Waste reduction Factsheet

The benefits of cutting global waste growth by half

Patterns of production and consumption have far-reaching consequences for global resources and emissions. Türkiye's leadership in recent years on efforts to move towards a "zero waste" economy have played an instrumental role in directing international attention towards this topic. Building on this progress, putting sustainable consumption, circularity and zero waste onto the high-level COP31 agenda could strengthen their transformative impact – encouraging governments and businesses alike to rethink, redesign and innovate across the lifecycle of products and infrastructure. The outcome would be more efficient, productive systems that derive new value from "waste" products, which would enhance global energy security – including through the use of waste as fuel – while reducing greenhouse gas emissions and enabling healthier local environments. The Turkish COP31 Presidency could champion this agenda through the following goal – including a specific call to action for the energy sector.

Potential pledge

Halve the growth of waste generation by 2035 and boost circular waste management systems to make productive use of waste and reduce greenhouse gas emissions.

The energy sector's contribution could enable a reduction of more than 1.5 gigatonnes of CO_2-equivalent of annual greenhouse gas emissions by 2035.

Measures to help achieve this objective

A wide range of energy-related measures can contribute to this goal. These include:

- More efficient use of materials – including plastics, metals and cement – throughout the lifecycle of products, which reduces waste by avoiding unneeded production in the first place. Examples of measures include lightweighting, designing for long lifetimes and reusability, substitution of less emissions-intensive materials, and limiting single-use plastics. They apply to consumer products ranging from packaging to vehicles, as well as buildings and construction projects.
- Increased sorting and recycling of waste to increase circularity and allow it to be used productively. Success would build on doubling the rate of plastics recycling by 2035, including through innovation in recycling techniques.
- Use of waste as a fuel, with a particular role for redirecting organic wastes for use as bioenergy, which also has substantial potential to reduce methane emissions. This includes using biogas and biomethane across a range of applications, as well as using solid waste for power generation and cement production. Relevant wastes include municipal biowaste, agricultural residues and manure.

Next steps

The COP31 Presidency can champion further policy efforts among governments globally, and the IEA is ready to help Türkiye to lead these efforts worldwide, including by:

- Identifying high-impact opportunities for action through IEA analysis, which can highlight where there is the greatest potential to deploy key levers. Such analysis can spotlight transformative benefits, scalable best practices, investment priorities, and important innovation pathways.
- Outlining policy options, with additional analysis of existing and potential policies helping to reveal gaps and options to strengthen government action in this area.

Sources include: IEA analysis, World Bank Group (2026), What a Waste 3.0, UNEP (2024), Global Waste Management Outlook.

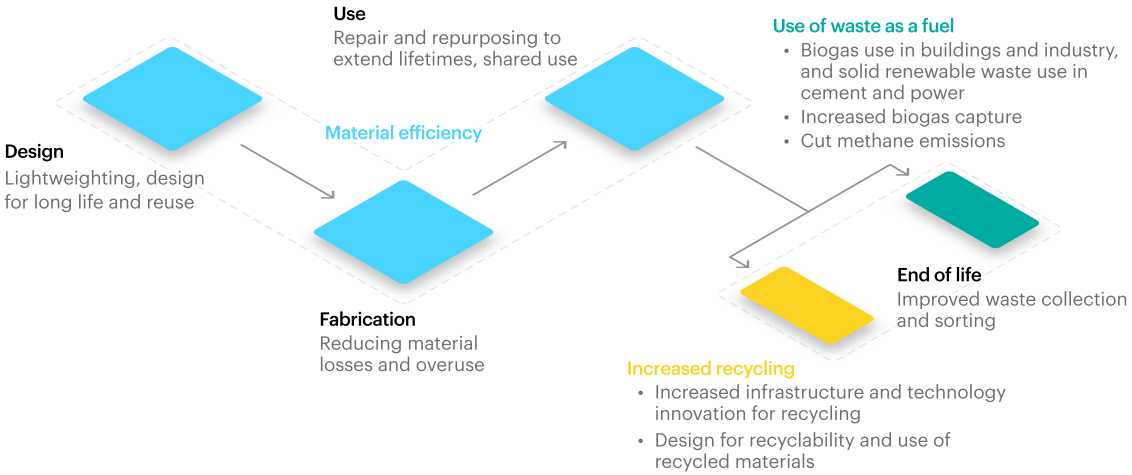
International Energy Agency

Waste reduction

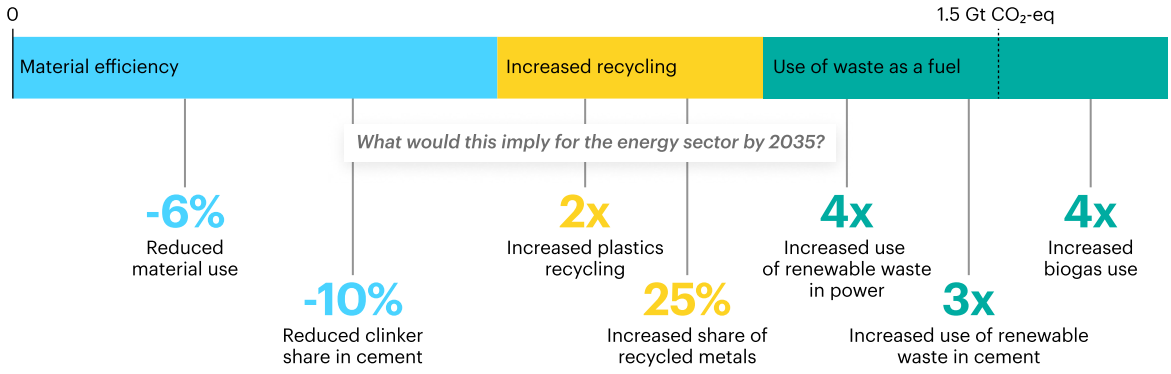
Action along the full value chain – from design to end of life – can support more efficient use of materials, reduced waste and circularity

Examples: metals use in vehicles, cement use in buildings, plastics use in packaging, fertiliser use and organic matter in food.

50%
reduction of global waste growth to 2035



The energy sector's contribution alone can yield over 1.5 Gt CO_2-eq emissions reductions in 2035



Supply potential for biogases derived from organic waste to support the quadrupling of biogases production by 2035