



The EIB **in the circular economy**

Promoting a circular economy is high on the EU policy agenda because of its potential to reduce our impact on the climate and the environment, foster sustainable economic growth, boost competitiveness and generate new jobs. The EIB is a major partner for circular economy investments in the EU, and has provided EUR 2.1bn in co-financing for circular projects over the last five years. The EIB is ready to continue supporting the EU's transition towards a circular economy.



Circular economy for a more resource-efficient and competitive EU

Global population growth and improving living standards have increased consumption beyond the means of the Earth's finite resources. This is prompting a shift from the current linear take-make-use-dispose society towards a more circular economy, where products and components are maintained at their highest level of value and utility, and resources are used in the most effective and economical way, while waste generation is minimised.

The development of a more circular economy in the EU would reduce dependency on imported raw materials and could create up to an estimated 2 million new jobs by 2030, while resource efficiency improvements would reduce material input needs. Moving to a more circular economy supports economic growth and competitiveness, and presents an opportunity for economic and industrial renewal, with the associated investment needs.

A circular economy can be achieved by re-thinking and re-designing products, business processes and service models to ensure more sustainable natural resource and material management based on the 3 Rs – reduce, reuse and recycle – and by encouraging more sustainable consumption patterns.

Circular economy lending 2013-2017

Industry and services sector	706	33%
Water management sector	554	26%
Agriculture and bio-economy sector	366	17%
Waste management sector	331	16%
Mobility	95	5%
Urban development sector	50	2%
Energy sector	14	1%
TOTAL CE lending	2 116	100%

(in EUR million)

The EIB promotes the circular economy

Circular economy projects reduce resource use and are eligible for EIB financing for several reasons. First, on account of their environmental and climate benefits. Second, projects that include innovative features for products, production processes or business models are eligible by virtue of their contribution to innovation, which is another EIB priority. Third, circular projects can also be eligible for EIB financing if they are implemented by small and medium-sized companies (SMEs).

As shown below, the EIB has provided about EUR 2.1bn in co-financing for circular economy projects over the last five years, but the lending needs and potential of the circular economy transition are clearly much larger.

Waste management projects closing material loops

With increasing waste generation in many EU Member States, and recycling levels that vary from less than 10% in some countries to over 60% in others, there is a clear need for investment in recycling equipment and facilities for materials and bio-waste. The focus should be on better source separation and sorting to improve marketability. The resulting reduced material and energy consumption will form a central part of the further development of a circular economy in the EU for the foreseeable future.

While in the past the EIB has mainly focused on municipal waste management projects, there is potential to expand lending to projects targeting the recycling and recovery of commercial and industrial waste streams. The associated market risk is different than for municipal waste, but can be mitigated under the European Fund for Strategic Investments (EFSI) and other risk-taking instruments.

Water management for efficiency and security

Water is a valuable but limited and fragile resource. EIB water sector projects contribute to a circular economy by supporting the recovery of energy from wastewater streams, treated wastewater reuse for industrial, agricultural and urban water supply purposes, and recycling of nutrients from sewage sludge into high quality fertiliser.

Having made water security a priority, the EIB is also supporting the identification, preparation and financing of projects aimed at increasing “water stewardship” in industry,



Green Group Romania PET and WEEE recycling

In a project for Green Group in Romania, the EIB financed a new PET recycling facility and the upgrading and expansion of an existing Waste Electrical and Electronic Equipment recycling facility. The firm turns used PET bottles into Polyester Staple Fibre, which can be used for fabrics, fillings, etc.

The project also provided new waste collection infrastructure that contributes to the supply of PET bottles and other material for the new and upgraded recycling facilities.

The project supports the transition to a circular economy and the attainment of national recycling targets in Romania.

including, but not limited to, efficiency measures to avoid significant waste of the energy and chemicals involved in the treatment and distribution processes. Promising

technological innovations in the water sector, such as resource recovery from wastewater, are also eligible for EIB financing.



Producing energy from sewage sludge in Vienna

In 2015, the EIB signed a EUR 150m loan to finance the Energy Optimisation Sludge Treatment (EOS) project. The objective of this project is to ensure the energy self-sufficiency of Vienna's wastewater treatment plant by using sewage sludge as an energy resource for in-house energy needs.

With this project, 20 million m³ of methane-rich biogas is expected to be extracted annually from sewage sludge and converted into electricity and heat. This will enable Vienna's wastewater treatment plant to cover 100% of its own electricity needs by 2020 while simultaneously reducing its energy costs.



Agribusiness, at the heart of the circular economy

Agriculture and forestry value chains, including the agri-food and pulp and paper industries, are being encouraged to move forward from the linear to the circular economy. By-products are recycled to capture their residual value and reduce virgin material input.

The EIB has already financed projects involving the creation, modernisation and upgrading of manufacturing

facilities and RDI activities that improve by-product recycling. It has contributed to financing water recycling projects in the agri-food and forestry industries (such as sugar mills), and bio-energy using food, crop production or sawmill residues or manure as a raw material. The EIB has also financed bio-ingredients, bio-plastics and bio-material projects that have contributed to making the economy greener.



Mauritius sugar project: converting ashes to Portland cement additives

The promoter, a cane sugar producer, uses sugar cane residues (on-season) and coal (off-season) for its existing CHP (combined heat and power) unit. The CHP is operating on a permanent basis to provide electricity to the Mauritius grid.

In 2015, the EIB signed a EUR 8m loan to finance a new CBO (carbon burn out) facility that converts furnace fly ash and bottom ashes into additives for Portland cement. This project – exemplifying the circular economy concept – has reduced the disposal of these residues in landfill, lowering the risk of ground/surface water contamination.

Additional ashes are provided by three power plants located nearby, allowing the CBO to process 70 000 tonnes of ashes per year, fully satisfying the needs of local cement producers.

Rethinking manufacturing – focus on innovation and collaboration

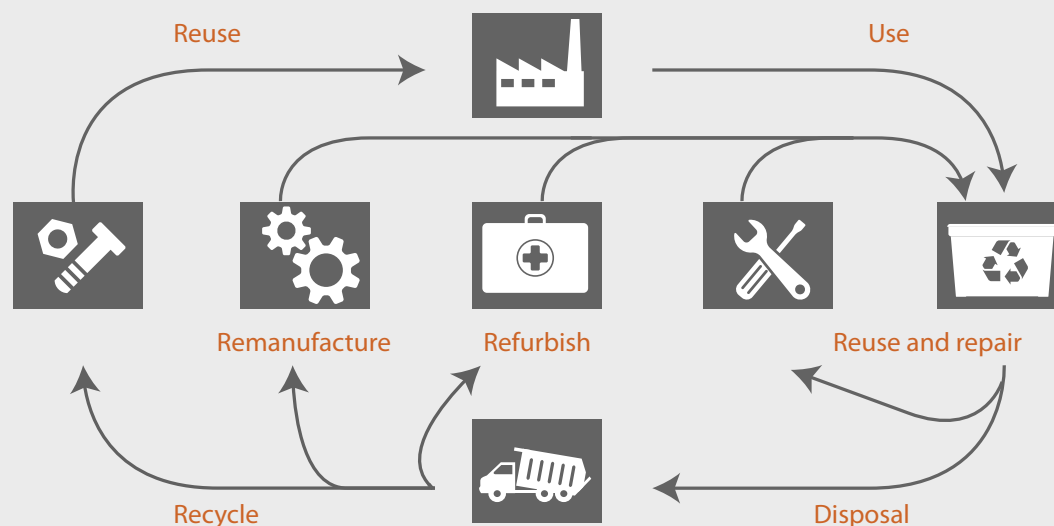
Industry cannot continue to grow hand in hand with the demand for finite resources. This has prompted an increasing number of companies to start innovating and collaborating on new ways to reuse materials. The EIB is actively supporting these innovative projects by financing product innovations and technology development to facilitate easier repair, upgrade, remanufacture and disassembly.

However, since a circular economy involves more than just using resources more efficiently, another trend is the shift

to service-oriented business models. With these models, instead of selling a product to clients, companies offer its function as a service, including monitoring, maintenance, repair and replacement as part of their value proposal. In this field, the EIB not only supports circular projects through direct financing but also sets up dedicated credit lines with financial institutions – so-called intermediated lending – that are adapting their product portfolio to specifically target this new circular way of doing business (see the DLL project description).

Supporting finance solutions for circular business models

The DLL (De Lage Landen) Circularity project provides loans to small-scale businesses engaged in Product-Service Systems (PSS). In a PSS business model, end-users only use the service provided by the assets rather than buying or owning them, and manufacturers manage the full technical life cycle of the asset from production, through reuse, repair and refurbishment until final disposal. To that end, DLL provides tailored financial solutions like second and third-life finance, supports its partners in the transition from selling an asset to selling a service, and stimulates manufacturers to redesign their products to enable easy repair, remanufacturing and/or refurbishment, leading to more sustainable, circular-focused business models.



EIB circular economy lending products, instruments and services

Lending – blending – advising

Investment needs vary widely depending on a project's scale and its position in the value chain. We tailor our financing to the specific needs of the borrower and the project. We offer a range of risk-bearing instruments, project loans and financial support for funds, as well as technical advisory services.

Our traditional financing products are medium and long-term loans with fixed or variable interest rates. We finance large projects with direct loans, and smaller ones indirectly through credit lines to local banks and other intermediaries, particularly targeting SMEs and mid-caps. The EIB also offers the opportunity to combine its financing with EU grants – this is called blending.

The EIB provides support in assessing whether a circular economy project is eligible for EIB financing, and what lending approach and instrument is most appropriate.

Circular economy projects with medium to high-risk profiles may be accommodated under the European Fund for Strategic Investments (EFSI), InnovFin and other special financial instruments with higher risk-taking potential. EFSI is an initiative launched jointly by the EIB Group (the European Investment Bank and the European Investment Fund) and the European Commission to help bridge the current investment gap in the EU by mobilising private financing for strategic investments.

EFSI consists of a EUR 26bn guarantee from the EU budget, complemented by an allocation of EUR 7.5bn of the EIB's own capital. Its dedicated governance ensures that it remains focused on its specific objectives, namely to increase the volume of higher risk projects supported by EIB Group

financing operations and to address the market failure in risk-taking that is hindering investment in Europe.

With EFSI support, the EIB Group provides funding for economically viable projects where it adds value, including projects with a higher risk profile than in ordinary EIB activities. It focuses on sectors of key importance where it has proven expertise and the capacity to deliver a positive impact on the European economy.

EIB support – more than financing

EIB financing is supported by specialised in-house staff bringing the know-how required to support the development and structuring of circular economy projects. In providing such advisory services, the EIB relies on its expertise in financial structuring, resource efficiency and the water and wastewater, energy and solid waste management, natural resource, agri-industry, industry and services sectors, and SME support.

The European Investment Advisory Hub, an integral part of the Investment Plan for Europe, is a single point of entry for advisory services for investment projects in the EU. Services available via the Hub include project development support throughout all stages of the project cycle, as well

as upstream or policy advice on market studies, sector strategies, and project screening. The circular economy is one of the priority areas of the Hub. Financial advice is also provided to assist managing authorities in establishing financial instruments and enhance companies' ability to access adequate sources of financing. More horizontal assistance can be obtained via process and methodological guidance and training on a number of issues related to investment projects, access to finance and the use of EU funds. Public and private entities can contact the Hub via the online contact form under www.eib.org/eiah.

InnovFin Advisory (IFA) offers specific financial advice on, for example, business models, governance, funding sources for innovative projects and companies to improve access to funding. IFA also analyses investment conditions and access to finance challenges and opportunities, supports the development of thematic investment platforms (funds), and recommends new financing mechanisms and advisory services where needed. Improving access to finance for circular economy projects is one of the key areas analysed under advisory mandates from the European Commission and the Government of Luxembourg. Amongst other outcomes, this work led the European Commission and the EIB to join forces in setting up the Circular Economy Finance Support Platform (www.eib.org/innovfin).

EUROPEAN INVESTMENT FUND		European Investment Bank <i>The EIB bank</i>			
Early-Stage Enterprises	SMEs	Corporate	Science	Thematic Finance	Advisory
InnovFin Technology Transfer	InnovFin SME Guarantee	InnovFin Emerging Innovators	InnovFin Science	InnovFin Energy Demo Projects	InnovFin Advisory
InnovFin Business Angels		InnovFin MidCap Guarantee		InnovFin Infectious Diseases	
InnovFin Venture Capital		InnovFin Corporate Research Equity		InnovFin Thematic Investment Platforms	
InnovFin Fund-of-Funds					
Early-Stage Enterprises, SMEs and Small Midcaps < 500 Employees	SMEs and Small Midcaps < 500 Employees	SMEs, Midcaps, Large Caps, SPVs	Research Institutes, Universities, Research Organisations	SMEs, Midcaps, possibly Large Caps, SPVs	Public and Private Sector Promoters
Intermediated Equity Financing	Intermediated Debt Financing	Direct and/or Intermediated Financing (including equity type)	Direct Financing (including equity type)	Direct and/or Intermediated Financing (including equity type)	Financial Advisory

Direct products
 Indirect products
 Direct or Indirect products

Note: InnovFin Large Projects succeeded by InnovFin Emerging Innovators
 InnovFin MidCap Growth Finance has been deployed under the European Fund for Strategic Investments (EFSI) since November 2016



The EIB at a glance



**The EIB
Circular Economy Guide**
Supporting the circular transition






For more information about the circular economy and the EIB's work on this topic, please consult the EIB Circular Economy Guide, available on

<http://www.eib.org/en/infocentre/publications/all/the-eib-in-the-circular-economy-guide.htm>

As the EU bank, we provide finance and expertise for sound and sustainable investment projects in Europe and beyond. We are owned by the EU Member States and the projects we support contribute to furthering EU policy objectives. We are the largest multilateral lender and borrower in the world and our more than 3 000 staff can build on more than 60 years of experience in financing projects. We are headquartered in Luxembourg and have a network of some 40 local offices.



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