

Scientific Opinion on

A systemic approach to the **energy transition** in Europe

ISSUE

Keeping global warming below **1.5°C** requires cutting greenhouse gas emissions completely by 2050.

SOLUTION

A **fundamental transformation of the energy systems** is crucial to minimise CO₂ emission, the principal greenhouse gas contributing to global warming.

CHALLENGE

This transformation needs to be **fair and inclusive**, and improve **the global competitiveness** of the EU economy.

Replacing energy sources with renewables is a complex process, considering the rich variety of energy systems across Europe.

The **energy system is interlinked** with all areas of life (like food, mobility, security, justice, trade, agriculture...).

GOAL

To achieve **climate neutrality through clean, affordable and secure energy**, without leaving anyone behind.

Recommendations



Support the use of **decarbonised energy sources, electrification, and hydrogen** to build a clean, flexible and efficient energy system.



Include everyone, supporting low carbon energy choices with fair compensation for low-income groups, and promoting **more efficient energy use**.



Shape an **effective and just regulatory system**, driven by carbon-pricing and international climate commitments.

Impact

This Scientific Opinion informs the European Commission's clean energy transition policy, in the frame of the **European Green Deal** and the '**Fit for 55**' legislative package.

This is a summary of a scientific opinion by the **Group of Chief Scientific Advisors**,

Independent expert group providing high-quality and timely scientific advice to the European Commission, to inform European Union policies and legislation, and informed by [SAPEA evidence review reports](#).

Read the full report [here](#).

<https://europa.eu/!Rf67QV>