vehicles	
Over 264 000 km of water mains or distribution pipes built or upgraded 3.4 million m <sup>3</sup> of water per day from constructed or rehabilitated water treatment plants 2.6 million m <sup>3</sup> of reservoirs or raw water storage facilities constructed or rehabilitated 653 000 domestic connections to water supply created or rehabilitated	Over 17 million people benefiting from safe drinking water

<sup>29</sup> Based on information available at project appraisal stage. Expected results from cancelled operations have been excluded.

## 6.2.6 Financial support through the EIF and the EIB to entities with up to 3 000 employees

By the end of 2017, the EIB had signed 70 operations worth EUR 5.1 billion providing financial support to SMEs and mid-caps and mobilising investment of EUR 29.5 billion. Providing finance to SMEs and mid-caps to enable them grow directly contributes to job and wealth creation. Over two million jobs are expected to be sustained thanks to EFSI operations since 2015. Oliva AD, a Bulgarian operator in the sunflower market, illustrates how EFSI is supporting small companies across the EU.

### Expected results from SME and mid-cap operations signed for the period 2015-2017 under EFSI<sup>30</sup>

Key indicators	EUR billion
Volume of loans to SMEs and mid-cap supported	5
Additional SME finance leveraged through intermediaries	29.5

**2 million jobs sustained**

## 6.2.7 Human capital, culture and health

By the end of 2017, the financial support under EFSI had mobilised EUR 5.5 billion for hospitals, various universities and research campuses, employment and different administrative and cultural facilities. For instance, several employment and start-up programmes have been signed, helping to create the well-qualified workforce that is needed by modern economies, as well as opening up employment opportunities for young people. University of Latvia Research and Study Centre and Nova SBE Campus (PT) are two projects that will contribute to the 15 000 additional places to be created, and the modernisation of educational facilities for more than 21 000 students. Numerous important social housing projects have been undertaken in France, Spain, Poland and Portugal. In the Netherlands, EFSI supported the construction of Amphia hospital to provide state-of-the-art medical facilities to replace geographically scattered services and improve patient care for an ageing population.

<sup>30</sup> Expected results from cancelled operations have been excluded.

## Selection of expected results from EFSI projects signed over the period 2015-2017 contributing to human capital, culture and health<sup>31</sup>

Outputs	Outcomes
<p>Over 150 000 m<sup>2</sup> new or rehabilitated education facilities with over 15 000 places created</p> <p>Over 500 000 social or affordable housing units and 71 social facilities built or renovated</p> <p>6 administrative facilities and 20 culture, recreation and sports facilities built or renovated</p> <p>35.5 million m<sup>2</sup> of additional building surface</p> <p>5 200 m<sup>2</sup> of new parks created and 100 ha of brownfield land regenerated</p> <p>6 300 km of new fibre access networks installed</p>	<p>21 000 students benefiting from new or modernised educational facilities</p> <p>More than 500 000 households in new or refurbished social and affordable housing</p> <p>40 000 visitors per year to new or renovated culture, recreation and sport facilities</p> <p>Over 3.2 million beneficiaries of upgraded or new urban infrastructure and services</p>
<p>Some 150 000 m<sup>2</sup> new or rehabilitated health facilities with over 7 000 beds</p>	<p>Over 30.6 million inhabitants with access to improved health care services</p>
<p>More than 700 000 m<sup>2</sup> of additional health facility floor space constructed</p>	

<sup>31</sup> Based on information available at project appraisal stage.



# 7. Physical project monitoring



**T**he EIB monitors the implementation, completion and early operation of all the projects and programmes it finances. The only exception is lending via MBILs. The monitoring of the small projects these loans support is delegated to the financial intermediary, which is expected to have a close relationship with its final beneficiaries.

Physical project monitoring is an integral part of the EIB project cycle, and offers the Bank the possibility of identifying emerging or potential problems, and mitigating project-related risks, as early as possible. The objective is to ensure that each project financed is successfully implemented and operated in accordance with the Bank's high standards, as agreed with the client during the appraisal of the project, and as defined in the finance contract.

The monitoring also contributes to a broader project management process: maintaining and developing the Bank's expertise, and so adding value to its financial services. Every project monitored gives the Bank an opportunity to develop its processes, and the knowledge accumulated gives the EIB a better understanding not only of project risks, but also of project

merits. This has helped ensure the long-term success of the Bank's financial operations and, by extension, its clients.

The actual level of monitoring is adapted to the needs of the individual project and is influenced by such factors as promoter<sup>32</sup> experience, project complexity, specific loan conditions and location. However, these aspects can vary throughout the life of the project due, for example, to positive or negative external factors, servicing of the loan, the questionable use of funds and other project- or promoter-specific developments. Every project completed in 2017 has been monitored from the start of implementation through to completion and early operation by an expert in the appropriate economic sector. The expert checks regularly that the project is developing as planned, and carries out a final assessment to ensure that it has been completed in accordance with the finance contract, with a further check on its operation three years later. This means that the Bank can take prompt action if significant deviations emerge as compared to the description and conditions laid out in the finance contract.

<sup>32</sup> The EIB uses the term "promoter" to identify the organisation responsible for the development, implementation and operation of the project. The promoter may or may not be the borrower.

## 7.1 Key observations: 2017

As the scope and level of the Bank's lending has expanded, the number of projects under monitoring has also increased. In recent years, this expansion has been largely due to the impact of EFSI. For most projects, monitoring concerns the physical progress of the project. However, in a drive to understand the full impact of the projects financed by the Bank, the complexity and scope of the monitoring process has also developed. Sector-specific indicators and benchmarks have been established against which projects are assessed on completion, and at the end of three years of operation.

2017 confirmed that project promoters take their reporting obligations seriously. The vast majority of documents required for monitoring reached the Bank within the deadlines specified in the finance contract. Consequently, the EIB's services were able to process reporting data and take any appropriate action within a reasonable timeframe. Altogether, more than 250 projects reached final completion in 2017 with a documented Project Completion Report, 85% of which were located within the EU. The smooth running of the monitoring process, coupled with the efforts made by the Bank's services and promoters, means that the EIB can demonstrate that more than 75% of projects reaching completion in 2017 achieved a "High" or "Good" rating with respect to the Bank's quality and soundness criteria. All completed EU projects lie within the scope of the Bank's public policy goals (PPGs), and all non-EU projects meet the objectives of their relevant external lending mandate.

The physical monitoring of projects means that the EIB can provide an accurate account of the impact of its investments. Project outputs and outcomes are fully documented, allowing the Bank to quantify the direct contribution of its investments in individual projects to the appropriate PPGs. As the monitoring process runs its course, the documentation produced helps to tell the story of individual projects. The case studies included in this report owe a lot to the diligent reporting of both project promoters and the EIB's services.

The monitoring process clearly helps deliver strong project outcomes. However, it is the groundwork undertaken by the Bank's services at the appraisal, and even pre-appraisal, stages which lays the foundations for success. Strict screening based on advanced sector expertise means that the services are able either to filter out projects with potentially unmanageable risks completely, or to propose implementation support for projects which pose manageable risks and which would offer substantial economic benefits if implemented. The appraisal process also identifies the challenges a project is likely to face during implementation, allowing the Bank's services to define

risk-mitigating loan disbursement conditions. This approach can lead to complex and sometimes lengthy negotiations, but the high proportion of strong ratings on projects reaching completion testifies to its value.

Only a small fraction (3%) of projects completed in 2017 received an unsatisfactory quality rating. This confirms the value of the appraisal, monitoring and implementation support provided by the Bank's services. The most common problem areas were procurement, project management and project planning. While the absolute number of problem projects is small, solutions and corrective actions are given a high priority, and the Bank tries first to mitigate the problem and then use it as a learning experience. Was the problem due to unforeseeable external events, or would more intensive monitoring or more stringent disbursement conditions have avoided the situation? The aim is to learn from these experiences and identify and develop appropriate preventive strategies.

The EIB's monitoring operations are effective in helping to deliver positive project outcomes. Almost all promoters are diligent in meeting their contractual obligations, and many go well beyond. Monitoring also ensures that the Bank has sound, first-hand information and can report in depth on the impact of its investments in support of EU economic growth and the creation of new employment. Obviously, the projects which the Bank supports are exposed to developments in the macroeconomic context in which they operate - either positive or negative: for example, higher or lower traffic volumes, passenger numbers or energy consumption than anticipated, or unexpected budgetary restrictions imposed in the public sector. However, here are the stories of a few EIB projects which reached completion in 2017. At the individual project level, the case studies presented here are chosen to illustrate the quality of the Bank's monitoring portfolio across different economic sectors and regions. Each project is different, but each one touches the lives of EU citizens in a variety of ways: sustaining or creating jobs, making innovations happen, generating knowledge, boosting the use of renewable energy, improving the security of the energy supply or helping provide transport systems which meet the demands of the modern traveller. Whatever the specific focus of the project, the Bank has worked to ensure an environmentally-friendly, smart and sustainable outcome: one that develops the efficiency and efficacy of the European single market while supporting the welfare of its people.

## 7.2 Case studies: projects completed in 2017

### RDI programme in biosciences

The RDI programme developed new plasma protein products and therapies that are used for treatment of diseases such as Alzheimer's and in vascular and cardiovascular surgery.

The promoter, Grifols is the world's third largest and Europe's largest manufacturer and distributor of plasma products – pharmaceuticals made from donated human plasma (the non-cellular component of blood). Forbes magazine has ranked Grifols amongst the world's 100 most innovative companies.

**The EIB-financed RDI programme** comprised the following themes: (i) the discovery and development of new products (plasma proteins), (ii) finding new therapeutic indications for existing plasma proteins and (iii) the improvement of manufacturing processes to increase the yields of new products and their safety and efficiency. Therapeutic indications include Alzheimer's disease, vascular and cardiovascular surgery and arterial thrombolysis.

**The rationale for EIB intervention** was to promote novel innovations in line with the EU Horizon 2020 programme, so as to enhance quality of life and address major health problems through treating diseases with plasma therapies. The total investment expenditure of the RDI programme was EUR 290.8 million, of which the EIB loan accounted for EUR 100 million or 34%. The financing of the project met the eligibility criteria for an EFSI guarantee and it was among the first EFSI-backed EIB operations fully implemented and completed in 2017.

The RDI programme leads to an average of 100 patent applications and 11 collaboration agreements with universities and research institutes per year. The promoter's European-based biosciences (RDI) division, located mainly in Barcelona, employs around 170 persons full-time.

Global demand for plasma products and derivatives is expected to grow annually by 5-7% over the medium term, varying according to protein and region. The main demand drivers are global population growth combined with increasing disposable income and life expectancy.





## Supporting bioeconomy through modernisation of pulp and paper mill in Portugal

The project promoter, Navigator Group, headquartered in Portugal, is a leading manufacturer of Bleached Eucalyptus Kraft Pulp – a renewable, wood-based fibre used as feedstock for paper, hygiene products, packaging and other bio-based materials. Navigator Group is also a leading producer of uncoated printing and writing papers in Europe and energy from biomass in Portugal, and has a strong track record of professional management and successful business integrations. It has sales to over 130 countries across five continents and exports 90% of its production from Portugal. The round wood, used as the feedstock, is sourced from sustainably-managed forests that meet international forest certification standards (FSC or PEFC). The promoter is the largest private manager of forests in Portugal, with approximately 118 000 ha under its management, of which 65 000 ha are its own forests.

The project was to modernise and upgrade the existing Cacia (Aveiro, Portugal) pulp mill to increase its overall resource efficiency and fibre output capacity, while upgrading its emissions abatement systems and increasing its renewable power output capacity. Besides a 43 000-tonne (14%) increase in the annual fibre (pulp) production capacity, the project significantly contributes to renewable electricity production in the Cacia mill, which is over 200 GWh per year.

The project responded to the globally strengthening demand for renewable fibre that is expected to continue for the following reasons: first, as living standards improve, China is set to become the largest market for pulp in the world, potentially accounting for over one-third of global demand in the coming years; second, e-commerce is increasing demand for sustainable alternatives to plastic packaging; third, the ageing population in developed regions, such as the EU, is creating an increased demand for tissue and hygiene products.

The rationale for EIB intervention was to support the modernisation and upgrading of the existing mill, through reinforcing the mill's environmental performance and sustainability, its resource efficiency and sustainable production of renewable power and fibre. The project safeguards existing jobs directly in the Cacia mill and indirectly in the upstream forestry management and wood logistics sector. Most of the jobs safeguarded are located in EU cohesion regions in Portugal.

The financing of the project involved a loan from the EIB of EUR 25 million, which at project completion represented 49% of the total project cost of EUR 50.6 million.



## Upgrading of Duisburger Hafen – Europe’s biggest inland port

Duisburg is situated at the heart of Europe’s largest industrial conurbation in Germany. Approximately 30 million people live and work within a radius of 150 kilometres. Major European railway lines pass through Duisburg, and five motorways provide connections to all European capitals. The Rhine, Europe’s most important waterway, links the Port of Duisburg directly with the sea ports of Amsterdam, Rotterdam and Antwerp as well as the European inland waterway and canal system.

The project promoter, **Duisburger Hafen AG or Duisport**, is the largest inland port in the world. The port handles the equivalent of 3.6 million containers a year, largely transported on inland waterway barges and by railway to the main seaports in Belgium and the Netherlands. Also sea-going river vessels travel directly between Duisburg and short sea destinations in North-Western Europe and the Mediterranean region. The port is a key node in Europe’s multi-modal logistics network and enables the sustainable transportation of consumer and industrial goods to this high density region. Each year more than 50 million tonnes of various goods are handled, with more than 20 000 ships calling at the port. The public harbour facilities stretch across an area of 7.4 km<sup>2</sup>. There are 21 docks covering an area of 1.8 km<sup>2</sup> and 40 km of wharf.

The project concerned the construction and acquisition of equipment for new container terminals as well as port infrastructure development for bulk freight and metals in Duisburg Port. The Port constitutes a major interconnection point in Europe and, therefore, the project met the criteria to be eligible as a Trans-European Transport Network (TEN) project. The project is part of the ongoing conversion of Duisburger Hafen from a largely industrial port to a multi-modal logistics hub supporting sustainable transport in Europe. The Logport Logistic-Center Duisburg site stretches across an area of 2.65 km<sup>2</sup>.

The financing of the project involved a loan from the EIB of EUR 60 million, accounting for 44% of the total project investment cost at completion (EUR 135 million).

In 2015, at the time of the completion of the investment programme financed by the Bank, the Port of Duisburg handled around 130 million tonnes, which is 18% more than before the project (110 million tonnes per year). The annual amount (2015) handled directly by Duisburger Hafen AG amounted to 68.6 million tonnes. Effective annual growth rates were 2.1% for the total volumes and 2.8% for the Duisburger Hafen AG volumes. The annual handling volumes have been increasing more rapidly than anticipated at the time of project appraisal.

The port and logistic activities continue to have a considerable and growing regional macroeconomic impact and contribute significantly to employment levels in the region. The number of employees connected to the Port of Duisburg increased from 36 000 in 2006 to 45 000 in 2015.





## Connecting the French and Spanish electricity markets

The European power markets are developing rapidly but at the same time power transmission grid upgrades and additional cross-border interconnection capacity are needed to fulfil internal market efficiency and security of supply objectives. This has been the case particularly in the cross-border power transmission between France and Spain.

**The project** has a long history that started at the end of the 1970s when the need for a new interconnection (in addition to the one built in 1955) was first identified. New transmission capacity was built in 1982, but due to rapidly strengthening demand, the interconnection was congested 95% of the time by 2007-2009. Thus, in a difficult local and environmental context, new transmission capacity was urgently called for and the new EIB co-financed project turned out to be the most appropriate response to this call.

The project was to build a High-Voltage Direct Current (HVDC) underground cable link, to meet local acceptance and environmental criteria, with length of 64.5 km, interconnecting France (Baixas, near Perpignan) and Spain (Santa Llogaia, near Figueres) across the Pyrenees. The cables were installed underground with the exception of the section of the route crossing the Pyrenees (Massif des Albères), where the cables were laid in a tunnel with a length of 8.5 km and inner diameter of 3.5 metres.

**The promoters of the project** were RTE and REE, the national transmission system operators of France and Spain. The project was implemented by a joint venture company between RTE and REE, called Inelfe. Inelfe was responsible solely for project implementation; after project completion the ownership of the project was transferred to RTE and REE in equal proportions.

**The financing** of the project involved a EUR 325 million loan from the EIB, accounting for 48% of the total project investment cost of EUR 672.8 million. The project was designated as TEN-E priority project of European interest (EL.3.) and it was granted a EUR 225 million Community fund under the European Energy Programme for Recovery.

**The rationale for the EIB's involvement** in this project was that it contributed to the EIB's lending priority policy on security and diversification of internal supply (including TEN-E projects).

The project doubled the electricity transmission capacity of the whole France-Spain border, thus truly improving diversification and security of supply and enhancing electricity market integration in south-west Europe. The average net transfer capacity of the France-Spain border increased from around 1 000 MW in both directions for the period 5/10/2014 – 4/10/2015 to around 2 000 MW for the first year of operation. Thereafter the net transfer capacity has progressively reached the target value of 2 800 MW.

During the first year of operation, the energy exchanged via the new HVDC line built under the project was in line with expectations at around 15.2 TWh (12.4 TWh from France to Spain and 2.8 TWh from Spain to France).



## Electric fleet and improved infrastructure for London Overground

London Overground is a suburban rail system established in the United Kingdom in 2007. In the five years since its establishment, demand on the Overground has grown by 160% on the 'original' network (i.e. from 2.57 million to 6.78 million customers per four-week period). Now that the extended East London line has also been included, demand shows an even greater increase at 280% (i.e. to 9.83 million customers per four-week period). Responding to this growth, London Overground looked to increase capacity through extending the trains from four carriages to five, and undertaking a variety of infrastructure works to match the extended trains.

**The project promoter** is Transport for London (TfL) which is an integrated transport authority responsible for the day-to-day operation of London's public transport network and managing the main roads. Every day more than 31 million journeys are made across the TfL network.

**The project** responded to steadily increasing passenger traffic by enhancing capacity and alleviating severe overcrowding on the London Overground network, particularly at peak times on some sections. It involved the purchase of 57 Electrical Multiple Unit passenger carriages to lengthen the existing fleet, from four to five cars each, and upgrading the related infrastructure to serve longer trains. This included improvements to stabling, depot and maintenance facilities, platform extensions, signalling and powering supplies. Altogether 46 train stations or stops were upgraded.

**The financing** of the project involved a GBP 130 million loan from the EIB, accounting for 48% of the total project investment cost of GBP 270.3 million. The operation involved two distinct EIB loans to two different borrowers. The first was a GBP 45 million loan to QW Rail Leasing Limited for the acquisition of 57 new train carriages to provide five-carriage train services on the London Overground network. The second was a GBP 85 million loan to TfL to fund the infrastructure improvements of the London Overground network.

**The rationale for the EIB intervention** was that the project supports economic development and population growth by increasing public transport capacity. It improves quality of life through reduced crowding, improves the journey experience, helps to maintain the current high levels of London Overground performance, and also improves air quality through the modal shift of traffic from private cars to rail. It improves safety, also through the modal shift from highways, and similarly reduces the contribution of transport to climate change. It improves transport opportunities by supporting the regeneration of a number of Opportunity Areas<sup>33</sup> and Areas for Intensification<sup>34</sup> through the provision of extra capacity across the whole London Overground network. The project has met the strategic goals set out in the Mayor's Transport Strategy.

**In terms of outcomes**, the project has been a huge success, delivering increased customer satisfaction and supporting the continued strong growth of passenger numbers on London Overground. This success has been recognised by the public, the Mayor and industry. The project won the highest award in 2015, for the "Greatest Contribution to London", at the Institution of Civil Engineers annual awards.

London Overground's passengers travelling on the lengthened trains are benefiting from the additional capacity provided. Altogether 140 million passengers use the London Overground annually, 20% higher than estimated at the time of project appraisal. On a daily basis, patronage is 12% higher than forecasted at appraisal. The increase in daily demand supports the choice of the trains as the transport mode for the corridors. However, it should be noted, that these figures represent the total passenger volume on the London Overground network and include lines that have not benefited from the project.

**Note:** the outcome data is based on information as of September 2017.

<sup>33</sup> Brownfield sites identified in the London Plan as having significant capacity for development.

<sup>34</sup> Areas identified in the London Plan as having the capacity to support redevelopment in terms of new jobs and homes at higher densities than at present but below that considered achievable in Opportunity Areas.

## RDI on Industrial Automation and Automatic Data Capture

The **project promoter**, Datalogic S.p.A. and its affiliates, is a global technology leader in automatic data capture and process automation. The company specialises in the design and manufacturing of barcode readers, radio frequency identification (RFID), detection, measurement and security sensors, vision systems and laser marking. The promoter's products are mainly used in the retail, manufacturing, healthcare and transportation and logistics sectors.

The **project** concerned the European R&D activities of Datalogic's central research centre called DL Labs as well as the main research projects in the industrial automation and automatic data capture sector over the years 2014 to 2016. On average, about 225 R&D experts located in Italy developed new basic technologies and new products/solutions in the area of scan engines, hand-held scanning, sensors, identification, machine vision, mobile computer and laser marking.

The **rationale for EIB intervention** was supported by the project's broad economic benefits through its valuable knowledge spill-overs and externalities, such as the development and extension of European presence in the automatic identification industry that will enable the further adoption of European industrial automation and also improve secure transactions of goods. The project was eligible as an "InnovFin Large Project" under Horizon 2020 Financial Instruments.

The **financing of the project** involved a loan from the EIB of EUR 30 million, which at project completion represented 36% of the total project cost (EUR 83.97 million).

The project helped the project promoter to maintain its position as a leader in the automatic data capture and industrial automation industry, putting a strong emphasis on innovation and developing new products and technologies. Datalogic generated over 100 patent applications related to new products and technologies and created 47 new permanent positions for researchers and experts.





## Solar park in Cestas near Bordeaux (Gironde – France)

The project was built by a consortium led by Eiffage and Schneider Electric. It is currently managed by NEOEN – an independent producer of sustainable energy. NEOEN has been building on its experience in the renewable energy sector with solar, wind and biomass projects in France and Portugal since 2008.

**The project** is one of the largest solar photovoltaic power plants in Europe with a total nameplate capacity of 300 megawatt-peak (MWp). It is connected to the national power grid, managed by RTE, the French transmission system operator.

The solar power plant spans an area of 265 ha located 20 km south-west of Bordeaux, close to the village of Cestas. An area equal to the one occupied by this park has been reforested in the Gironde. The solar panels have been in operation since November 2015.

**The rationale for EIB intervention** was in the project's valuable contribution to (i) EU and national objectives in generating renewable energy, (ii) increasing the security of the energy supply, and (iii) mitigating climate change by reducing greenhouse gas emissions from energy generation.

The project was the first photovoltaic project financed by the EIB in Europe which demonstrated its competitiveness both in economic and financial terms against a conventional alternative, namely a combined-cycle gas turbine (CCGT) plant.

**The financing of the project** involved a loan from the EIB of EUR 56 million, which at project completion represented 16% of the total project cost (EUR 352.08 million). The loan was intermediated through a French financial intermediary as an allocation under a larger framework loan from the EIB (France Energies Renouvelables).

During its first year of operation, the park generated 343 gigawatt-hours (GWh) of electricity. The project's long-term expected average electricity output is about 355 GWh/a – enough to supply electricity to nearly 70 500 households (using the latest available World Energy Council data on average electricity consumption of electrified households in France, i.e. 5 036 kWh per year).



Picture: ©Gimball Prod









## Annex 1 Value Added

The Bank measures its success in terms of its contribution to EU policy, the quality and soundness of the projects it finances, and the technical and financial contribution it makes to each project using its Three-Pillar Assessment (3PA).

### Contribution to EU Policy

Before accepting a project proposal for possible finance, the Bank first checks that it meets at least one of the Bank's policy objectives, as outlined in Section 1.1.2. In practice, most projects financed by the Bank meet multiple objectives. An innovation project may be located in a priority region and may be an SME: all EIB policy objectives. The Bank has a structured methodology for identifying and measuring the potential policy impacts of all of the projects it funds, and tracks these through the projects' implementation, completion and operational phases.

## Quality and soundness of the Project

Projects can only achieve their policy objectives if they are effective, efficient and sustainable. All projects are therefore the object of a due diligence process which thoroughly analyses both the project itself, and the promoter of the project, who is usually the Bank's borrower. This due diligence process is almost exclusively carried out in-house. All projects are rated for soundness and quality. These measures form the basis of the Bank's monitoring of the project at different stages in the project's life ensuring that the project is achieving its original policy objectives, and providing a comparison with the impacts being achieved by other, similar projects.

### EIB's technical and financial contribution to the project

The Bank's financial contribution typically takes one or more of the following forms:



- Loan term – The EIB is a long-term lender, offering maturities which are typically much longer than a commercial bank would be prepared to provide to the same borrower. This not only provides a better match to the life of the asset being financed, but it means that capital repayments can be more manageable. The Bank’s technical expertise in its Projects Directorate is used to assess the effective life of the assets, and hence the maximum term of a loan.
- First mover – The Bank, due to its in-house expertise and financial strength, will often be the first to commit to the financing of a project, after which commercial banks may also provide support. The longer-term loans offered by the EIB, mean that there is more cash flow available to satisfy the lending criteria of other financial sector actors.
- Halo or catalytic effect – The implementation and quality of the Bank’s due diligence process, and the knowledge that the EIB only finances economically viable and financially

sustainable projects, increases the likelihood that other banks and investors will involve themselves in the project.

The technical contribution of the Bank can be classified as being either formal or informal. The formal role is primarily the responsibility of the Bank’s Advisory Services Department. This provides structured technical and financial advisory services to internal and external clients. External services build on the Bank’s historic strength in project development and risk assessment, to support a wide range of mainly public sector projects. Informal services are provided during the pre-appraisal and appraisal stages of the EIB-client relationship. The breadth and depth of the experience which the Bank’s engineers and economists can offer often helps guide project promoters to better, more cost effective, and more appropriate capital expenditure. See the section on the Bank’s advisory role for more information.



## Annex 2 Overview of operations signed by EIB in 2017 inside the EU by country and type of financial instrument <sup>35</sup>

Country/EIB financing type	Investment loan		Framework loan		MBILS, guarantees and equity/Q.E.	
	Amount signed (m EUR)	Number of operations	Amount signed (m EUR)	Number of operations	Amount signed (m EUR)	Number of operations
Austria	821.8	9			430.5	8
Belgium	1205.0	7	100.0	1	196.5	2
Bulgaria	210.0	4			40.0	2
Croatia	61.7	3	40.0	1	430.0	4
Cyprus	143.0	3	25.0	1	165.0	2
Czech Republic	51.9	4			925.0	10
Denmark	879.6	8			164.0	4
Estonia	1.5	1	100.0	1	9.5	2
Finland	1098.6	12			212.3	4
France	4701.9	33	840.0	3	1861.4	25
Germany	4499.1	28	683.0	6	1424.2	22
Greece	1061.0	6	205.0	3	833.0	3
Hungary	1.5	1	200.0	1	500.0	2
Ireland	740.0	5	70.0	1	125.0	2
Italy	3904.6	36	2443.0	7	4459.2	26
Latvia	106.0	3			3.0	1
Lithuania	1.0	1			10.0	1
Luxembourg					19.5	2
Malta	5.0	1	24.7	1		
Netherlands	1362.6	13			812.5	8
Poland	2973.4	17	606.9	11	1461.8	13
Portugal	295.0	5	152.0	2	1067.0	9
Regional - EU countries	22.0	3			1493.5	21
Romania	219.5	5	1021.0	2	75.0	3
Slovakia	85.4	3	25.0	1	210.0	6
Slovenia	56.0	2				
Spain	3146.2	25	472.5	4	6578.5	30
Sweden	2097.8	15	77.8	1	167.4	7
United Kingdom	1335.7	6	149.0	1	358.4	2
<b>TOTAL</b>	<b>31086.8</b>	<b>259</b>	<b>7234.9</b>	<b>48</b>	<b>24032.3</b>	<b>221</b>

<sup>35</sup> Given the cross-border and multi-instrument nature of some operations, the total number of operations presented in the table exceeds the nominal 445 operations signed in 2017.



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