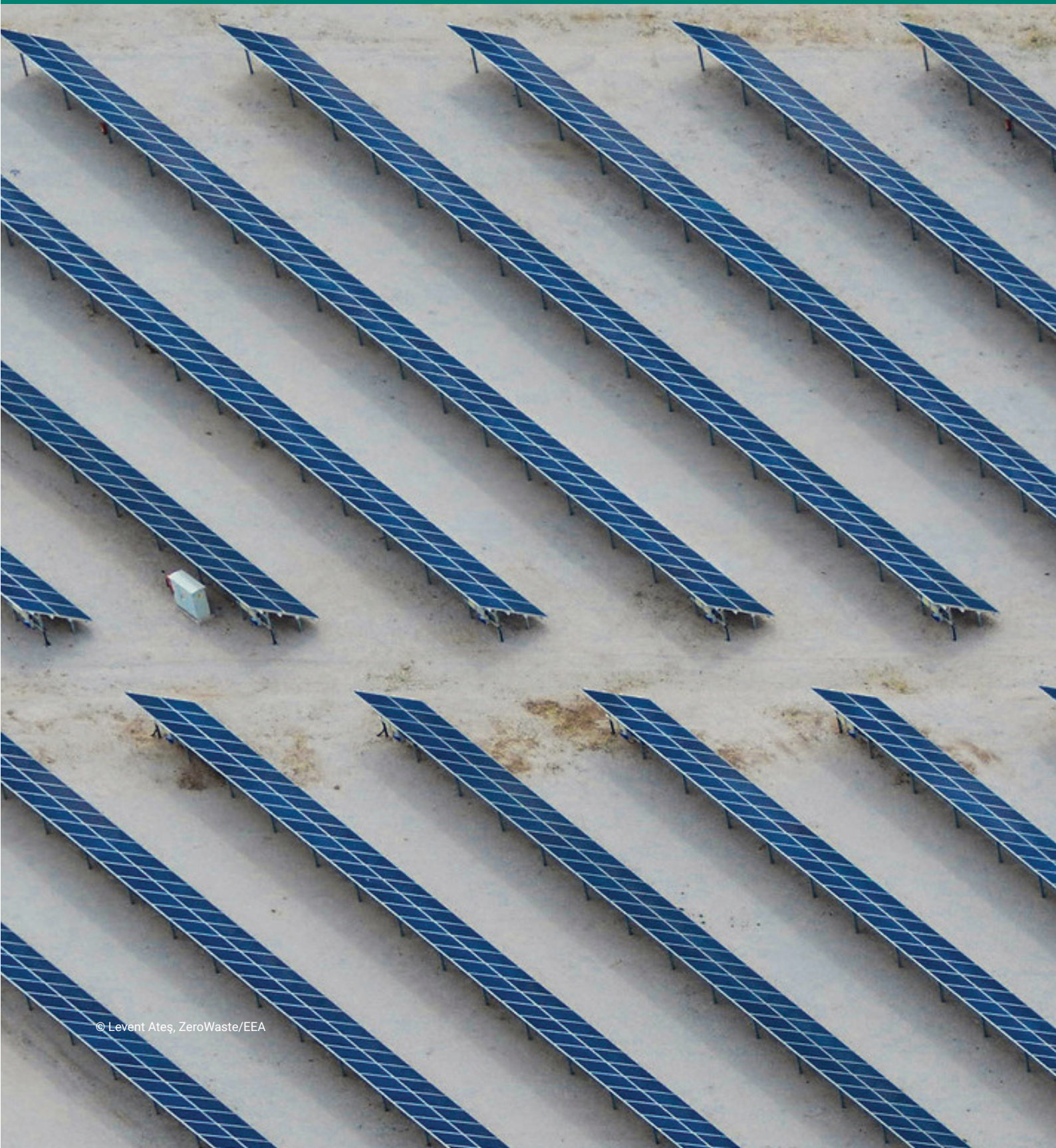
8TH EAP THEMATIC PRIORITY OBJECTIVE

Environmental and climate pressures related to EU production and consumption



6 Environmental and climate pressures related to EU production and consumption

Reducing environmental and climate change pressures, and moving towards environmental sustainability

Promoting environmental aspects of sustainability, and significantly reducing key environmental and climate pressures related to the European Union's production and consumption, is key to the success of EU's environment and climate policy. The EU's 8th Environment Action Programme (EAP) ([1]) recognised this and made it one of its priority objectives to be met by 2030.

In order to capture progress towards this objective, the European Commission's 8th EAP monitoring framework ([2]) includes five indicators and corresponding 2030 targets:

- An indicator on energy efficiency to monitor whether the EU will reduce primary and final energy consumption levels to 992.5 and 763 million tonnes respectively of oil equivalent by 2030.
- An indicator on renewable energy sources to monitor whether the EU will increase the share of renewable energy sources in gross final energy consumption to at least 42.5% by 2030.
- An indicator on circular material use rate to monitor whether the EU share of recycled material in overall material use will double by 2030 compared to 2020.
- An indicator on public transport to monitor whether there will be an increase in the share of buses and trains in inland passenger transport in the EU.
- An indicator on organic farming to monitor whether the share of the EU's agricultural land that is organically farmed increases to at least a quarter by 2030.

The indicator assessment results are summarised further below. In summary, despite observed progress, the prospects of meeting the corresponding 2030 targets are, at present, not good. A common denominator across all five indicators is the extent of the required change, the speed at which this needs to take place and the need for a deep transformation of the systems that underpin these five areas if the targets are to be met by 2030. In addition, reducing consumption, energy and material needs and enabling sustainable choices for consumption, energy use, food and mobility would be key determinants in succeeding with meeting the targets.

The methodology used to determine the prospects of meeting the 2030 targets is described in Annex 2. It is also explained in the following key:

Methodology key

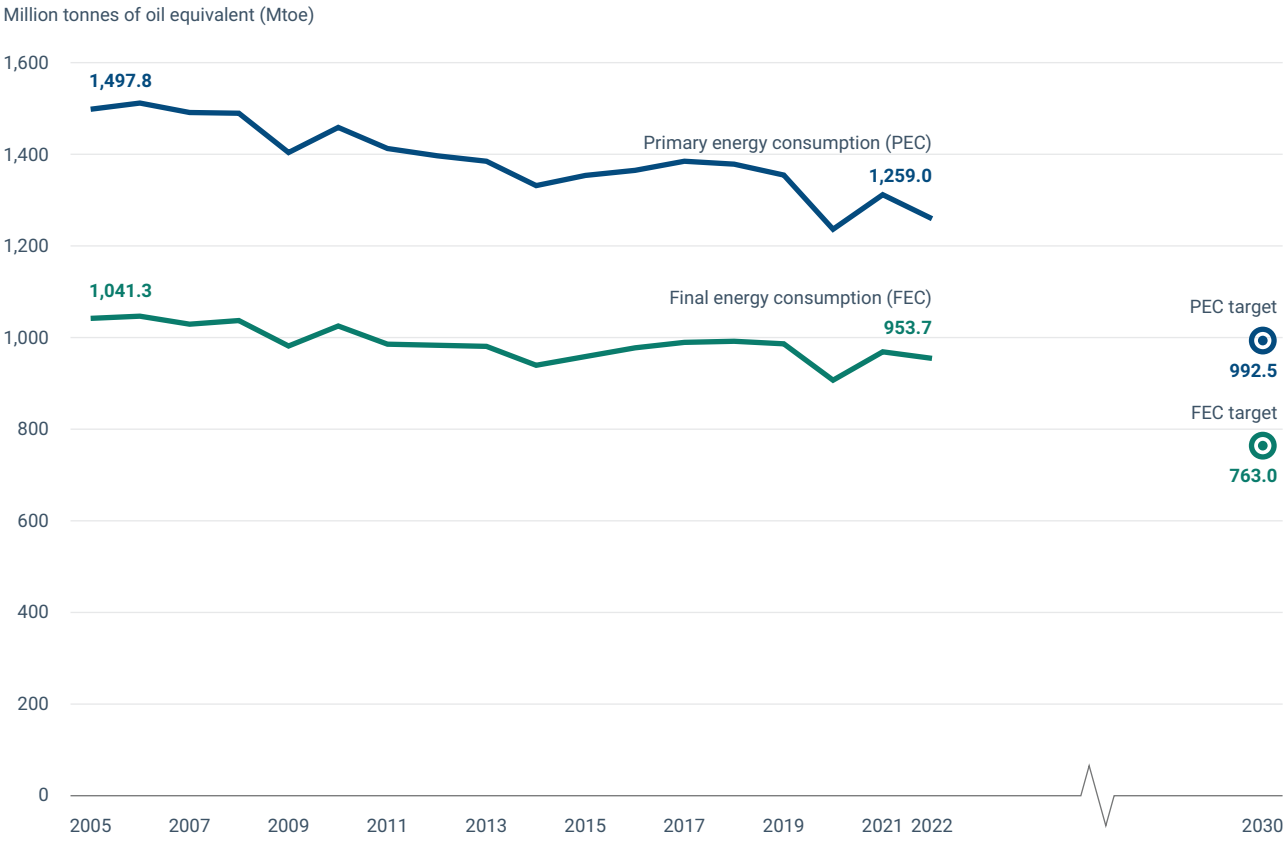
Will the objective be met by 2030?		
	**It is very likely**	i.e. it answers 'yes' with a high degree of confidence to the question
	**It is likely but uncertain**	i.e. it answers 'maybe yes' to the question
	**It is unlikely but uncertain**	i.e. it answers 'maybe no'
	**It is very unlikely**	i.e. it answers 'no' with a high degree confidence
	**It is unclear**	i.e. the prospects cannot be determined (e.g., insufficient data/evidence, no correlation between indicator and selected objective)

Energy consumption:

Will primary and final energy consumption levels fall to 992.5 and 763 million tonnes of oil equivalent respectively by 2030?

Very unlikely. In the remaining years to 2030, the average annual pace of reduction seen in the past 10 years will have to be three times faster to meet the primary energy consumption target, and nine times faster to meet the legally-binding final energy consumption target.

Figure 6.1 **Primary and final energy consumption, EU**



Source: Eurostat/EEA.

Relevance and policy target

- Reducing energy consumption reduces associated costs, decreases energy dependence, and reduces the environmental and climate impacts of energy supply and use.
- The EU has a binding target to bring final energy consumption (FEC) levels down to 763 million tonnes of oil equivalent (Mtoe) by 2030 ([3]). FEC is the energy consumed by end users such as households and transport.
- The EU also aims to reduce by 2030 the levels of primary energy consumption (PEC) to no more than 992.5 Mtoe ([4]). PEC represents the total energy demand within a country, including losses through the production and distribution of the energy to end users.

Indicator past trend (2005-2022): decrease ↓
Latest value (2022, preliminary): FEC: 954 million tonnes oil equivalent (Mtoe), PEC: 1,259 Mtoe

- Over the 2005-2022 period, FEC fell by 8% and PEC by 16%.
- The ongoing substitution of fossil fuels and nuclear by the typically more efficient renewable energy in electricity generation, coupled with improvements in energy transformation processes, have contributed significantly to the reduction in PEC. Energy saving and energy efficiency measures, structural changes towards less energy-intensive industries and gradually warmer winters because of climate change were the main reasons behind the decrease of FEC.

2030 outlook

- It is very unlikely that the EU will meet the 2030 PEC and FEC targets.
- To reach the targets, energy consumption in the years up to 2030 will have to fall at a pace three times higher for PEC and nine times higher for FEC compared to that of the past 10 years. The FEC target is legally binding.
- A deep and fast transformation of the energy sector is necessary if the targets are to be met. To maximise benefits, new measures will be needed to empower users to operate in response to the system's needs. Member States will develop their policies and measures in updated National Energy and Climate Plans in 2024 and these may include pathways to address the energy efficiency shortfall.

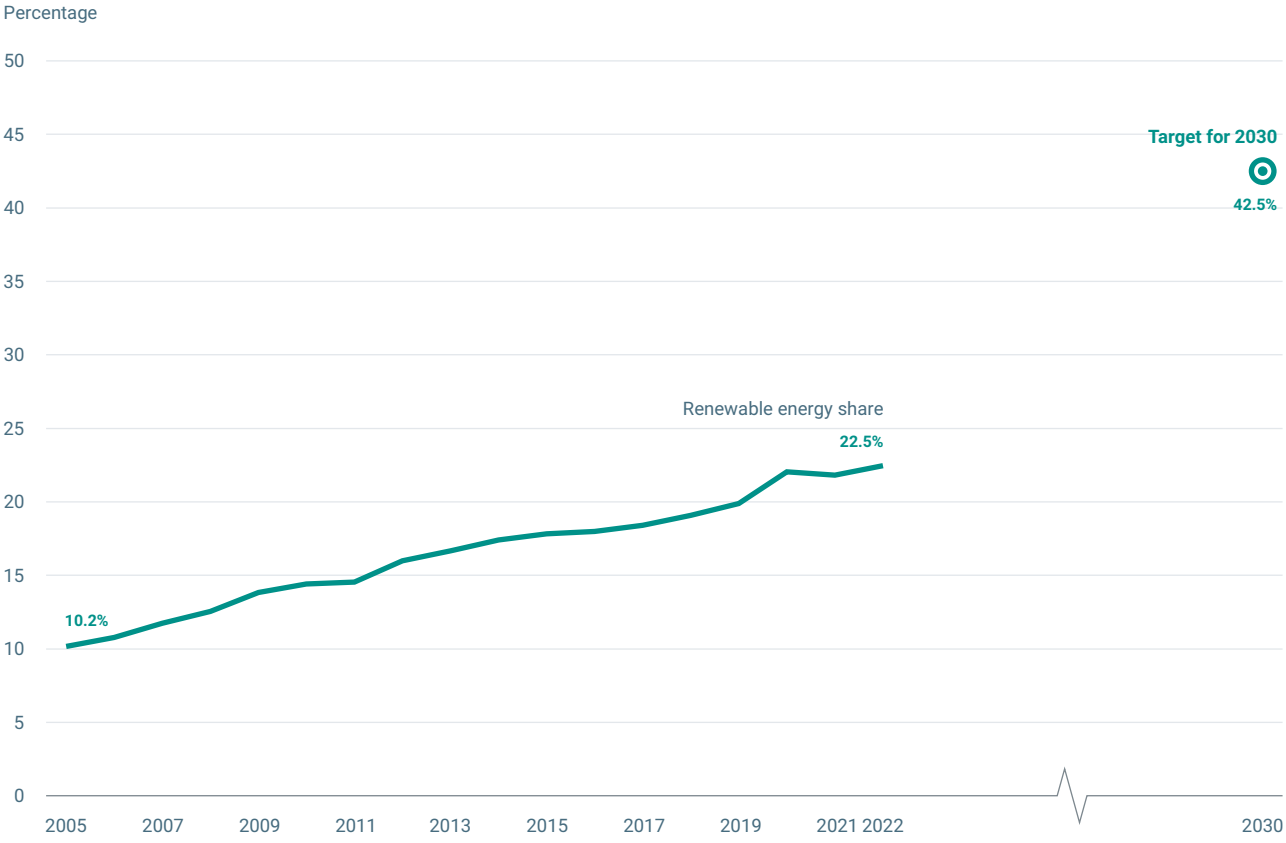
For more references and additional information, including at country level, see the full indicator version.

Renewable energies:

Will the share of renewable energy in gross final energy consumption reach at least 42.5% by 2030?

Unlikely but uncertain. Requires more than double the average annual rate of growth from now until 2030 compared to that of the past 10 years. Recent rapid deployment of some renewable energy technologies provides for some optimism in meeting the 2030 target.

Figure 6.2 **Share of renewable energy in gross final energy consumption, EU**



Source: Eurostat/EEA.

Relevance and policy target

- An increase in the use of renewable energy has multiple benefits for society, such as mitigating climate change, reducing the emission of air pollutants and improving energy security.
- The EU's target is to increase the share of renewable energy sources in gross final energy consumption to 42.5% by 2030 ([5]).

Indicator past trend (2005-2022): increase ↑
Latest value (2022, preliminary): 22.5%

- The share has more than doubled between 2005 and 2022 and reached 22.5% in 2022, according to early estimates by the EEA. Progress so far is attributed to dedicated policies and support schemes, as well as the improved economic competitiveness of renewable energy sources.
- Solid biomass remains the most significant fuel in the renewable energy mix, with 41% in 2021, followed by wind (13%), hydropower (12%), liquid biofuels (8%) and biogas (6%). Solar photovoltaic and ambient heat from heat pumps each represented less than 6%; however, they are the fastest growing sources ([i]) ([6]).

2030 outlook

- It is unlikely but uncertain that the EU will meet its target by 2030. Reaching the target will require the average rate of growth of the share of renewable energy sources in the years up to 2030 to reach more than double the rate observed over the past 10 years.
- Nevertheless, modelling from the IEA ([7]) and Ember ([8]) indicates that reaching the new 42.5% target might be feasible if fast and decisive action is taken to promote renewables and reduce energy consumption. The surprisingly rapid deployment of technologies such as solar photovoltaic and heat pumps also provides some optimism.
- A deep transformation of the European energy system would be needed within this decade if the target is to be met.

For more references and additional information, including at country level, see the full indicator version.

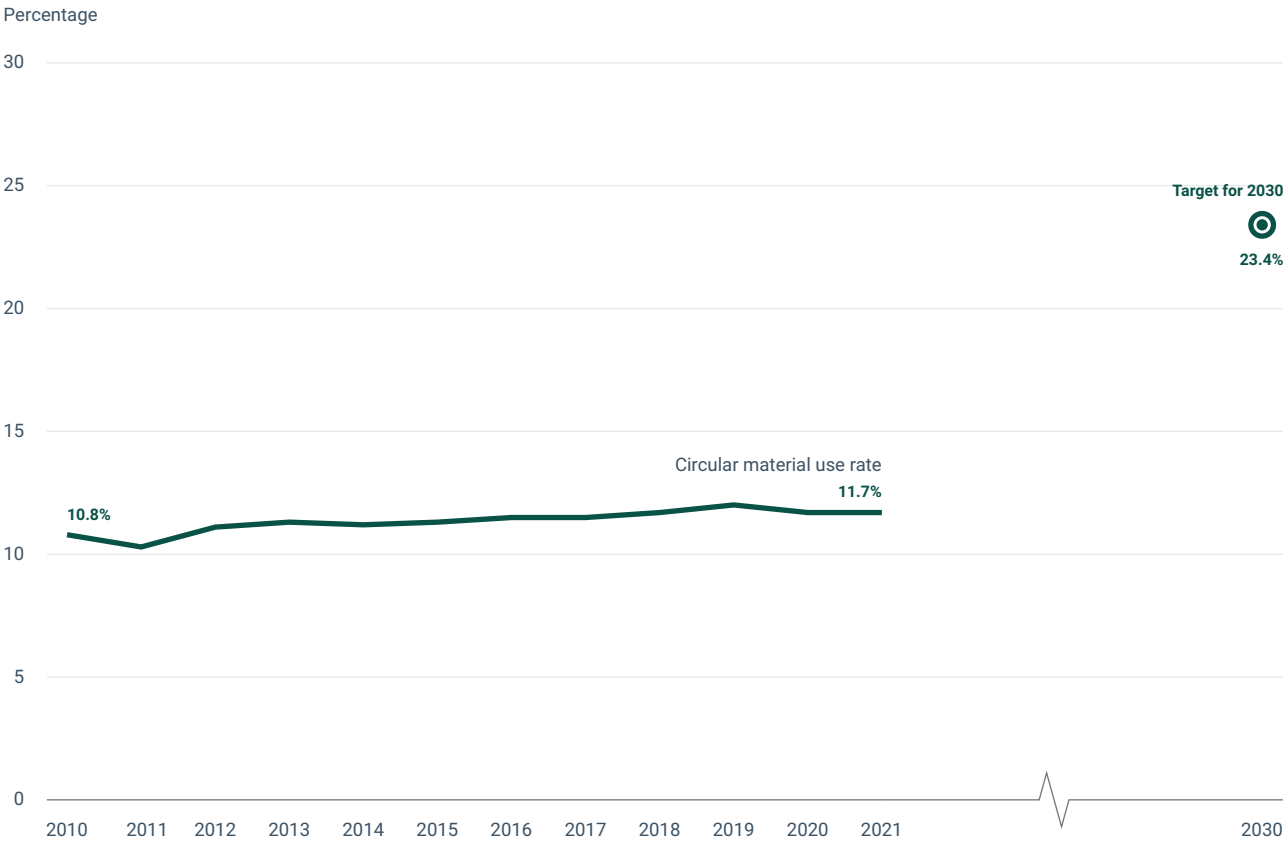
([i]) The comparison among renewable energy sources is based on total energy supply from the Eurostat EU complete energy balances of 2021 – see endnote number 6 for a full reference. The 2022 balance was not available at the time of writing this indicator and, consequently, that paragraph refers to 2021 data.

Circular material use:

Will the rate of circular material use double by 2030 from 2020 levels?

Very unlikely. Meeting the target requires the average annual pace of increase of the rate to be six times higher compared to that of the last decade. The past progress has been very slow and projections show an increased demand for materials in the EU by 2030.

Figure 6.3 **Circular material use rate, EU**



Source: Eurostat.

Relevance and policy target

- The circular material use rate (CMUR) measures the share of material recovered and fed back into the economy in overall material use. Increasing the CMUR — whether by increasing the amount of recycled waste or decreasing the amount of primary material used — would reduce the amount of primary material extracted for production and the associated negative impacts on the environment and climate. It would also improve the EU's strategic autonomy by reducing reliance on primary resources, including imported materials.

- The EU circular economy action plan ([9]) aims to double the CMUR by 2030 compared to 2020.

Indicator past trend (2010-2021): increase ↑
Latest value (2021): 11.7%

- The CMUR increased from 10.8% in 2010 to 11.7% in 2021, mainly due to increases in the amount of waste recycled. Domestic material consumption has remained relatively stable ([10]).

- Non-metallic minerals account for more than 50% of total material consumption. The other material group categories are biomass, metal ores and fossil energy materials/carriers.

2030 outlook

- Meeting the target of doubling the CMUR would mean an increase from 11.7% in 2021 to 23.4% by 2030, and the annual compound growth rate of 2011-2021 would have to increase more than sixfold. This is very unlikely considering the very slight increase in the CMUR in the previous decade, no increase at all between 2020 and 2021 and projections by the OECD predicting increased future virgin demand for materials in the EU by 2030 ([11]).

- Reaching the 2030 target would require both significantly reducing material consumption and substantially boosting recycling. Reducing the use of the bigger material groups — non-metallic minerals and metals — has a greater potential for increasing the CMUR. However, since not all material groups have the same environmental consequences, to maximise environmental benefits, measures should also focus on reducing consumption of fossil energy materials and increasing the sustainability of biomass production ([12]).

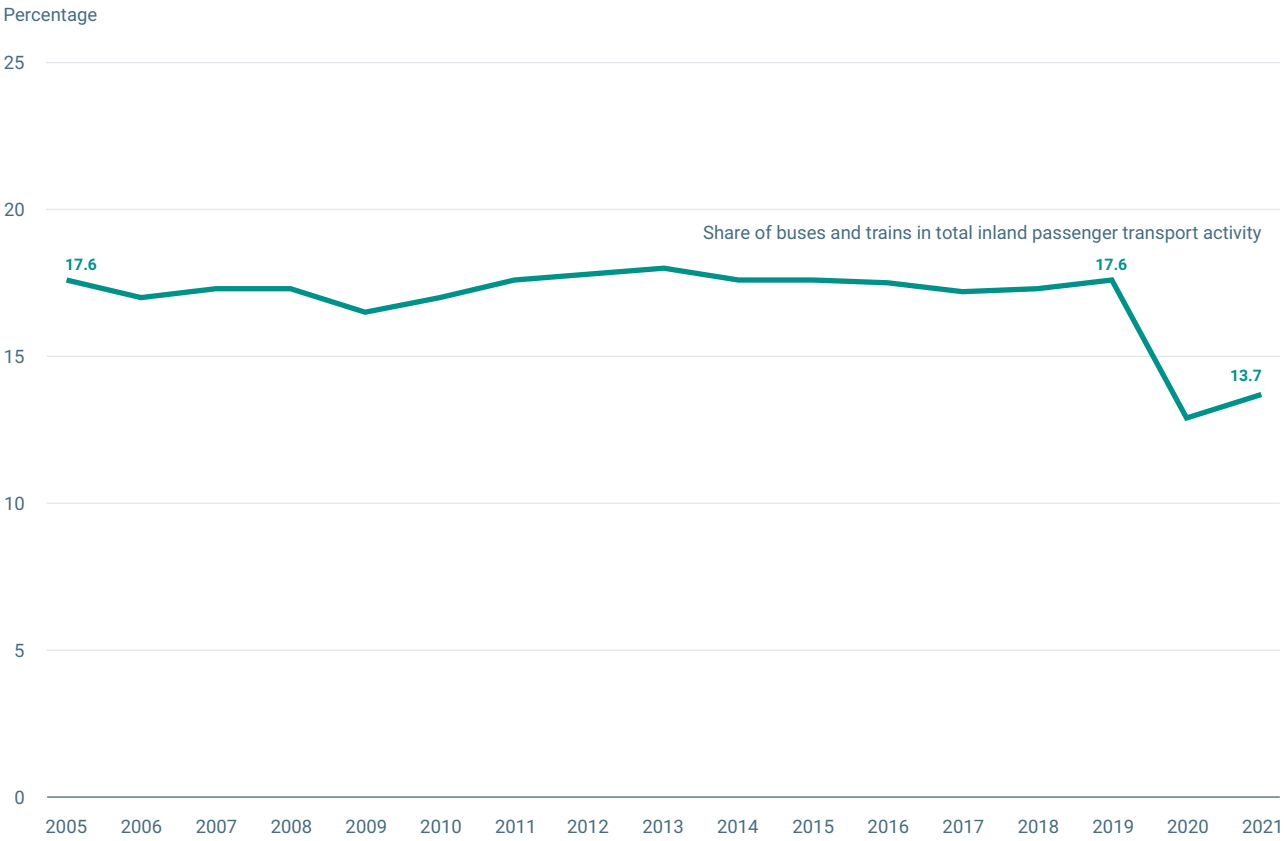
For more references and additional information, including at country level, see the full indicator version.

Buses and trains:

Will the share of collective transport modes (buses and trains) in inland passenger transport increase in the coming years?

Unlikely but uncertain. There has not been any real progress over the years and there is currently no comprehensive policy framework promoting a shift of passenger transport towards public transport.

Figure 6.4 **Share of buses and trains in total inland passenger transport activity, EU**



Source: Eurostat.

Relevance and policy target

- Promoting sustainable and more efficient transport modes such as collective passenger transport reduces greenhouse gas emissions and other environmental pressures such as air pollution and noise ([13]). The European Commission's sustainable and smart mobility strategy ([14]) of the European Green Deal ([15]) called for decisive action to increase passenger use of public transport such as buses and trains.

Past trend (2005-2021): stable (2005-2019) →, decrease (2019-2021) ↓
Latest value (2021): 13.7%

- From 2005 to 2019, the share of collective transport in total inland passenger transport remained constant at 17.6% and decreased in 2019-2021, mainly due to travel restrictions and changed mobility habits brought about by the COVID-19 pandemic and its aftermath ([16]).

- The share was 13.7% in 2021.

2030 outlook

- It is unlikely but uncertain that a modal shift towards more public transport will occur in the coming years. There has been persistent lack of progress in past years.

- Decisive action to encourage the use of public transport would be needed to achieve this objective. This would require changes in the way Europeans commute and travel, and in the way European cities are planned. Examples of these actions could be an increased availability and reliability of public transport, the reduction of public transport ticket prices and the introduction of digital solutions that promote intermodality and integrated ticketing. Similarly, investments and funding are also needed to finance safe, clean and modern infrastructure to ensure access to public transport for all ([17]).

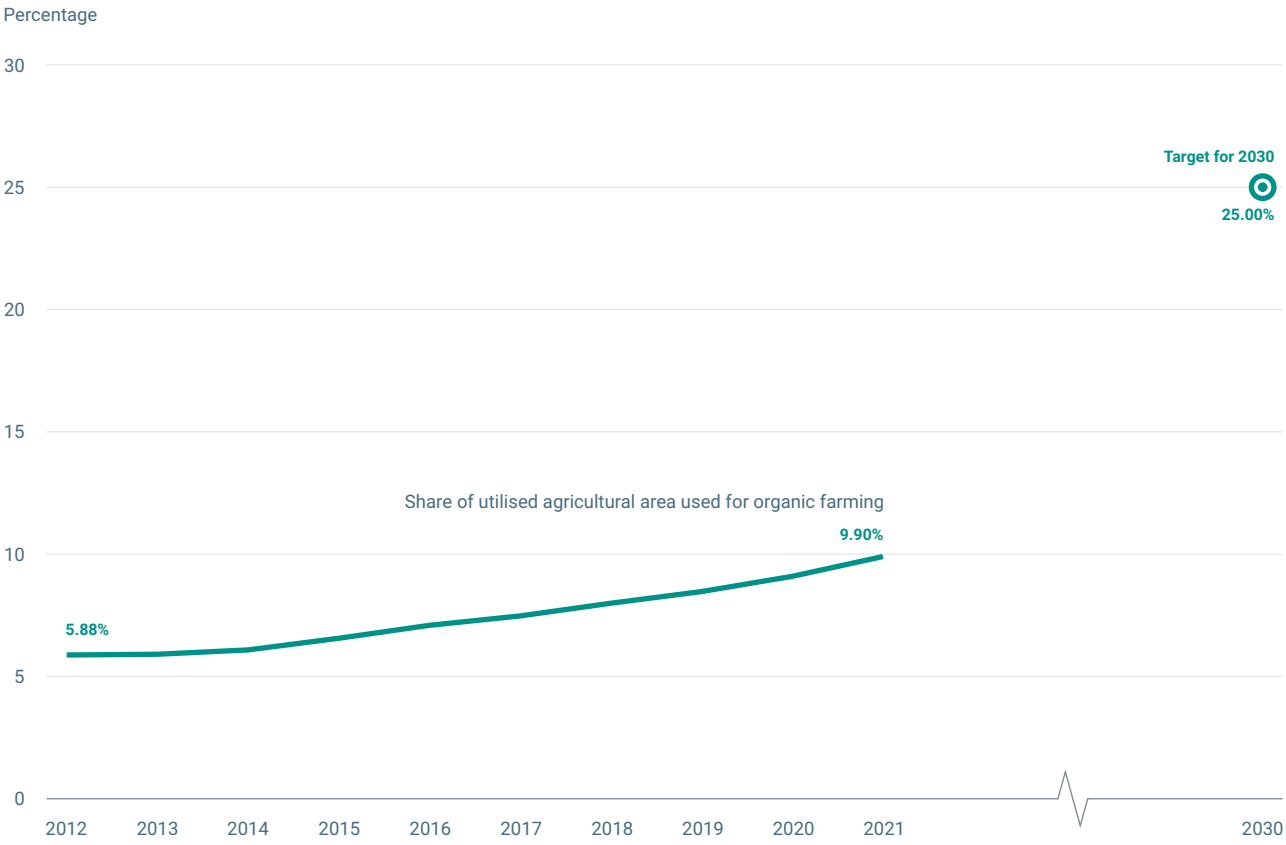
For more references and additional information, including at country level, see the full indicator version.

Organic farming:

Will the share of organic farming expand to at least 25% of EU agricultural land by 2030?

Very unlikely. Current policies in place and public support will most likely increase the share of organic farming but not sufficiently to meet the target. Meeting the target requires the pace in the increase of the share to almost double compared to that of the last decade.

Figure 6.5 **Share of utilised agricultural area used for organic farming, EU**



Source: Eurostat.

Relevance and policy target

- Organic farming produces food using natural substances and processes, which benefits biodiversity, soil health, water quality and animal welfare.
- The European Green Deal and its strategies on biodiversity ([18]) and farm to fork ([19]) aim to have at least 25% of EU agricultural land organically farmed by 2030.

Indicator past trend (2012-2021): increase ↑
Latest value (2021): 9.9%

- Organic farming has been continuously increasing since 2012 and reached 9.9% of EU agricultural land as a result of dedicated measures and a growing demand for organic products.

2030 outlook

- It is very unlikely that the 25% target will be met by 2030. For this to happen, the annual rate of increase of the organic farming share will have to almost double in 2021-2030 compared to that of 2012-2021.
- A continued increase in the share of organic farming is expected by 2030, driven inter alia by increasing policy support through the common agricultural policy (2023-2027) ([20]) and initiatives under the EU organic action plan ([21])([22]).
- However, the current policy measures and short- and medium-term decrease in demand for organic products due to unfavourable economic conditions point to a share of organic farming area lower than 25% in 2030 ([23])([24])([25]).
- To reach the target, accelerated development and implementation of coherent policies with increased ambitions need to support a fundamental transformation of food production and consumption systems.

For more references and additional information, including at country level, see the full indicator version.

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