



European
Commission

EU Energy System Integration Strategy

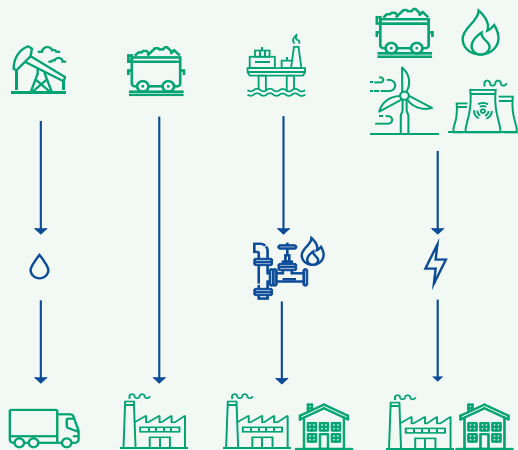
#EUGreenDeal

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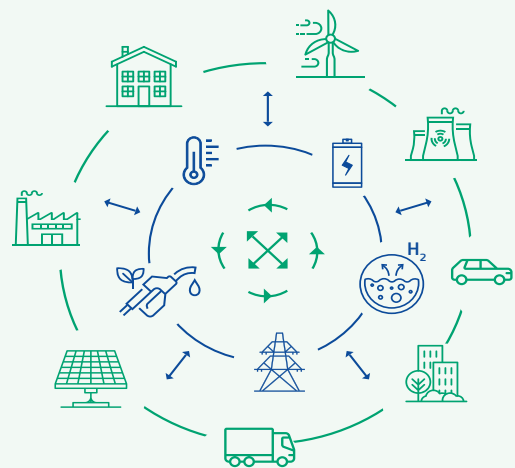


This strategy will profoundly reform the European energy system. We are designing a more **efficient** and **integrated system** that links energy sources and infrastructure to support decarbonisation and build a **climate neutral** EU by 2050. It will help to build **modern infrastructure**, make European industry more **sustainable and competitive**, create **jobs**, and provide **clean energy** for citizens.

The energy system today : linear and wasteful flows of energy, in one direction only



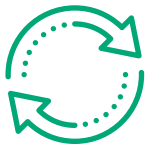
Future EU integrated energy system : energy flows between users and producers, reducing wasted resources and money



An Integrated EU Energy System will have **three main characteristics**:

- A more **efficient and “circular” system**, where waste energy is captured and re-used
- A **cleaner power system**, with more direct electrification of end-use sectors such as industry, heating of buildings and transport.
- A **cleaner fuel system**, for hard-to-electrify sectors like heavy industry or transport

Main points of the proposal



Create a more circular energy system. Too much energy or resources are wasted in our current system. We require a new approach to reduce these losses and direct them to other purposes.

- **Promote energy efficiency**
- Encourage the **reuse of waste heat from industrial sites and data centres**
- Improve synergies between energy infrastructures with the revision of the **Trans-European Network in Energy Regulation**
- Incentivise the use of **agriculture residues to produce sustainable biogas and biofuels**



Accelerate the use of electricity produced from renewable sources.

To meet our emissions reduction goals we need to generate more electricity from renewables to power buildings, industry, and transport, which traditionally relied on fossil fuels.

- **Increase the generation** of renewable electricity
- **Increase the use** of renewable electricity in buildings, transport and industry for instance through heat pumps, electric vehicles and furnaces
- **Accelerate the development of charging stations** for electric vehicles and the injection of renewable electricity in the network



Promote renewable and low-carbon fuels, including hydrogen, for sectors that are hard to decarbonise. Some sectors, like heavy transport and industry, are harder to convert to electricity, so we need to invest in cleaner fuels to power them.

- **Unlock the potential** of sustainable biomass and biofuels, green hydrogen, and synthetic fuels
- **Enable carbon capture, storage and use** to support deep decarbonisation, for example in cement production
- **Clearly define and classify** different fuels to support market uptake and transparency
- **Promote innovative projects** based on low-carbon fuels, such as hydrogen-fuelled clean steel plants



Adapt energy markets and infrastructure to a more complex, integrated energy system. In an integrated energy system, consumers and investors should be able to choose the option that best matches their need, based on prices that reflect the true cost and efficiency.

- Ensure **equal treatment for all energy carriers**, making electricity and gas markets fit for decarbonisation, for example with respect to taxation
- **Better inform consumers** about their options to interact with the energy market and the sustainability of the products they consume
- Support **digital energy services**, including smart meters for homes and smart chargers for electric vehicles
- Support **research and innovation** to create new synergies in the energy system