

Energy Efficiency

Potential impact of reductions:

~ 2.2 Gt CO₂

Overall progress rating:

Mixed

State of play 2022 & Progress since COP 26

- Improving energy productivity could materially reduce final energy demand in a net-zero emissions economy, and therefore materially reduce the necessary scale-up in associated investment.
- Energy intensity improvements are lagging behind with a current annual rate of 1.3% over the past five years, down from 2.3% between 2011 and 2016, and well below the 4% IEA Net Zero Emissions target by 2030, urging for more action across sectors.¹
- Key efforts identified by the ETC include appliance standards for new and retrofitted buildings, modal shifts towards cycling and reduced air travel and energy productivity in industry.

Progress & Bottlenecks

- Energy intensity improvement rates have declined in recent years. The reasons for this can be rooted back to weak energy efficiency policies in many major economies, alongside a strong growth of energy-intensive economies, as well as a slowdown in technical efficiency progress (though noting that progress in technical energy efficiency improvements is non-trivial to isolate and track).
- Currently high fossil fuel and energy prices are likely to support greater investment and policy action towards energy efficiency.
- In response to the Russian invasion of Ukraine, European countries are finding savings of 15% of more in gas use this year.

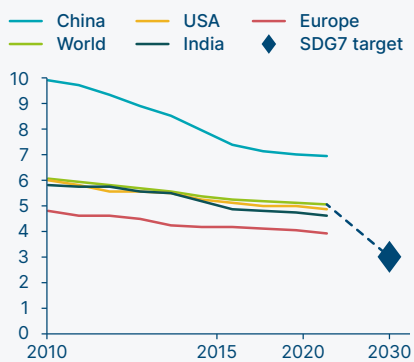
- Residential space and water heating have historically received relatively little attention from policymakers in terms of regulation and setting targets.
- Today, energy intensity for space and water heating shows large global discrepancy: an increase in space utilisation and efficiency improvements will be required.
- New regulations must better understand consumer preferences to incentivise the demand for effective technology adoption.

- Since slowing down in 2022, investment in energy efficiency is rising again, concentrated primarily in Europe.
- Buildings are the major driver for energy efficiency investments, followed by Transport and then Industry.
- Despite an uptick in investment in energy efficiency in 2021 and 2022, overall annual investment rates would need to almost triple to be consistent with the IEAs Net Zero Emissions Scenario by 2030.

Overview

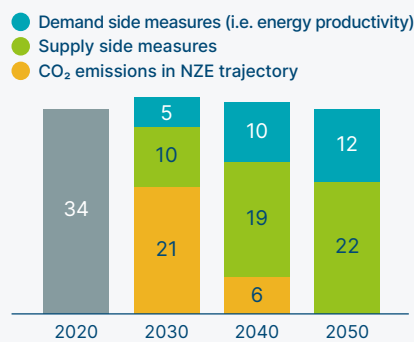
Energy intensity improvements²

MJ/\$ GDP PPP



CO₂ emissions by main mitigation measures, reduction vs BAU trajectory³

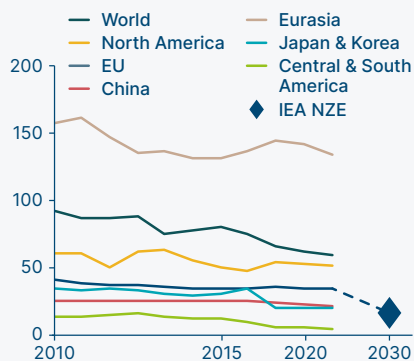
GtCO₂



Space & Water Heating

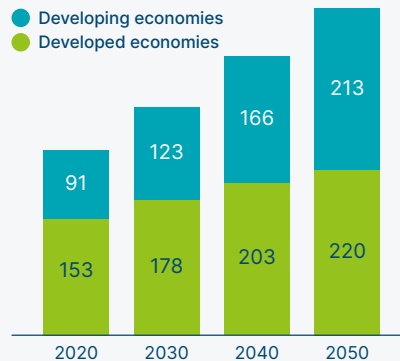
Energy intensity of space and water heating⁴

kWh/m²



Global floorspace demand for 2020-2050⁵

Billion square metres



Finance

Energy efficiency investments (total and by investment area)⁶

USD billion

