

“ **I’d put my money on the sun and solar energy. What a source of power! I hope we don’t have to wait until oil and coal run out before we tackle that.** ”

Thomas A. Edison

CONTEXT AND CHALLENGES

Climate change was not yet an issue when Thomas A. Edison made this statement in 1931. Still, who would have had more reason to marvel at the never-ending sources of renewable energy than the man who brought the electric light to people’s homes?

According to the International Energy Agency, energy production and use account for two-thirds of the world’s greenhouse gas emissions. If we are to limit global warming to 1.5 °C as deemed necessary by the Intergovernmental Panel on Climate Change, the energy sector has a key role to play. Currently, about 80% of the energy we consume globally relies on fossil fuels. To reduce

the likelihood of extreme weather events for us and for generations to come we must eliminate close to all greenhouse gas emissions by the middle of this century. This implies a radical transformation of our energy systems on several fronts.

First, the demand for energy services – heating, power, lighting, mobility – will continue to grow in many parts of the world. Electricity is required to generate most of these services and we must think of ways of providing them more efficiently. An immediate challenge in the developed world is to reduce energy consumption in buildings and industry. In the European Union, energy efficiency investments in the sector represent approximately three-quarters of the total energy investment required in the period 2021-30, equal to €281 billion per year.

A second front is the shift to low-carbon power and heat production. The costs of wind and solar energy have decreased significantly in recent times, making them competitive with conventional power sources even in the absence of a strong carbon price signal. However, wind and solar energy need large-scale storage facilities, as wind and solar farms are intermittent – meaning that they only produce energy when the wind blows or the sun shines.



365 wind turbines were built in North Kenya’s Lake Turkana region.

THE EUROPEAN INVESTMENT BANK'S ENERGY LENDING POLICY

In line with EU energy policy, which aims to ensure that all Europeans have access to secure, affordable and sustainable energy, the European Investment Bank (EIB) financed energy infrastructure with some €62 billion in the period 2015-19. This included over €53 billion for renewable energy, energy efficiency and electricity grid projects in Europe and around the world.

In November 2019, the EIB adopted a new, ambitious energy lending policy. The Bank announced that it would phase out the financing of traditional fossil fuel energy projects, including natural gas, by the end of 2021. Specifically, the new energy lending policy calls for:

Unlocking energy efficiency investments

Investment in energy efficiency, especially in residential buildings, must double in volume during the coming decade. Despite numerous policy measures, a persistent investment gap remains. Given the pressing need to accelerate market uptake for energy efficiency measures, the EIB will consider financing up to 75% of a project's costs. In cooperation with the European Commission, we will set up a European Initiative for Building Renovation (EIB-R) to support new ways of financing building rehabilitation.

Decarbonising energy supply

The European Union must more than double its renewable energy capacity to decarbonise its energy supply and meet its 2030 renewable targets. The EIB, working with the European Commission and other partners, will support the market integration of renewable electricity projects and promote increased regional cooperation. We will also back other types of renewables, including renewable heating, the production and integration of low-carbon gases such as hydrogen, and low-carbon fuels.

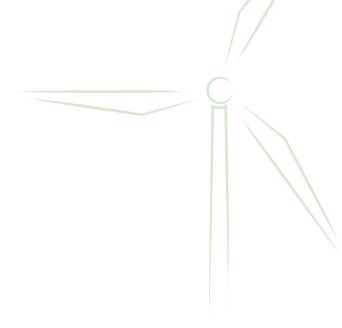
Supporting innovative low-carbon technologies

Energy transformation is only possible with a wide portfolio of energy technologies and services – many of which are still at the development stage and come at relatively high costs. The EIB supports the early deployment of these technologies to increase industrial learning and promote future cost reduction. The commercialisation of innovative technologies requires significant investment, which is risky and therefore often unavailable from commercial sources. Our work is aligned with the EU **Strategic Energy Technology Plan** and the new **Innovation Fund** under the **Emissions Trading Directive**. We will also support initial commercial production lines related to breakthrough technologies and new types of energy infrastructure to stimulate their market uptake.

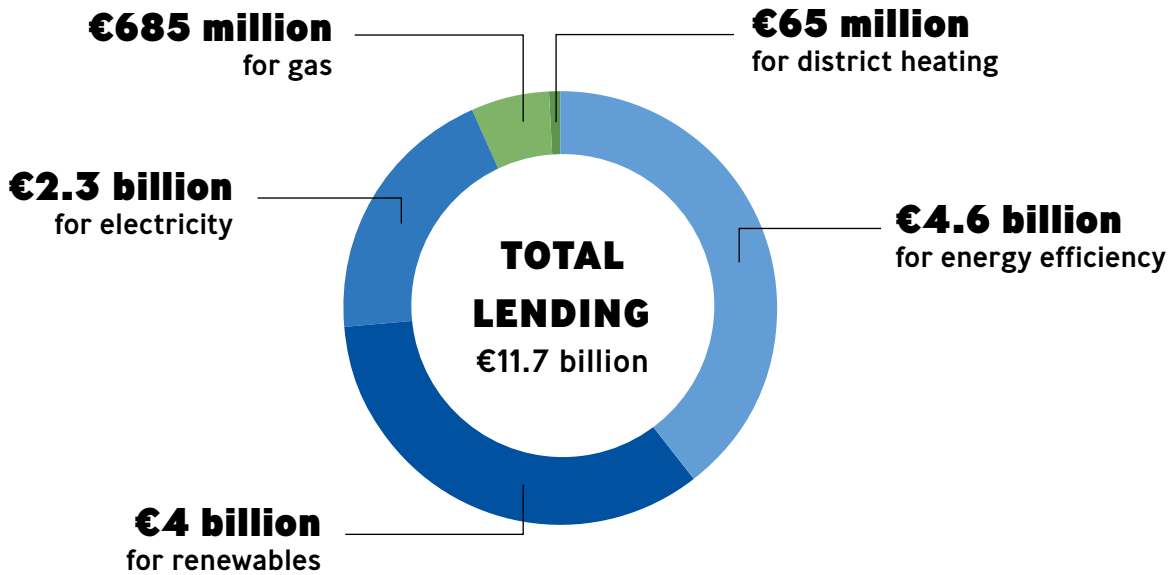
Investing in a more secure enabling infrastructure

For the electricity market, the energy policy framework adopted in 2018 confirms an interconnection target of 15% of installed capacity for 2030. Besides interconnections, investment in national electricity networks is likely to remain high for the next decade, both at transmission and distribution level. The EIB will continue to support the development of electricity networks, including the interconnection target agreed for 2030 and **European Projects of Common Interest** (PCIs). The Bank will look to prioritise investments that increase network flexibility.

FACTS AND FIGURES



Lending: In 2019, the Bank provided €11.7 billion for energy-related projects:



13 177 MW
of energy

98 %
of it renewable

THE EUROPEAN INVESTMENT BANK: a leader in renewable energy



€26 billion invested in **renewable energy projects** between 2014 and 2019

Clean energy for **50 million households** around the world



Pushing **emerging technologies:** cornerstone investor in **offshore wind**



wind



solar



hydro



geothermal



biomass



This could almost cover the needs of all of Bulgaria

PROJECT HIGHLIGHTS

Breakthrough Energy Ventures Europe

Innovative clean energy technologies will find it easier to secure financing in Europe thanks to a new fund set up by Breakthrough Energy Ventures and the EIB. The €100 million Breakthrough Energy Europe Fund represents the first large-scale clean energy investment programme that focuses on drastically cutting emissions. The fund aims to invest in European companies that develop cutting-edge technologies to help stop climate change. Breakthrough Energy Ventures is chaired by Bill Gates and backed by other heavyweight investors including Amazon's Jeff Bezos and former New York City Mayor Michael Bloomberg.

[More information online](#)

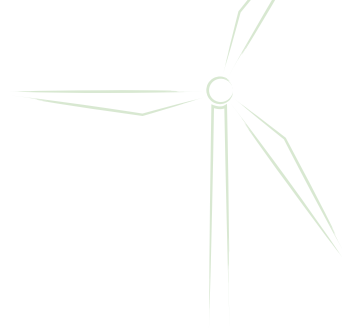
InnovFin Energy Demonstration Project programme

An EIB loan of €60 million supports breakthrough floating wind energy technology in Portugal. Located 20 km off the Viana do Castelo coast, the project will speed up the commercial rollout of a novel technology that enables abundant wind resources to be harvested in deep waters where mounting foundations on the sea floor is not possible. The loan was granted through the InnovFin Energy Demonstration Projects programme, which allows the EIB to finance innovative first-of-a-kind demonstration projects at a pre-commercial stage.

[More information online](#)



Europe's first homegrown gigafactory for lithium-ion battery cells, Northvolt Ett, in Sweden.



Minimum carbon footprint, maximum power

The EIB has signed a \$350 million loan agreement to support the financing of Europe's first homegrown gigafactory for lithium-ion battery cells, Northvolt Ett, in Sweden. The new gigafactory is currently under construction in Skellefteå in northern Sweden – a region home to a prominent raw material and mining cluster with a long history of process manufacturing and recycling. Given the region's clean power base, building the factory in northern Sweden will enable Northvolt to utilise 100% renewable energy in its production processes.

[More information online](#)

The European Local Energy Assistance (ELENA) facility is run by the EIB on behalf of the European Commission. It helps the public and private sector carry out energy efficiency, renewable energy and sustainable transport investment projects. The ELENA facility promotes innovative solutions in energy efficiency and accelerates investments by building up experience, facilitating financing and overcoming barriers.

[More information online](#)

Lake Turkana wind farm is the biggest wind farm in Africa. It offsets 700 000 tonnes of carbon dioxide emissions per year and brings clean and affordable renewable energy to Kenya. The €620 million project was the single largest private investment in Kenya ever, confirming the country's status as a safe and reliable investment destination. The EIB-managed EU-Africa Infrastructure Trust Fund provided a €25 million equity contribution to the project, which was crucial in closing a financing gap and getting the project over the line. The EIB also provided a loan of €200 million.

[More information online](#)

Viva the Mexican sun!

The EIB is financing the largest solar project ever built in the Americas in the Mexican states of Guanajuato and Coahuila. €74 million was provided to help finance the construction of three new solar plants, with average annual energy production of 1.1 GW. The project was selected in the first long-term renewable energy auction in Mexico and is contributing to the reduction of CO2 emissions, while lowering wholesale electricity prices in the country.

[More information online](#)

Powering the roof of the world

The EIB partnered with the Norwegian Agency for Development Cooperation, the Asian Development Bank and the government of Nepal to build the infrastructure required for the transmission of renewable energy in the west of the country. With seven new high-voltage transmission lines and substations, the project will improve power distribution and boost efficiency, helping to alleviate a chronic power shortage. These investments will reduce poverty by allowing the Nepalese to benefit from a cheaper and cleaner source of energy.

[More information online](#)

RESOURCES

WEBSITE

- [EIB in the Energy sector](#)
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PUBLICATIONS

- [The EIB climate survey 2019-2020](#)
 - [Climate Solutions: Why climate is the world's most pressing challenge – and what you can do about it](#)
 - [>€1 TRILLION FOR <1.5°C: Climate and environmental ambitions of the European Investment Bank Group](#)
 - [EIB Energy Lending Policy: Supporting the energy transformation](#)
 - [7 reasons why the energy transition works for Europe](#)
 - [ELENA – supporting investments in energy efficiency and sustainable transport](#)
 - [A bright future](#)
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VIDEOS

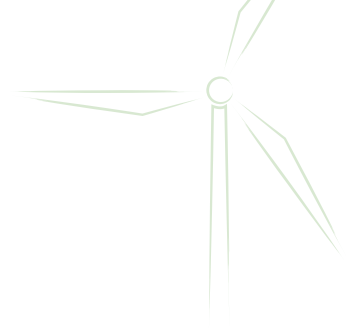
- [A world of clean energy](#)
 - [EIB and Lake Turkana Wind Power](#)
 - [Innovating for the planet: Breakthrough Energy Ventures-Europe fund](#)
 - [Energising Gambia](#)
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NEWS

- [Spain: The EIB finances one of the largest solar plants](#)
 - [Greece: The EIB supports the reinforcement and the modernization of the Greek Distribution Network](#)
 - [Poland: PGE Capital Group to carry out wind farm projects with support from the EIB](#)
 - [Romania: EIB expands its support for improvements to energy efficiency of residential buildings in Bucharest](#)
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BLOGS

- [Climate Solutions: The fast way to save energy](#)
- [7 reasons why the energy transition works for Europe](#)
- [Clean energy from wastewater](#)
- [An easier tool for energy efficiency](#)
- [Access to energy is development key](#)
- [Our clean energy projects](#)



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