

Economic Growth

Why is energy efficiency important for economic growth?

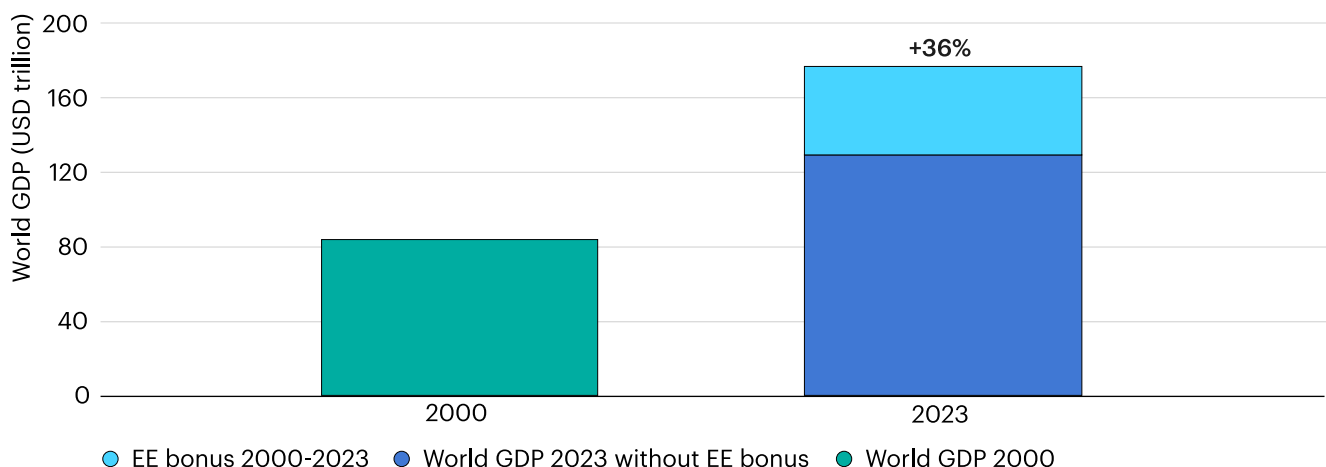
Energy efficiency allows countries to generate more economic activity using the same amount of energy. It is also linked to increased labour productivity and other economic benefits.

- Compared with 2000, today's global economy produces **36% more GDP** per unit of energy.
- Energy efficiency progress over the last 20 years means that **close to an extra USD 50 trillion** can today be produced using the same amount of energy. This energy efficiency bonus is equivalent to adding almost two times the GDP of the United States without needing to increase energy consumption.
- Energy efficiency can generate broader economic benefits, with studies also showing improvements in labour productivity and public budgets.

Key analysis

Energy is a fundamental input into nearly every aspect of the economy. As the economy grows, so does the demand for energy. However, energy efficiency plays a crucial role by allowing us to achieve more with less, enabling a gradual decoupling of economic growth from energy consumption over time.

World GDP and extra GDP produced with the same amount of energy due to energy efficiency (EE bonus), 2000 and 2023



Notes

World GDP in 2023 was nearly USD 180 trillion. If global energy intensity were the same as in 2000, only USD 130 trillion would be produced with the same energy input in 2023.

A closer look at economic benefits

Energy efficiency improvements can deliver benefits across the whole economy, with direct and indirect impacts on economic activity, employment, energy prices and other factors. While the impact of energy efficiency policies on macroeconomic performance still needs to be better understood and systematically measured, studies have highlighted some economic benefits:

- **Growth in economic activity:** Various studies have modelled the impact of select energy efficiency policies on economic activity and found a positive correlation. In Canada, an [analysis](#) of the country's policy package at the time found that every USD 1 spent on energy efficiency programmes would generate between USD 4 and USD 7 in GDP between 2017 and 2030. In the United States, a [study](#) funded by the Department of Energy estimated that doubling energy productivity could result in a net GDP increase of USD 922 billion between 2015 and 2030.
- **Improvement of public budgets:** Whether by reducing government expenditures on energy or by generating increased tax revenues through greater economic activity and/or increased spending on energy efficiency-related goods and services, energy efficiency improvements can have important impacts on the budgetary position of national and sub-national entities. In the European Union, a study found a [reduction in public budget deficits](#) as a result of energy efficiency investments. Other studies, including in [Germany](#), also illustrate the benefits and costs to public budgets of energy efficiency policy.
- **Increase in labour productivity:** An [analysis](#) of over 15 000 European firms found that those investing in energy efficiency can see increases in labour productivity – the amount of economic activity per unit of labour – between 1.4% and 3.6% compared with firms with no investment in energy efficiency.

Specific economic impacts will vary depending on the type of energy efficiency measure, country circumstances and other factors.

Need more information?

IEA (2024), [Energy Efficiency 2024](#).
IEA (2020), [World Energy Outlook Special Report: Sustainable Recovery](#).



**Multiple Benefits
of Energy Efficiency**
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