

**“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

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?

Humans emit almost ten times more CO₂ than they did 100 years ago. In the past 25 years alone, emissions from the energy sector have increased by more than 50%. To limit global warming to 1.5 °C, as recommended by the Intergovernmental Panel on Climate Change, the energy sector has a key role to play. Currently, about 84% 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 almost all greenhouse gas emissions by the middle of this century. This requires a radical transformation of our energy systems on several fronts.

First, the demand for energy services – heating, power, lighting and 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 reducing 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 between 2021 and 2030, equal to €281 billion per year.

Second, we must shift to low-carbon power and heat production. The costs of wind and solar energy have decreased significantly in recent years, 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. This is because wind and solar farms are intermittent, meaning that they only produce energy when the wind blows or the sun shines.



Lake Turkana wind farm.

THE EIB 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 €60 billion between 2016 and 2020. 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 will phase out the financing of traditional fossil fuel energy projects, including natural gas, by the end of 2021. Specifically, the 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 to support new ways of financing building rehabilitation.

Decarbonising energy supply

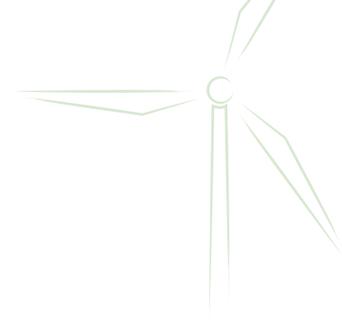
The European Union must more than double its renewable energy capacity to decarbonise its energy supply and meet its 2030 renewable targets. The EIB, working with the European Commission and other partners, will support the market integration of renewable electricity projects and promote increased regional 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. The Bank will look to prioritise investments that increase network flexibility.



FACTS AND FIGURES

LENDING

In 2020 the Bank provided
€11.6 billion
for energy-related projects

€5.8bn

for energy
efficiency



€4bn

for
renewables

€963m

for
electricity



€455m

for
gas

€351m

for thermal
power



A LEADER IN RENEWABLE ENERGY

€21 billion

invested in **renewable energy**
projects between **2015 and 2020**



Clean energy for
57 million households
around the world

24 476 GWh/yr
of electricity produced

77 %
of it renewable

This almost equals the electricity
consumption of Slovakia

PROJECT HIGHLIGHTS

Breakthrough Energy Ventures Europe

Innovative clean energy technologies find it easier to secure financing in Europe thanks to this initiative. The €100 million Breakthrough Energy Europe Fund is 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. Early beneficiaries include a low-cost green hydrogen producer, an eco cement manufacturer and a producer of plant-based chemicals and fuels. Breakthrough Energy Ventures is chaired by Bill Gates and backed by other investors including Amazon's Jeff Bezos and former New York City Mayor Michael Bloomberg.

[More information](#)

InnovFin Energy Demonstration Project programme

The success of the energy transformation will largely depend on efficient energy storage options. A €47 million loan from the EIB is supporting state-of-the-art battery producer Nilar in Sweden. The project is backed by the InnovFin Energy Demonstration Project programme (EDP), a joint EIB-European Commission venture financing instrument designed to support the demonstration of innovative clean energy projects. Homeowners and industrial customers can safely use the Swedish company's batteries to power their buildings or charge electric vehicles as they are non-flammable. In addition, manufacturing these batteries is much less energy-intensive than today's lithium-ion technologies. Nilar's batteries are nickel-based and do not contain scarce materials. They also have the added advantage of being easily and fully recyclable.

[More information](#)

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](#)

Energy efficiency in Jordan

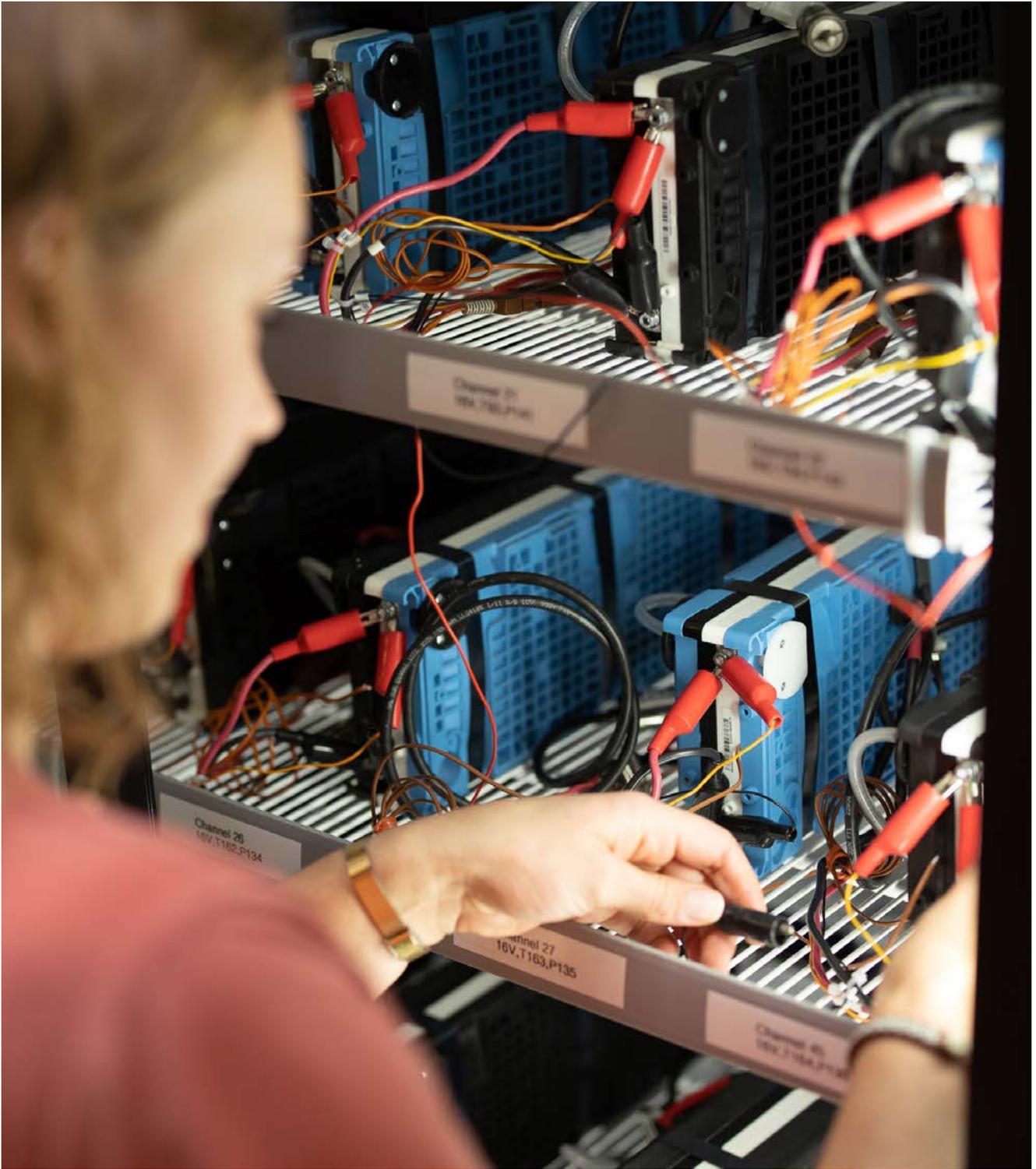
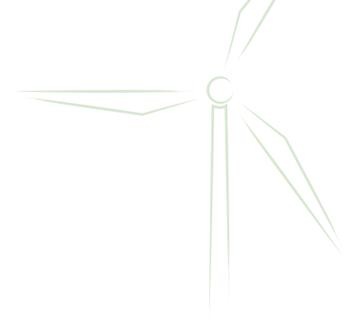
According to the International Energy Agency, energy efficiency is expected to deliver more than 40% of the reduction in energy-related greenhouse gas emissions over the next 20 years. A €45 million loan to municipalities in Jordan will have a substantial impact on the sustainable development of towns and cities in the country. It will boost the implementation of renewable energy and energy efficiency projects such as rooftop photovoltaic systems, street lighting refurbishments, and energy efficiency construction. Reducing energy consumption and costs will enable municipalities to reallocate money to other priority needs for the benefit of the local population.

[More information](#)

The European Local Energy Assistance (ELENA) facility

is run by the EIB on behalf of the European Commission. It helps the public and private sectors 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. At the beginning of 2021, the European Commission provided fresh funding to continue the work of the facility.

[More information](#)



A €47 million loan from the EIB is supporting state-of-the-art battery producer Nilar in Sweden.

RESOURCES

WEB PAGE

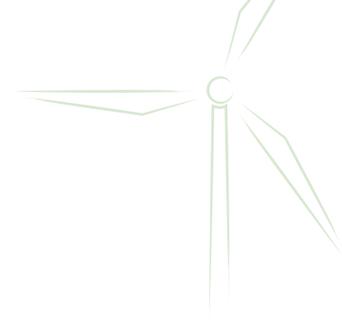
- [EIB in the energy sector](#)
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PUBLICATIONS

- [Going green: Who is investing in energy efficiency, and why it matters](#)
- [The EIB climate survey 2019-2020](#)
- [Climate Action and Environmental Sustainability Overview 2021](#)
- [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](#)
- [The EIB Group Climate Bank Roadmap 2021-2025](#)
- [7 reasons why the energy transition works for Europe](#)
- [ELENA – supporting investments in energy efficiency and sustainable transport](#)
- [A bright future](#)



NTR solar plant in Ireland.



VIDEOS

- **Providing affordable clean energy access to rural communities in Uganda**
- **A brighter life for Kenyan women**
- **Fournir l'accès à l'énergie verte dans les zones rurales du Sénégal**
- **Providing reliable and affordable energy for Uganda**
- **Transforming access to clean energy in Burundi and East Africa**
- **Cold winds for northern lights**
- **Powering the green recovery in Poland**
- **A world of clean energy**
- **EIB and Lake Turkana Wind Power**
- **Innovating for the planet: Breakthrough Energy Ventures-Europe fund**
- **Energising Gambia**

BLOGS

- **When the winds don't blow**
- **A plan for the future of the planet**
- **Car battery tech charges ahead**
- **Climate solutions: The fast way to save energy**
- **7 reasons why the energy transition works for Europe**
- **Clean energy from wastewater**
- **Access to energy is development key**
- **Our clean energy projects**

This overview, with links
to stories, brochures
and videos, is available at:
[www.eib.org/energy-
overview](http://www.eib.org/energy-overview)



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