



Fostering innovation to remain competitive

Europe's future depends on its ability to innovate. Competition with the US and other major economies is tough as expenditure on R&D and innovation keeps growing and industry moves towards digitalised methods of production. In 2015 alone, the EIB Group supported innovation and skills with EUR 18.7bn of loans in Europe, EUR 16.13bn of which were provided by the European Investment Bank (EIB) and the remaining EUR 2.54bn by the European Investment Fund (EIF).

EUR 18.7bn to support **innovation and skills** in Europe in 2015

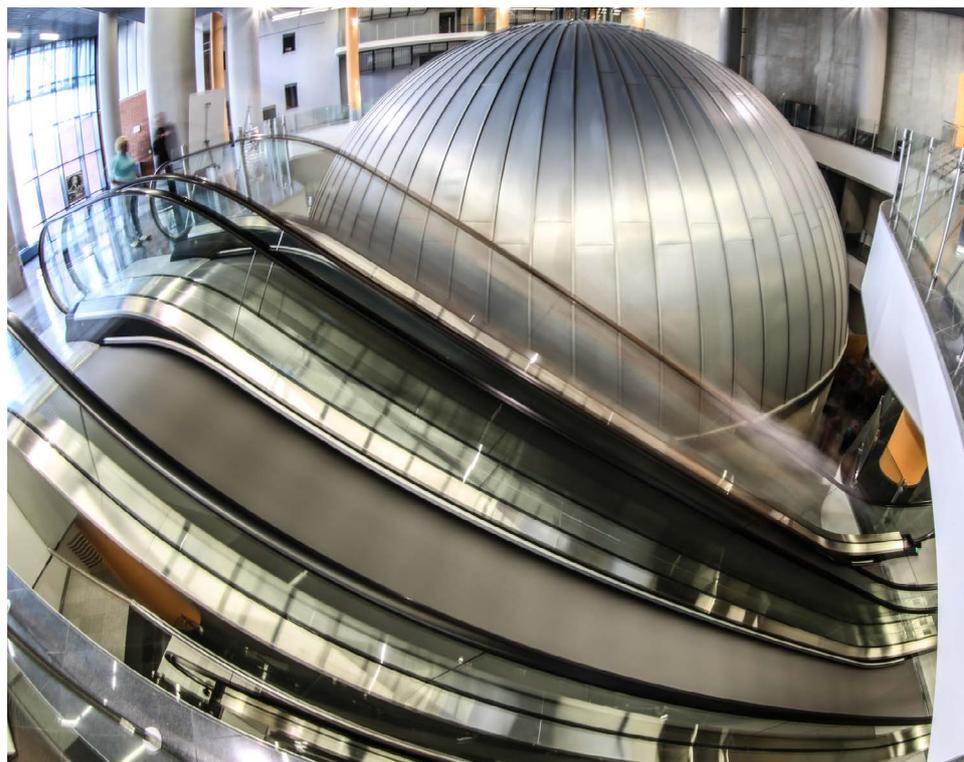


Financing the future

Innovation and skills are key ingredients for driving growth in Europe and ensuring the region's long-term competitiveness. But economic growth and innovation require adequate finance at a reasonable cost. The EIB has made this a top priority and is further increasing its support as Europe is lagging behind most other regions in the world and needs to invest more in order to catch up. The Bank helps finance a European innovation system that stimulates excellence, backs ambitious research as well as cutting-edge innovation, and funds digital networks.

Better skills, better jobs, better lives

Today's students will develop tomorrow's innovations. But Europe has fallen behind the US, which spends twice as much per student in higher education. Loans by the EIB are aimed at reversing that trend.



Overall, in 2015, the EIB helped finance 32 education and training projects in 13 EU countries with a total amount of EUR 4.3bn. Across Europe 1.45 million students already benefit from EIB loans.

Not only does the EIB support refurbishment measures and the construction of new facilities at schools, higher and further education colleges and universities but it also encourages the mobility of students, researchers and academic staff by supporting relevant national programmes and demand-side measures through tailored student loan schemes.

To that end, one of the first loans for youth was provided in Spain, a country where one in four people between the ages of 18 and 29 is not in education, training or employment, one of the highest rates in Europe. The EUR 200m loan to Santander, Spain's largest bank, will help to fight youth unemployment and tackle education investment needs. A first in Spain, funds under this operation

are being channelled through Santander to students in higher education, young people looking for their first job, young entrepreneurs, education facilities and research projects. With its network of 4 200 branches on and off university campuses, the bank is well placed to roll out the new scheme. Increasingly, every business is a digital business. So high-speed internet, mobile networks and cloud computing are priority areas for the Bank.

Accelerating innovation to boost competitiveness

Europe is facing the challenge of competitiveness and innovation at a global level. EU investment in R&D has been below 2% for ten years while countries in Asia, such as Japan and South Korea, spend more than 3% of their GDP on this sector. China invests slightly more than the EU on R&D, while the amount spent by the US remains stable at about 2.8%. In order to reach the 3% target for R&D set at EU level, Europe would need to spend

EUR **14.3bn** 
for youth skills and employment in EU

approximately EUR 130bn more per year on R&D. On top of that, investments of about EUR 90bn per year are needed for modernisation investments in industry, notably for catching up on the latest generation manufacturing technologies.

Europe's future economic growth and jobs will increasingly have to come from innovation in products, services and business models. Bringing new products and services to market is one of our biggest challenges and one reason why Europe is lagging behind. The challenge of the

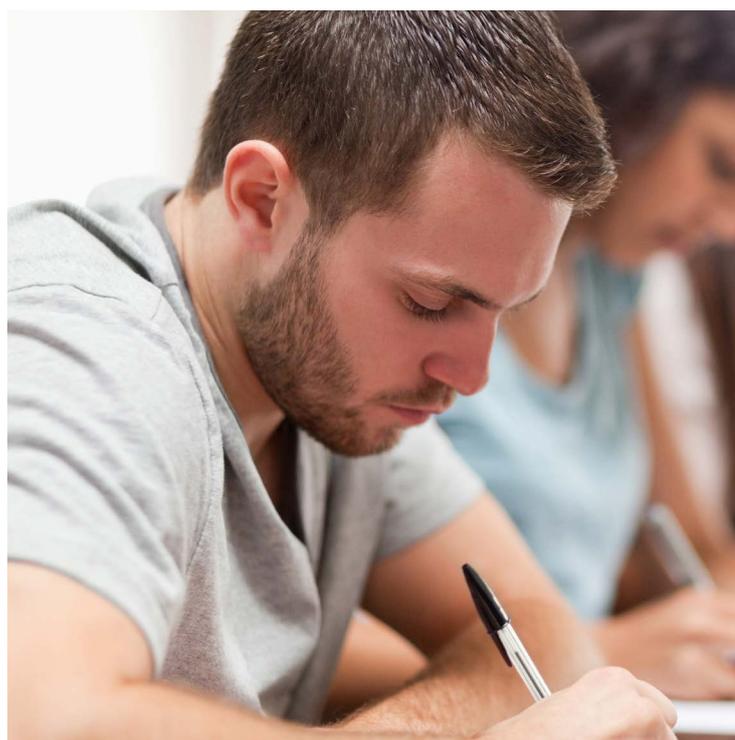


Skills and Jobs – Investing for Youth

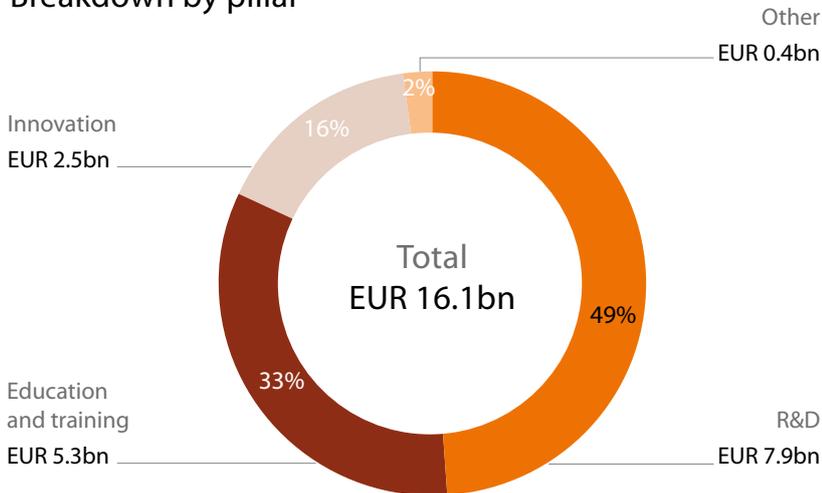
Youth unemployment is one of Europe's big challenges. In a bid to address the jobs crisis facing the EU's 15-25 year olds, the EIB launched the "Skills and Jobs – Investing for Youth" programme in mid-2013. From its launch to the end of 2014, the initiative supported the jobs of some 800 000 young people. Results from a recent survey suggest that during this period 26 000 new jobs for youth would not have been created without EIB support.

The initiative's aim is twofold:

- to boost "Jobs for Youth" across the EU by improving access to finance for SMEs;
- to enhance employability via "Investment in Skills", targeting projects focused on education, vocational training and student finance.



EIB support for innovation and skills in 2015 in Europe Breakdown by pillar



Where can the Bank help?

We finance investments in research, technology development and innovation across the board, including joint research programmes at EU and national levels, research infrastructure and academic research in public and private universities, as well as downstream initiatives and investment in support of manufacturing technology, incubators, science and technology parks and clusters, to facilitate the transfer of knowledge and expertise between academia and the business sector.

coming years is to reclaim lost territory and become again one of the leading technology providers in the world. The EIB's focus on lending for innovation aims to address this issue as access to finance

helps to ensure that innovative ideas can be turned into new products and services. To that end, in 2015 alone, the EIB helped finance 75 RDI projects in 21 EU countries with a total amount of EUR 7.9bn.



Helping the young get off to a good start

Miriam Mauri Coiduras has just completed her course in civil engineering at the Politechnical College of the European University of Madrid. The only thing left for her to finish her degree is her final project, which she will carry out in Kuala Lumpur, Malaysia.

But the road to Malaysia has been neither easy nor short. Miriam, originally from Barcelona, studied public works engineering at the Politechnical University of Catalonia, although she was convinced that she would have more work and exchange opportunities in a private university. For this reason, as soon as she had finished her technical engineering course she took a year out to save and prepare for starting at the European University in Madrid – her study location of choice. "University costs EUR 12 000 per year and my family simply can't afford that. By working as a hostess and model, I was able to save half of the fees, but I was still EUR 6 000 short so I decided to ask for a loan."

She went to the Santander Bank branch at the European University. There she was informed of the financing options available to her. "The head of the campus bank branch told me that I could take out an EIB-backed loan for university students, which had better conditions than the others, and I didn't hesitate. The whole process was wrapped up very quickly. In less than two weeks the money was in my account," Miriam remarked.

Digital economy: the key to long-term growth

Another ingredient stimulating technological innovation is digital infrastructure. In particular, internet-based technologies will continue to be an essential driver of productivity growth. Investing in the digital economy is thus necessary to support Europe's growing data traffic and it is also one of the main goals of the EU's Digital Agenda. Increasingly, every business is a digital business. So high-speed internet, mobile networks and cloud computing are priority areas for the Bank.



To reach EU targets for broadband, data centre capacity and cyber-security requires EUR 65bn a year. The EIB made a lot of deals in 2015 to lay the groundwork.

15.3m new or upgraded digital connections

Telecom Italia **EUR 500m**
...7 million households

Nord-Pas de Calais (France) **EUR 147m**

Orange Poland **EUR 190m**

Alsace (France) **380 000 connections**

Lower Saxony (Germany) **EUR 150m**

Hessen (Germany) **EUR 150m**

Finland and Estonia **EUR 150m**

Malta Telecom **EUR 30m**



Keeping brains at home

On July 2016, the EIB agreed to provide EUR 180m to support the creation and first operations of the new Hellenic Foundation for Research and Innovation (ELIDEK).

Once operational, the Foundation will manage the evaluation and financing of research projects, academic positions and investment in scientific equipment. This will strengthen financing of research in Greece and ensure that research jobs can be created for young scientists and doctoral students who might otherwise leave the country to seek opportunities elsewhere. This is the first time that the EIB has backed research activity at a national level in Greece.

The Foundation will provide funding for fundamental research by universities, higher technology institutes and public science institutions to support the national strategy for research and innovation, itself aligned with the National Growth Strategy. This is expected to represent around 15% of public research investment in Greece.



The EIB toolbox for more value added

Our **traditional financing products** are medium and long-term loans with fixed or variable interest rates in euros or other currencies. We finance large projects with direct loans, while we support smaller projects indirectly, through credit lines to local banks or other intermediaries. The EIB offers the opportunity to combine its financing with EU grants, depending on the scope and definition of the project.

Going beyond conventional approaches, our **new financial products** embrace ways of funding investments in innovation:

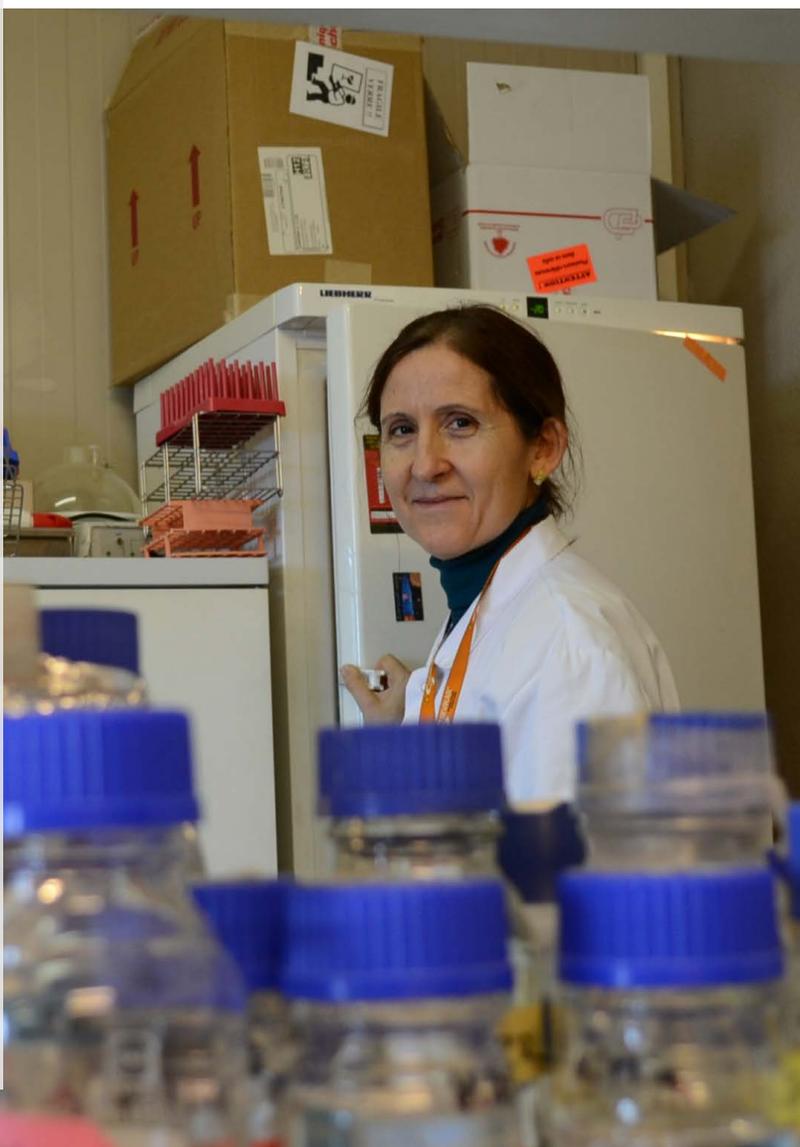
- layered-risk funds, enabling the issuance of direct share tranches and notes to offer investors different risk-return profiles;
- equity funds, filling market gaps and piloting new areas;
- capital market activities, such as the Project Bond Initiative;
- initiatives such as InnovFin – EU finance for innovators or the European Fund for Strategic Investments (EFSI).

Academic spinouts: from Paris universities to the market

In her laboratory at Université Pierre et Marie Curie in the historic Pitié-Salpêtrière Hospital in central Paris, Angelita Rebollo has developed a technique for blocking specific functions of proteins that turn a healthy cell into a cancer cell. The treatment could help people with a range of illnesses, though initial results suggest it will first be used to treat ovarian cancer and severe types of breast cancers. While chemotherapy causes numerous side effects by destroying many good cells along with the cancerous ones, Rebollo's targeted therapy kills only the cancerous cells. Her research into the topic started 17 years ago in Madrid and led her to found a company, PEP-Therapy, with a few other scientists working at prestigious French research institutions.

PEP-Therapy received EUR 1m of support from Quadrivium 1, the first French investment fund to provide seed funding for life sciences and digital technology projects that start out at – or are linked to – a dozen French academic research institutions. It's a model that was pioneered by US universities. In Europe, it has been taken up most strongly in the UK. But it hasn't been done before in France. "It has been challenging to introduce this concept to France," said Philippe Tramoy, the Quadrivium 1 partner who manages its life sciences portfolio. "We're the first, so everybody is watching us to see if this is something they can follow."

Quadrivium 1 was a French first when it started in December 2013, managed by a team at Seventure Partners and funded by several investors, including Bpifrance, a subsidiary of Caisse des Dépôts. On 29 April 2016, the fund got a EUR 20m injection from the European Investment Fund, a part of the EIB Group, taking Quadrivium 1's total financing to EUR 56m.



InnovFin

EU Finance for Innovators



One of the key factors constraining the implementation of research and innovation activities is the lack of available finance on acceptable terms for innovative businesses, which often deal with complex products and technologies, unproven markets and intangible assets.

In order to overcome these obstacles, the EIB Group and the European Commission joined forces in 2014 and launched a new range of products under **InnovFin – EU Finance for Innovators**. This flagship initiative complements the EIB Group’s existing financial offering for research, development and innovation projects.

InnovFin – EU Finance for Innovators comprises ten financial products and one advisory service, covering both direct loans from the EIB Group, guarantees to and equity investment via financial intermediaries. It is tailored to a wide range of clients from innovative small start-ups to large enterprises and public institutions.

Between 2014 and 2020, it is expected that the InnovFin products will make available more than EUR 24bn of financing for research and innovation by small, medium-sized and large companies



and the promoters of research infrastructure. In order to respond swiftly to financing requests, streamlined procedures have been established to reduce the time needed to secure financing for smaller companies – from first contact to signature of contract – from three to six months. The EIB’s due diligence process

involves the assessment of the company’s or project’s eligibility, technical and economic viability and environmental soundness and the promoter’s financial situation and outlook. InnovFin is set to trigger many times the investments of its predecessor, the Risk Sharing Finance Facility (RSFF).



Early-Stage Enterprises	SMEs
InnovFin Technology Transfer	InnovFin SME Guarantee
InnovFin Business Angels	
InnovFin Venture Capital	
InnovFin Fund-of-Funds	

Midcaps	Large Caps	Thematic Finance	Advisory
InnovFin MidCap Guarantee	InnovFin Large Projects	InnovFin Energy Demo Projects	InnovFin Advisory
InnovFin MidCap Growth Finance		InnovFin Infectious Diseases	

Direct products
 Indirect products

More than a loan

InnovFin Advisory

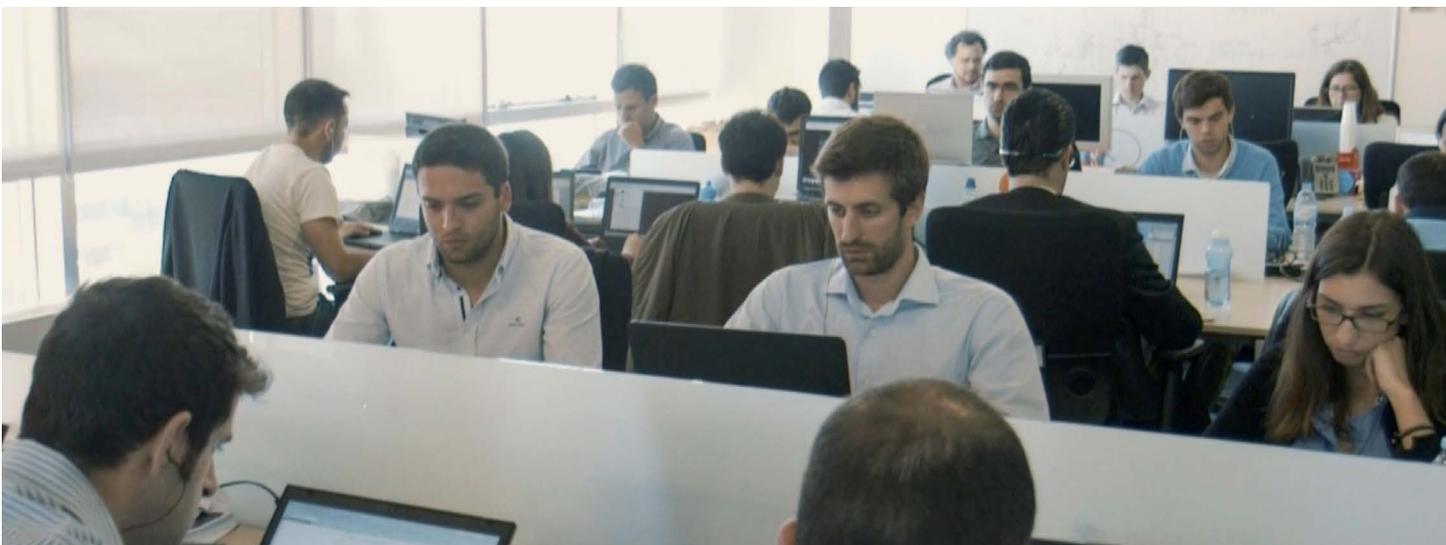
The EU bank seeks to add value beyond providing favourable loan conditions, by combining funds, attracting additional finance and providing crucial advice in project preparation and follow-up to make projects a success. Past experience has demonstrated that many research and innovation projects face difficulties in securing access to finance although their fundamentals are good. InnovFin Advisory assists such projects in the preparation of viable business plans, advising them on the appropriate governance, legal and financial structure, in order to improve their access to finance.

The service also provides advice on how to improve the investment conditions for access to risk finance in key innovative sectors. Under these assignments, InnovFin Advisory assesses if the existing financing tools are fit for purpose or need to be further complemented with new financial products. This was the case, for example, for the Infectious Diseases Finance Facility.

Lifting the barriers to wind power

Thanks to the EIF's close cooperation with financial intermediaries across Europe, and with the European Commission under the Risk Sharing Instrument, thousands of SMEs across Europe are able to start up and expand their businesses.

Lifting a piece of machinery from one location to another can be a challenge particularly when it weighs several tons. Imagine changing major wind turbine components weighing more than 20 tons on a wind turbine 100 m above the ground. This is Liftra's daily challenge. Founded in Denmark in 2003, Liftra ApS designs and manufactures tools and technology for heavy equipment handling and machinery servicing in the wind turbine industry. The company employs 35 engineers at its Danish headquarters in Aalborg. In 2014, Liftra needed to partially finance a self-hoisting crane to operate primarily in its service business. Under the Risk Sharing Instrument initiative, it received an EU-guaranteed EUR 1m loan from Nordea Bank, which helped to finance its first self-hoisting cranes to kick start its now rapidly growing service business.





The Infectious Diseases Finance Facility (IDFF)

Following several discussions with the European Commission (EC), pharma companies and industry players, InnovFin Advisory developed in 2014 a business case covering the latest trends in innovative financing instruments for Global Health R&D and outlined the need for a new, higher risk-taking, Infectious Diseases Funding Facility.

Following a product development phase, the IDFF was launched in 2015 in the form of a risk-sharing facility between the EC and the EIB, allowing the Bank to finance, via a broad range of financing instruments, vaccines and drugs which have passed the pre-clinical validation stage.



EUR 14m for Novabase solutions RDI

In 2014, the EIB granted Novabase a EUR 14m loan for financing its solutions RDI investments. This is the first EIB transaction in Portugal supported by "InnovFin – EU Finance for Innovators", with the financial backing of the European Union under Horizon 2020 Financial Instruments. The loan will finance the development of innovative software applications and products across different sectors. Examples include the development of data management, Software as a Service (SaaS), integrated management, and various collaborative solutions for the company's key segments including telecommunications, financial sector, utilities, transportation, healthcare and the public sector.

The EIB loan will support the company's strategy to remain in the forefront of solutions and software application innovation in Europe. Over its 25-year history, Novabase has become the Portuguese leader in IT. It has been listed on the Euronext Lisbon stock exchange since 2000. Its turnover in 2013 was EUR 216.8m, 34% from outside of Portugal, with business in more than 40 countries and 9 different time zones.



JASPERS

JASPERS (Joint Assistance to Support Projects in European Regions) aims at improving the quality of investments supported by EU funds. It is a partnership between the EIB, the EC and the European Bank for Reconstruction and Development. JASPERS' assistance is available for the development of all categories of projects backed by European Structural and Investment Funds (ESIF).

Projects supported by JASPERS' Smart Development sector are aimed at:

- enhancing investment in skills and innovation promoting education, research, development and innovation (RDI) activities;
- enhancing access, use and quality of information and communication technologies;
- urban development and reclamation/re-development of marginal areas;
- improving health care activities;
- promoting smart specialisation and smart cities, with a view to sustainable development;
- developing and implementing best-practice tools, methodologies and case studies in the above domains.

Typical projects in the innovation sector

- Construction and rehabilitation of education and research infrastructure using new and emerging technologies.
- Development of science and technology parks as enablers of open innovation.
- Construction of pan-European research infrastructure and national research centres.
- Research of new materials on the macro-scale, micro-scale and nano-scale.
- Extension of broadband coverage in urban and rural areas and broadband network access schemes.
- Development of public e-Services projects (e-Health, e-Government, e-Procurement, etc.).

EC1 Łódź – City of Culture

The first stage of one of the most monumental architectural, industrial, scientific and cultural structures in Poland is now complete in Łódź, the country's third-largest city. Baptised EC1 in memory of the former power plant that stood there, the building and the east wing of this impressive space are now open for business. Originally constructed in 1907, the plant supplied power to the city up until 2001, after which it was allowed to fall into disrepair. EC1 East is the first building to be opened to the public and will serve as a cultural space hosting workshops, art exhibitions and various other cultural events. In this part of the factory there is also a planetarium opened in January 2016 (already visited by over 100 000 people) projecting presentations on space and modern science in 8k resolution. Also nearing completion in EC1 East is the National Centre of Film Art. The new building, which was built on top of the former boiler room, will host a state-of-the-art film centre and film education workshops.

The adjacent EC1 West will soon contain an interactive science and technology centre, which will primarily house a permanent exhibition consisting of interactive devices and displays that will enable the public to take part in activities, experience, observe and study the phenomena of various physical and chemical reactions and examine many biological structures up close. The Centre will also have selected exhibits covering other disciplines such as astronomy and nanostructures. In the Centre there is also a 3D Full-dome Cinema complex projecting films in 4k resolution. The Joint Assistance to Support Projects in European Regions (JASPERS) took part in the environmental impact assessment of the project and more importantly in the institutional setup of the project and state aid.





The Investment Plan for Europe reaches the real economy

The mymuesli shop on Heidelberg's quaint Hauptstrasse stands on the edge of the city's historic old town and just across the Neckar River from Germany's oldest university. But it is at the forefront of the future of digital printing and industrial innovation.

In the back of the airy, bright shop, beyond the pink and yellow canisters of organic oats and berries, there is a black glass machine taller than a man and as wide as a drinks vending machine. Choose a tube of muesli as a gift and a pink-shirted mymuesli worker slips it inside the black machine. On a touchscreen you enter a personalised message and upload a photo, e.g. a picture of your children. The machine rolls the tube under a violet light that's actually an innovative piece of ink-jet technology, and seconds later the mymuesli sales person hands over your customised muesli can with the picture and message printed directly onto the container.

The shift from offset to digital is why the company came to the EIB for a loan to help fund its research and development. The EU bank signed a deal with Heidelberger to make a EUR 100m loan backed by an Investment Plan for Europe guarantee. The Plan aims to trigger EUR 315bn in investment by mid-2018.

"To stabilise the company, they need to work with the changing needs of their customers," says Franz Derler, the EIB loan officer who worked on the deal. "That's why the R&D investment is important."





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Supporting the European steel industry

The stainless steel producer Aperam, based in Luxembourg, has obtained a loan of EUR 50m from the EIB. The agreement will allow the Luxembourg Group to fund a research and development programme over the 2016-2019 period as well as upgrade two plants located in cohesion regions (Isbergues – Nord-Pas-de-Calais and Châtelet-Hainaut). This project was funded under the Investment Plan for Europe, of which France is one of the main beneficiary countries, with 35 operations launched to date by the EIB Group for a total amount of EUR 1.7bn, which should generate EUR 15bn of additional investment.

Aperam, ArcelorMittal's Luxembourg-based spin-off, is a global player in the stainless steel sector, electrical steel and special steel. Its industrial network is concentrated in six main plants located in Brazil, Belgium and France.

