



European  
Commission

Policy handbook

# Why Europe needs a better interconnected energy infrastructure



DG Energy





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Keeping our homes warm and our industries running means we need a resilient and modern energy network for the future. Climate change and fuel shortages mean we must look towards finding energy-efficient, sustainable solutions in order to adapt the grid to these challenges.

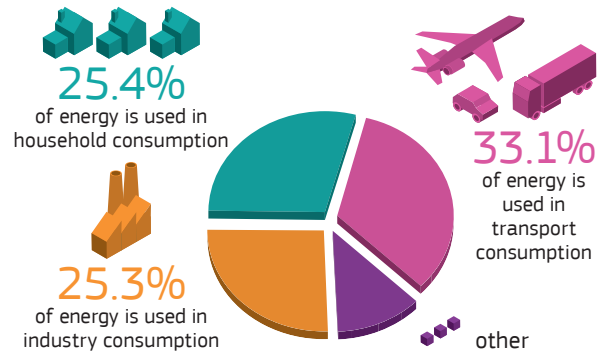
In Europe, we consume nearly 1.1 billion tonnes of energy every year. This is mainly used to heat our homes, in transport, and to produce everything we consume. While tremendous efforts have been made in improving energy efficiency, more are needed. To continue improving the efficiency of our energy networks we have to modernise them further, to be able to provide secure, sustainable and affordable energy for all.

One of the greatest challenges today, and for future generations, is to combat climate change. Curbing global warming and reducing our greenhouse gas emissions will require the decarbonisation of our economy. For this to happen, modern energy networks are needed to allow a greater share of energy to come from renewable sources.

## ENERGY IS AT THE HEART OF OUR DAILY LIFE AND OF OUR ECONOMY

Source: Eurostat data, 2015

1.1 billion tonnes of energy coming from various sources is consumed each year in the EU



# We must use new regional approaches and cooperate beyond borders to capture the benefits of secure, sustainable, and affordable energy

Europe's energy infrastructure still relies on national systems, with too few interconnections between countries. Some countries are highly dependent on energy imports from just a few exporters, often based outside the EU. This makes them vulnerable to energy shortages and blackouts. Moreover, isolated energy networks do not allow renewable energy sources to be integrated efficiently.

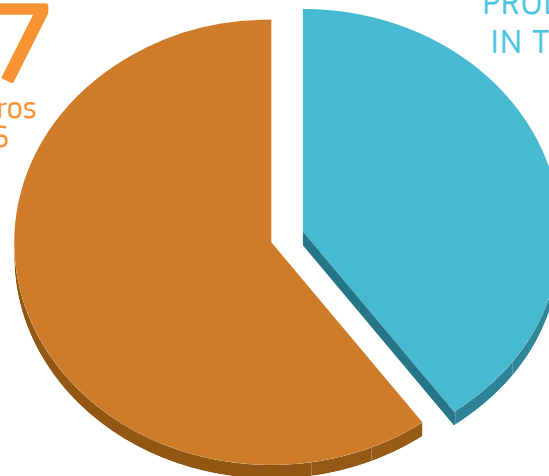
The EU imports more than half of all the energy it consumes, which can cost up to 207 billion euros.

## EU energy consumption

ENERGY IMPORTS

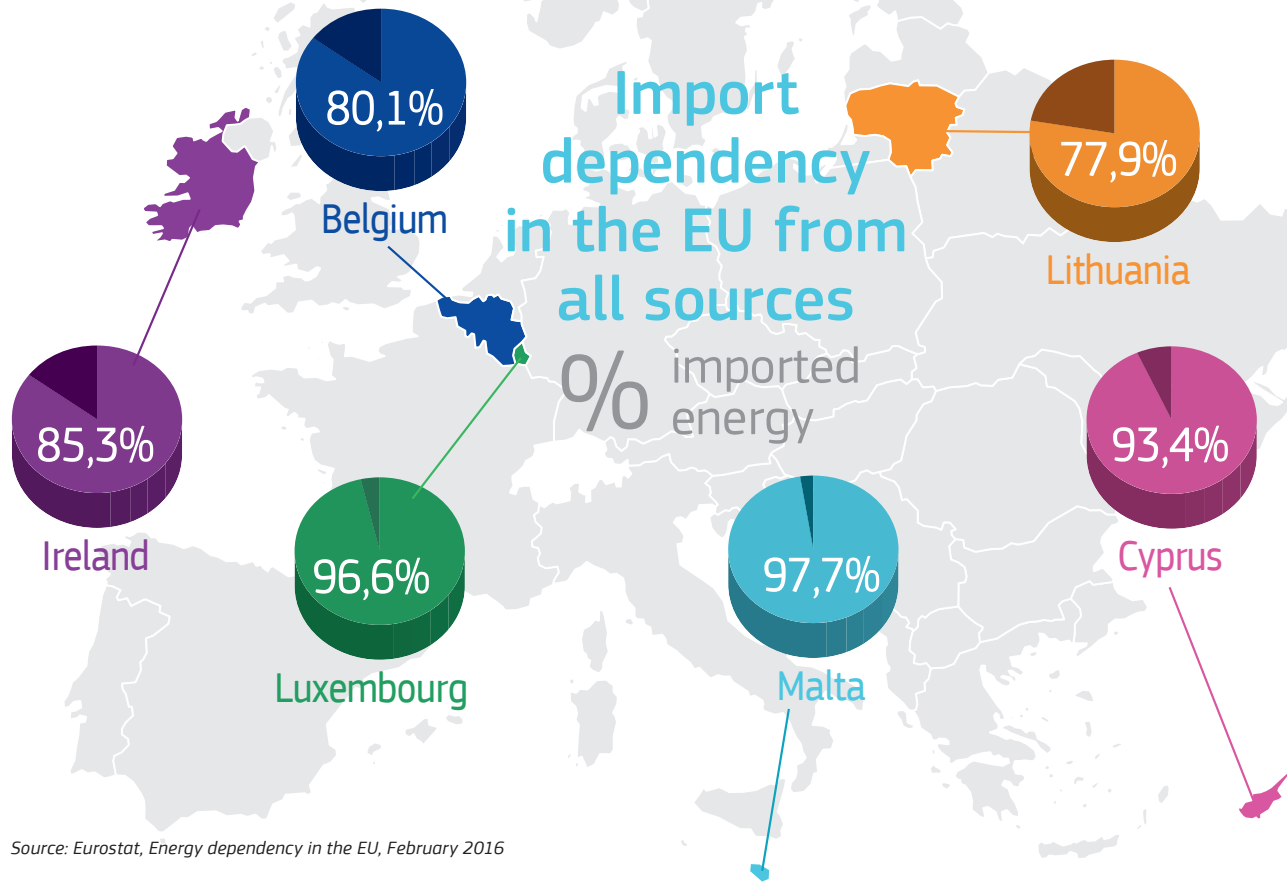
**COST:  
207**  
billion euros  
in 2016

ENERGY  
PRODUCED  
IN THE EU



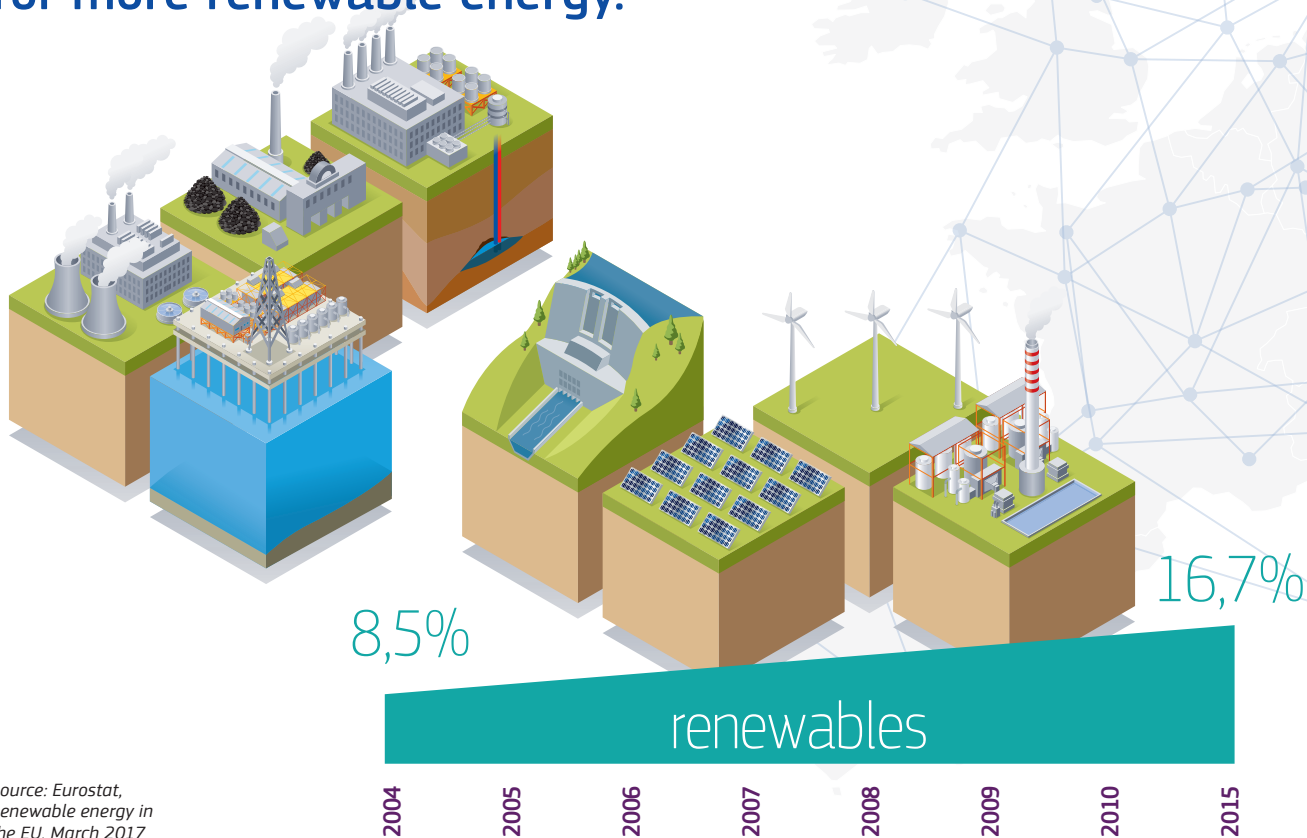
Source: Eurostat database (Comext) and Eurostat estimates

# Import dependency in the EU from all sources



Source: Eurostat, Energy dependency in the EU, February 2016

# Slowly, fossil fuels are leaving room for more renewable energy.



Source: Eurostat,  
Renewable energy in  
the EU, March 2017

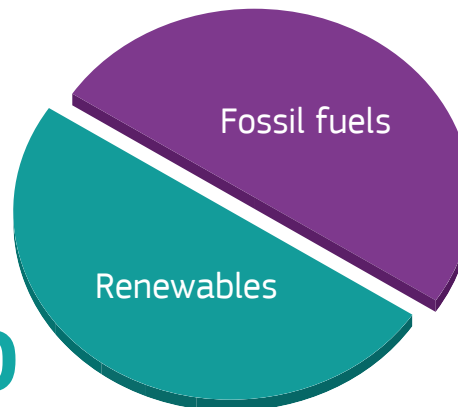


In 2015, fossil fuels continued to represent the main source of energy, but their weight has constantly decreased over the past decades.

Modernising energy grids is necessary to face the energy challenges ahead and achieve the energy transition.



The integration of renewables will also become increasingly important: it is expected that by 2030, EU's electricity generated by renewable energy sources will climb to **50%**



Source: European Commission, Market Design Initiative Impact Assessment, 2016





## We therefore need to quickly adopt newer, more efficient, and cleaner solutions.

Energy cooperation and interconnection across borders will strengthen the system's stability and efficiency. An interconnected network will allow island Member States (e.g. Malta and Cyprus), as well as countries situated at the periphery of the European continent, like the Iberian Peninsula, Ireland, or the Baltic States, to export renewable energy (solar, wind) at peak times, and to import power when renewable energy production is low. In short, connecting our energy networks contributes to the end of "energy isolation" in many countries

and allows renewables from one EU region to be used efficiently in another.

Major interconnection projects also avoid the construction of additional power generation units, which in turn drives down the price of renewable energy for consumers.

Exchanging energy between EU Member States also maximises reliability and reduces dependence towards third countries.







## PCIs enable cross-border cooperation and help to speed up the creation of an interconnected European energy grid.

Projects of common interest (PCIs) are major infrastructure projects - from terrestrial or underwater high-voltage transmission systems and power stations, to gas pipelines and compression systems, and many others - selected every two years by the European Commission. They are an important European tool for accelerating the deployment of energy infrastructure and ensuring the delivery of secure, clean and affordable energy across European borders.

PCIs contribute to the modernisation of the European energy grid, the completion of the internal energy market and the integration of renewable energy. By connecting markets, they also increase competition between energy providers, offering consumers a wider choice and lower prices.

By connecting several energy systems together, PCIs are important to the diversification of energy sources and energy security. They are an essential tool for ending the energy isolation that some countries are facing, such as islands (Malta, Cyprus) and Member States in the periphery (Ireland, the Iberian Peninsula, the Baltic States).

Active participation of citizens is key to make our vision of a modern, interconnected European electrical network a reality. Get more information by visiting our new website:

<https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest>

# Examples of Projects of Common Interests supported by the European Commission:



## *LitPol*

An energy bridge connecting Poland and Lithuania. LitPol enhances electricity trade and increases competition on energy prices for Lithuania and the northern part of Poland. The “bridge” strengthens the continuity of power supply, opening new opportunities in energy trading and diversifying electricity sources.



## *Klaipeda-Kursenai Gas Transmission Pipeline*

Diversifying gas supply sources and routes in the Baltic Region. This project involved the construction of a gas transmission pipeline in Lithuania, which connects the liquefied natural gas infrastructure in Klaipeda to the system in Kursenai. It enhances the capacity of current pipelines, increasing the security of gas supply and competition in Baltic gas markets. It also helps diversify natural gas sources, reduce energy dependence and build access to global gas markets.



## *Malta-Italy Interconnector*

A 120km-long link between the grid on the island and the grid on the continent. This project improves energy security, reduces the use of fossil fuels, and expands the use of renewables in Malta. It is the first connection of Malta to the European UCTE synchronous electricity grid. It is not only an engineering achievement, but a true collaboration between the two main countries involved.



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