

Competitiveness

Why is energy efficiency important for competitiveness?

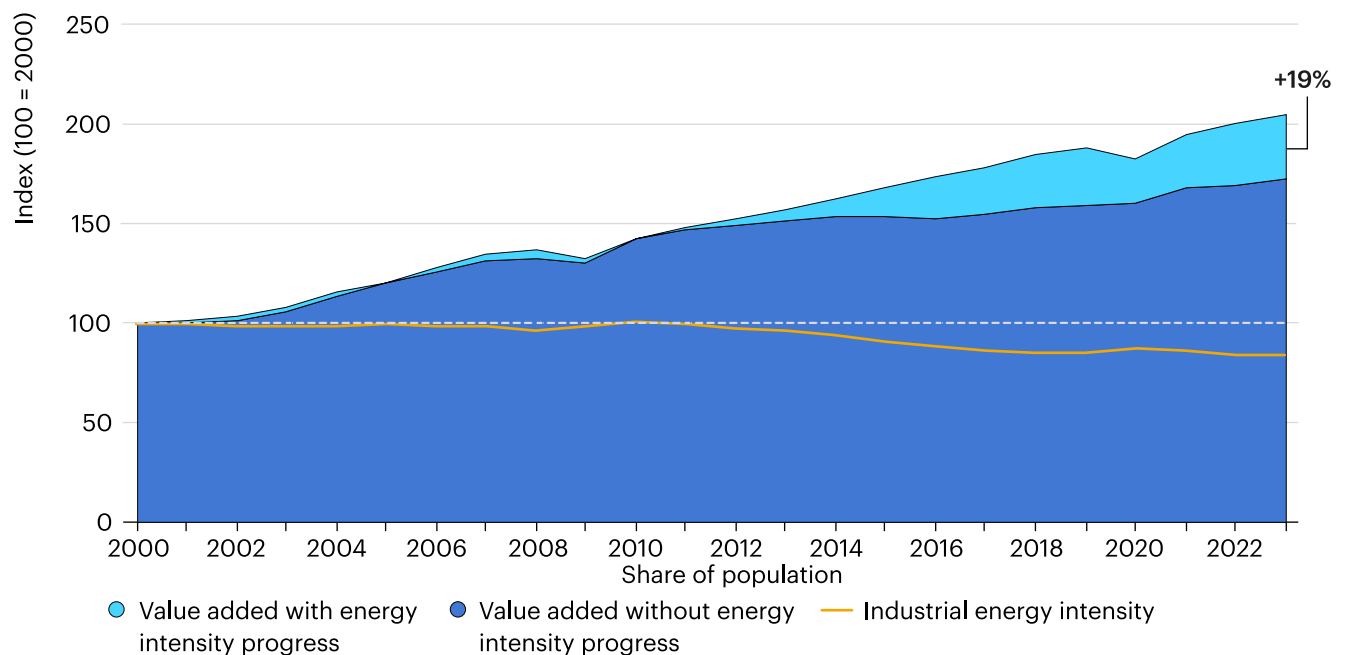
Increasing energy efficiency can improve competitiveness at both the **firm** level – by reducing costs, improving operations and increasing product value – and at the **country** level, by reducing the amount of energy required to produce economic output.

- Today the world's industries produce **nearly 20% more value added** with a given amount of energy, compared with two decades ago.
- On average, for every dollar in energy cost savings due to energy efficiency, firms also save one dollar or more from other benefits, from **improved resource use to higher productivity**.
- In the industrial sector, energy management can lead to **more than 10% in annual energy cost savings** within three years, and up to 60% over the longer term as new savings are uncovered.

Key analysis

Energy intensity improvements have enabled industries to produce 19% more value added with the same amount of energy now, compared to the year 2000. In the European Union, manufacturing industries produce 50% more value added with 25% less energy than in 2000.

Global industry sector energy intensity and value added, real development and hypothetical without energy intensity progress since 2000, 2000-2023



Source
IEA (2025), [Global Energy and Climate Model](#).



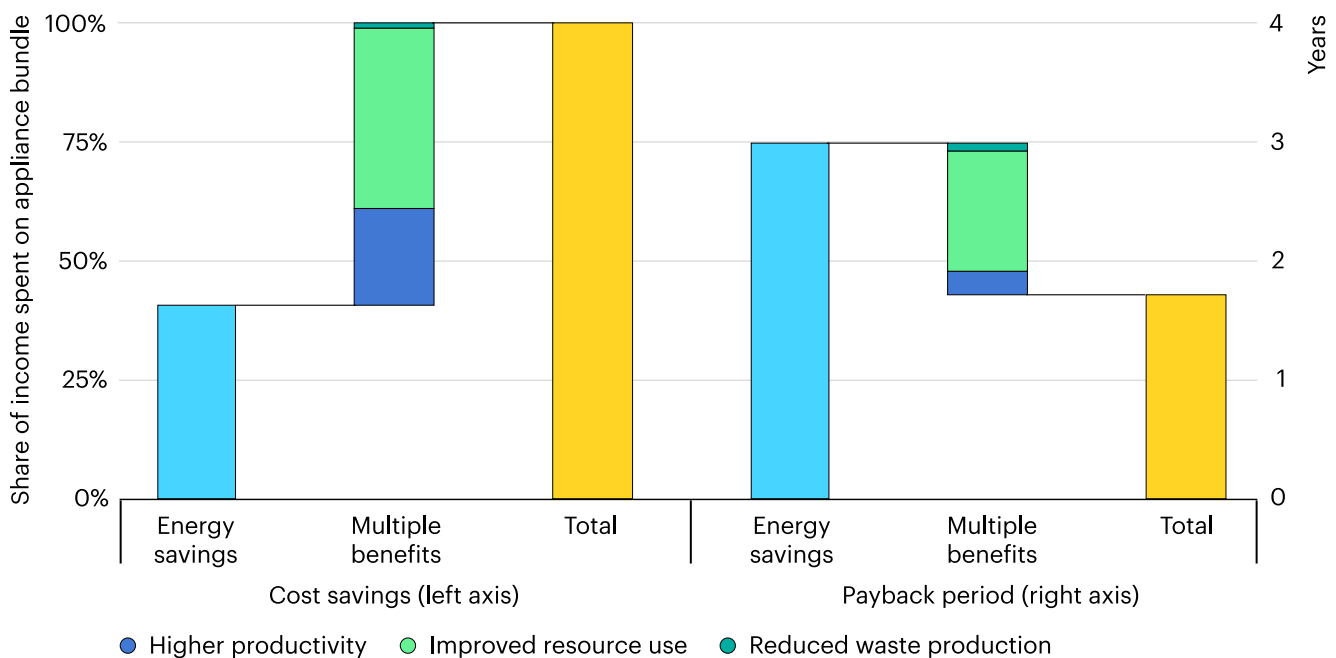
A closer look at energy efficiency in businesses

Energy management – a well-recognised strategic approach of adjusting and optimising energy consumption – is one of the key levers for industrial competitiveness. By embedding a culture of continuous improvement, firms can achieve significant reductions in energy costs, as well as a broader range of other benefits. These include:

- **Increased productivity**, such as higher capacity utilisation rates of the production equipment and [increased production capacity](#), as a result of more efficient processes and lower production costs. Efficiency has also been shown to lead to improved product quality and consistency, [contributing to brand reputation](#).
- **Improved resource use**, such as reduced equipment downtime and unplanned shutdowns, lower maintenance costs, and potentially reduced staff requirements for operation and monitoring. Efficiency has also been shown to increase worker [health](#) and [safety](#), reducing the incidence of [work-related accidents](#) and [health insurance costs](#).
- **Reduced waste production**, such as less use of materials and process water.

Combined, these multiple benefits can more than double the benefits of energy cost savings.

Cost savings and payback periods of 3 300 efficiency measures in small and medium-sized enterprises, in the United States, 2002-2024



Source: IEA analysis based on Industrial Assessment Center (IAC) (2002-2024), [IAC Database](#) (accessed on 24 April 2025).

Need more information?

IEA (2025), [The Role of Energy Efficiency in Enhancing Competitiveness](#).



Multiple Benefits of Energy Efficiency
iea.li/MultipleBenefitsEE

