

Energy Efficiency in Buildings Sector

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Humanising the Energy Transition



ENERGY FOR PEACE (Nations)

ENERGY FOR PROSPERITY (Markets and/or States)

(Communities & Networks)

2D GLOBAL DRIVERS:

Diversification of supply
Development of new technologies
(incl. electrification)

3D GLOBAL DRIVERS:

Decarbonisation
Decentralisation
Digitalisation

4D GLOBAL DRIVERS:

Decarbonisation
Decentralisation
Digitalisation

Disruption-by-demand

Net Zero by 2050

The roadmap for buildings





75%

will increase globally the floor area between 2020 and 2050



equivalent to add the surface of Paris every week

Air conditioners added in emerging market and developing economies:

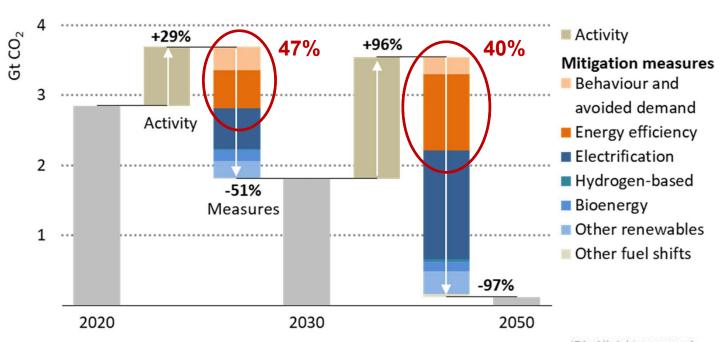


650 million by 2030

2 billion by 2050

Global direct
CO2 emissions
reductions by
mitigation
measures in
buildings in the
NZE





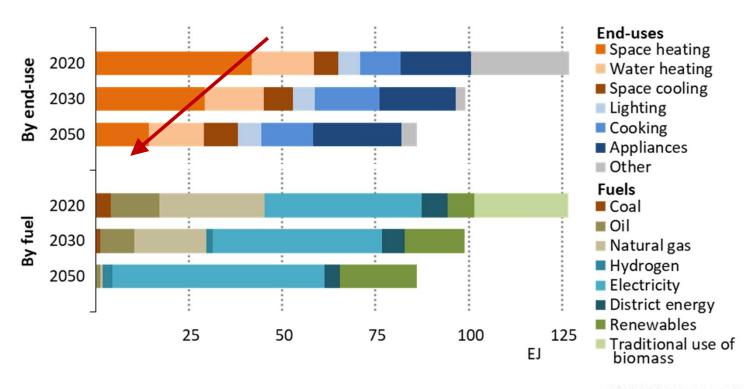
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Electrification and energy efficiency account for nearly 70% of buildings-related emissions reductions through to 2050, followed by solar thermal, bioenergy and behaviour

Notes: Activity = change in energy service demand related to rising population, increased floor area and income per capita. Behaviour = change in energy service demand from user decisions, e.g. changing heating temperatures. Avoided demand = change in energy service demand from technology developments, e.g. digitalisation.

Global final
Energy
consumption by
fuel and end-use
application in
buildings in the
NZE





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Fossil fuel use in the buildings sector declines by 96% and space heating energy needs by two-thirds to 2050, thanks mainly to energy efficiency gains

Note: Other includes desalination and traditional use of solid biomass which is not allocated to a specific end-use.

Net Zero by 2050

The roadmap for buildings – Key milestones



No new sales of fossil fuel boilers

100% of LED lamps

2025

Most appliances and cooling systems sold are best in class

2035

More than 85% of buildings are zero-carbon-ready

2050











2030

Universal energy access.
All new buildings are zero-carbon-ready

2040

50% of existing buildings retrofitted to zero-carbon-ready levels

Net Zero by 2050

The role of behavioural changes



is the cumulative emissions reduction by 2050 provided by behavioural changes

2030

Reduce excessive hot-water temperatures

19-20°C

by 2030

Average space heating temperature

24-25°C

by 2030

Average space cooling temperature

30%

by 2050

Reduction in use of energy-intensive materials per unit floor area 20%

by 2050

Relative increase on average buildings lifetime

Drivers and enablers



Laws and regulations (Building codes, MEPS, etc)

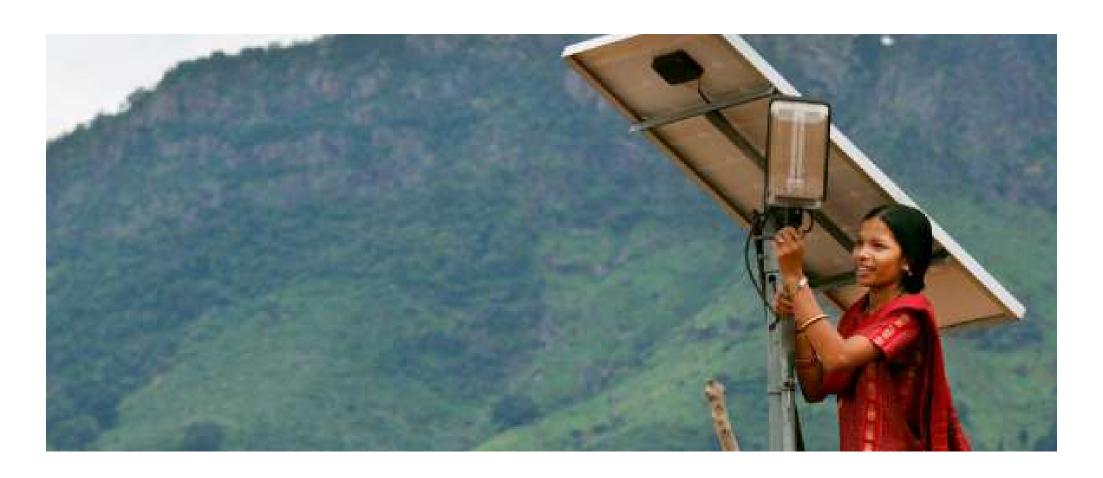
Financial and economic incentives for Energy efficiency and zero emissions investments

Labelling and public awareness campaigns to foster behaviour changes

Accelerate collaboration between governments, private sector and civil society

ENERGY FOR PEOPLE & PLANET







Thank you!

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