International Energy Agency

Energy Efficiency 2024

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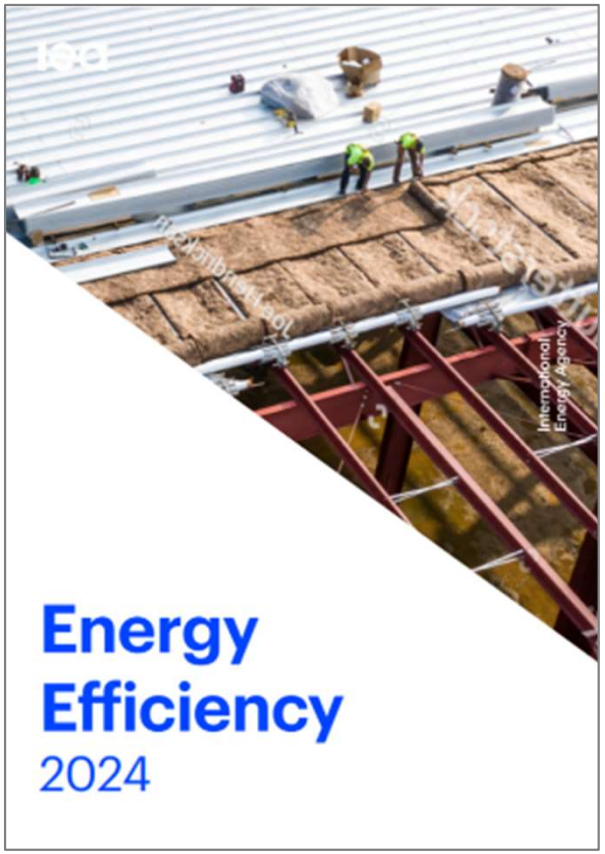
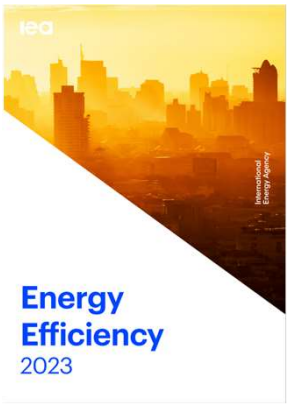
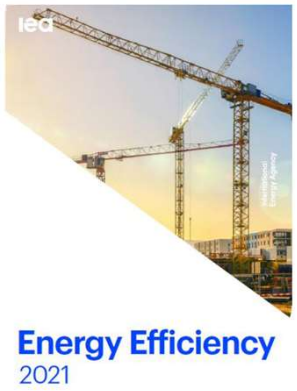
Energy Efficiency 2024

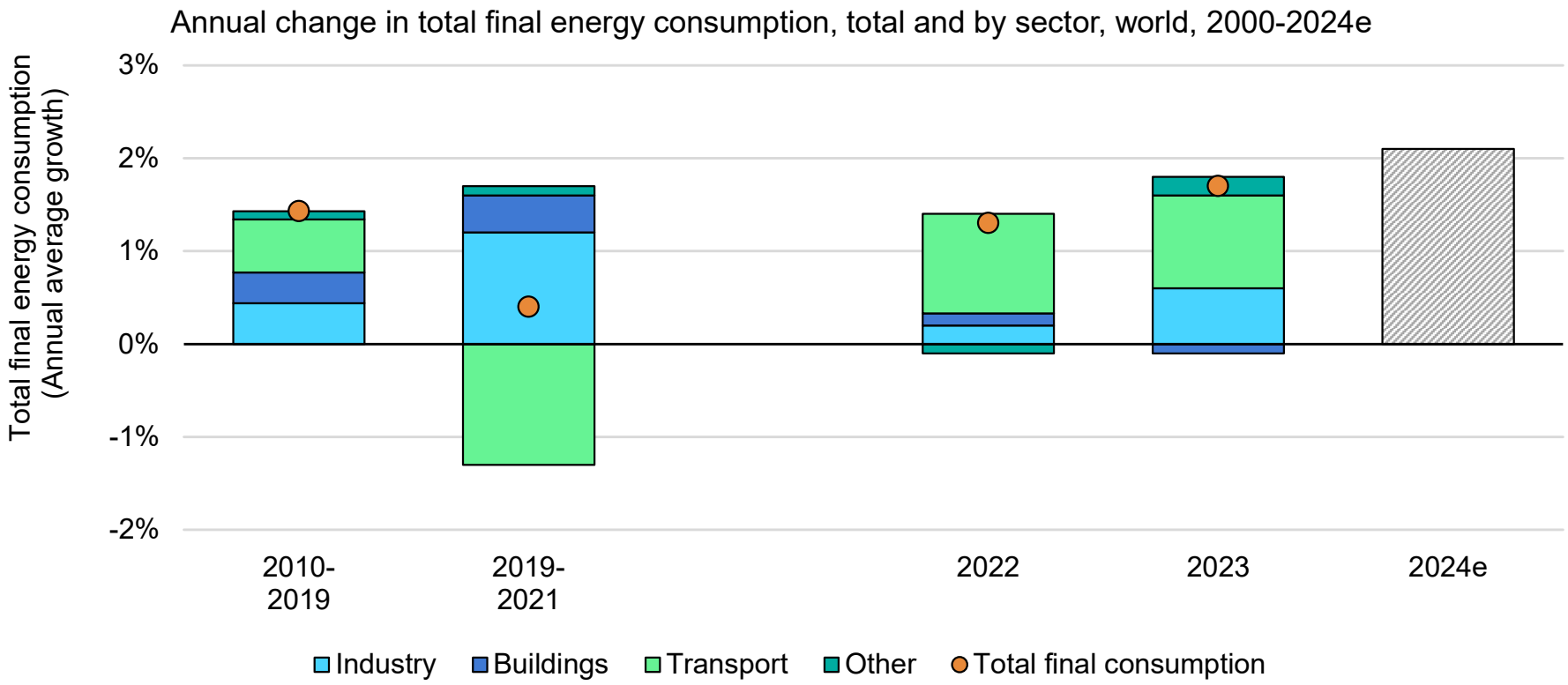
- The IEA's primary annual analysis on energy efficiency
  - Relevant and timely – tracking key trends and topics
  - Resource for policy learning and exchange between countries
  - Platform to increase the profile of efficiency
- Tracking progress towards the COP28 outcome to double the global average annual rate of energy efficiency improvements by 2030
- Freely available online: www.iea.org/reports/energy-efficiency-2024





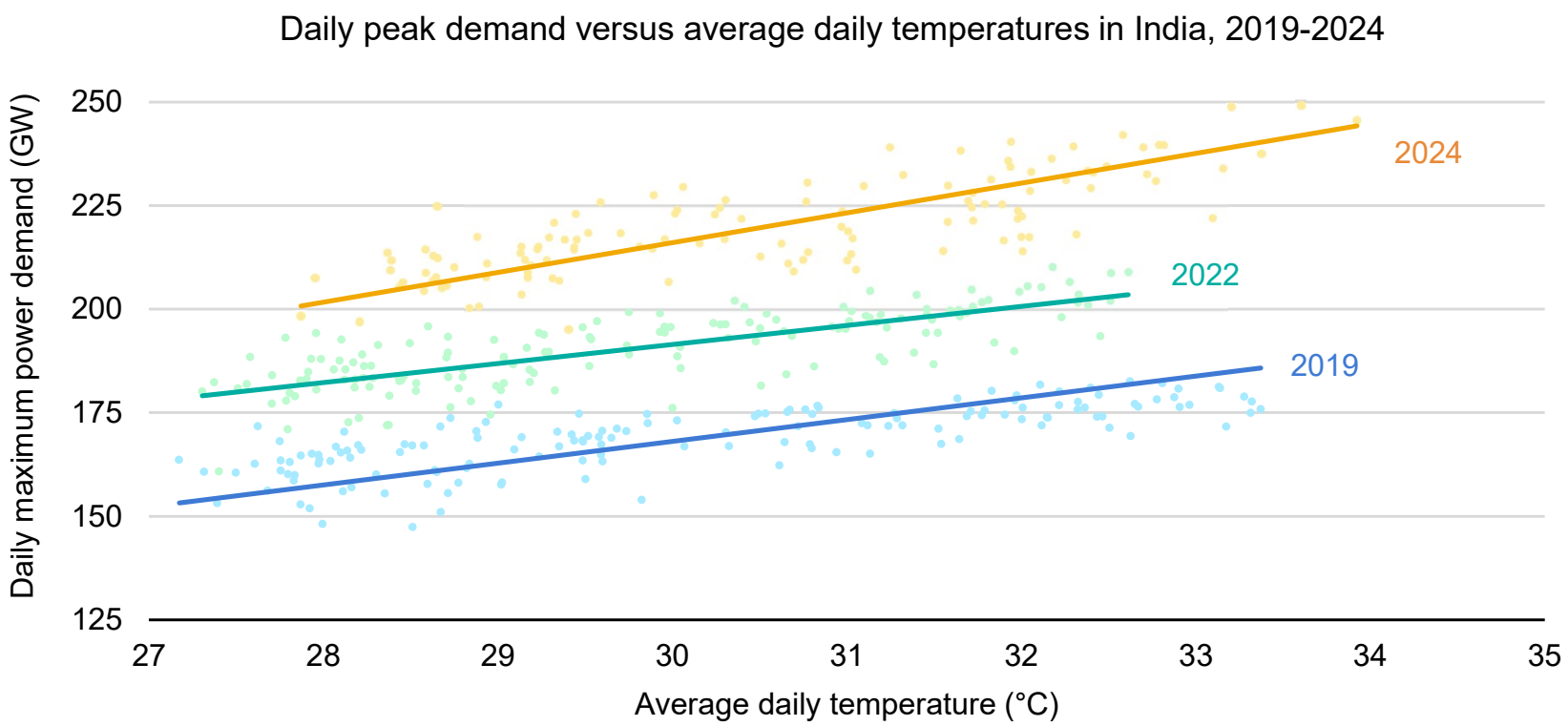


Energy demand is recovering after several shocks



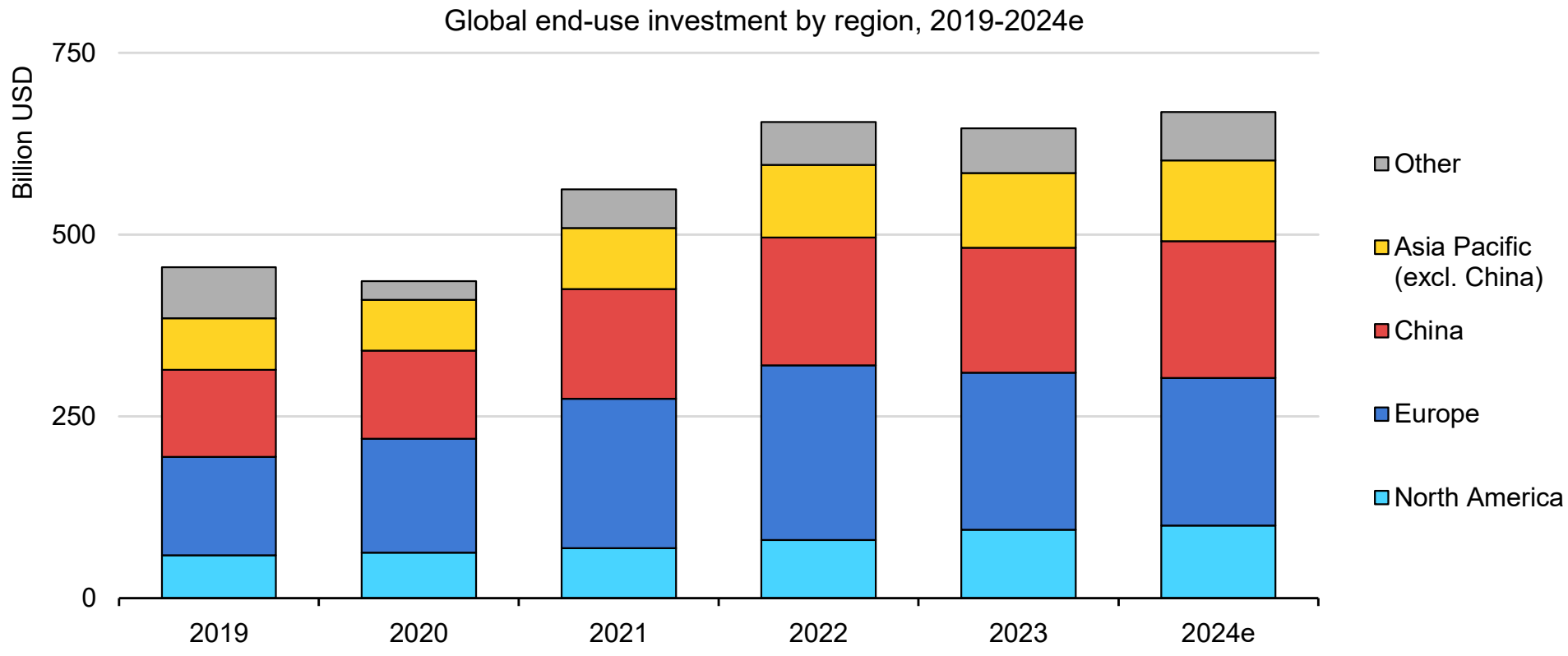
Demand growth in industry, as well as increased cooling needs in hot regions, is expected to keep energy demand growth steady in 2024

Record heat is ramping up cooling needs, and peak demand



The increasing use of ACs has put strains on grids, with over 40 countries, representing about half of global energy demand, reaching new peak electricity demand records, and many others suffering blackouts.

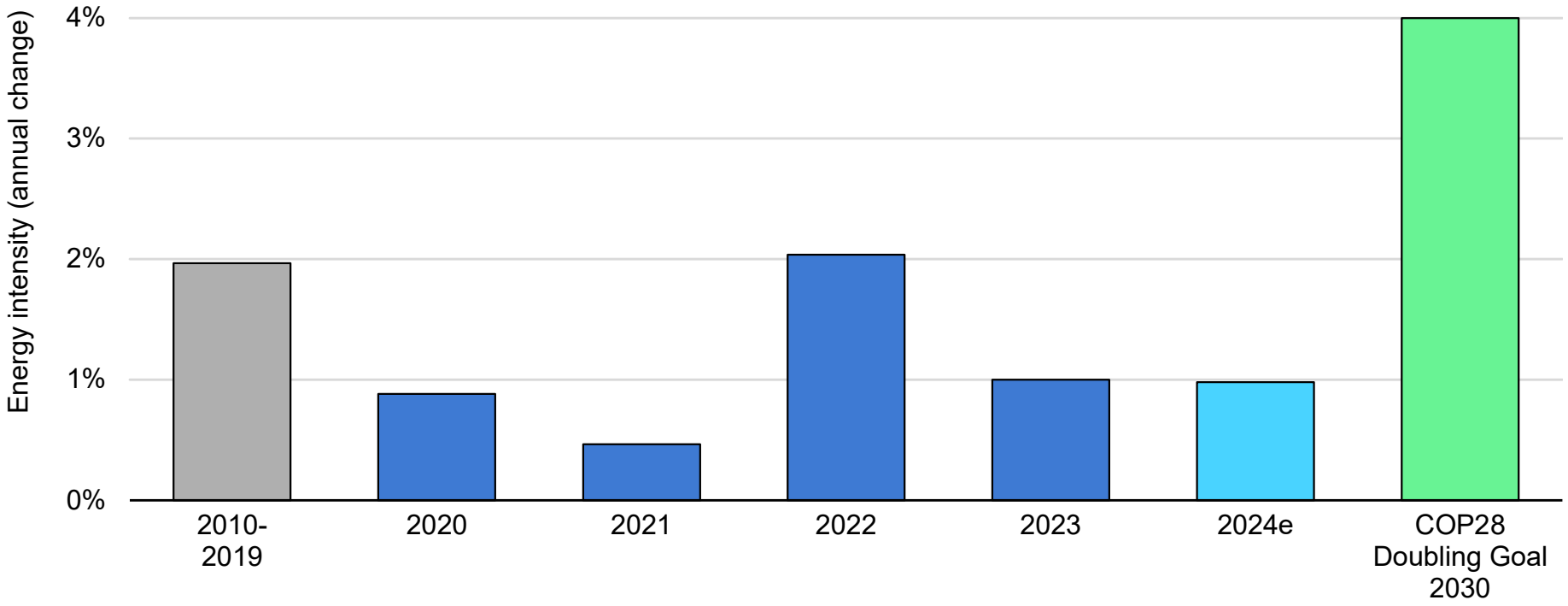
Efficiency-related investment remains flat



End-use sector investment in efficiency and electrification is expected to increase by around 4% in 2024, matching the record level set in 2022.

The world is not yet on track to double energy efficiency progress

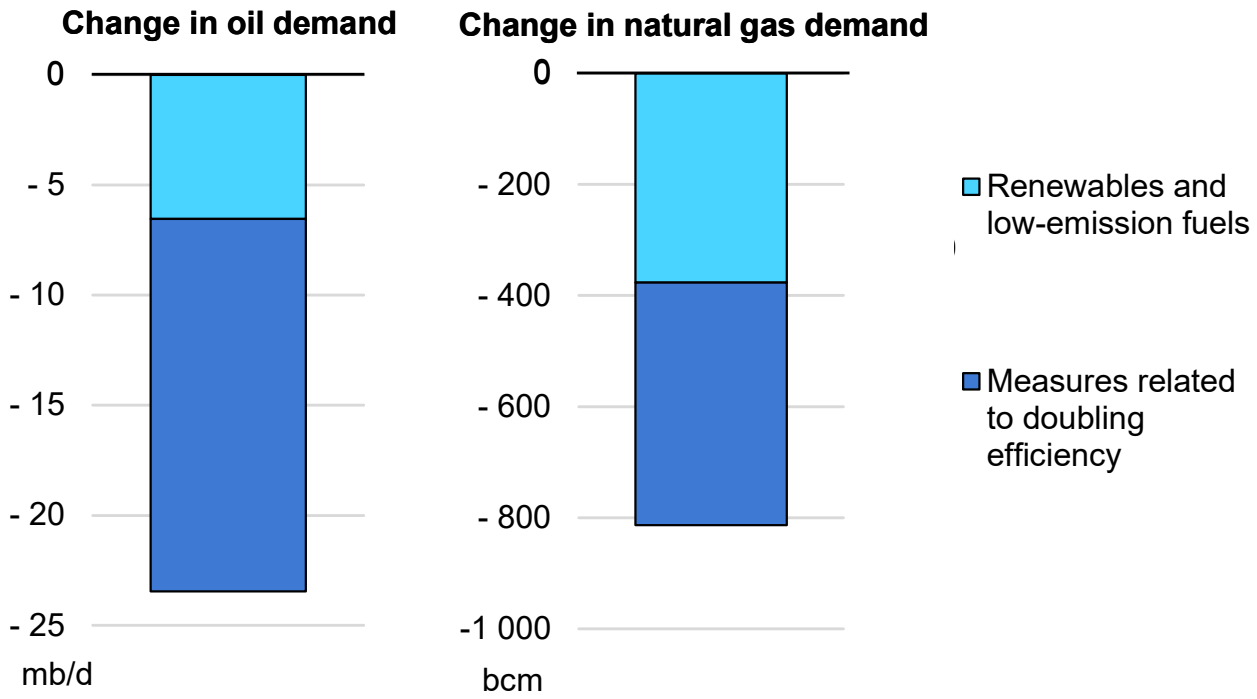
Global annual improvement in primary energy intensity, 2020-2024e, and rate needed to achieve the COP28 doubling goal



Policymakers are starting to respond to the COP28 commitment to double global energy efficiency progress, but energy intensity improvement in 2024 remains sluggish.

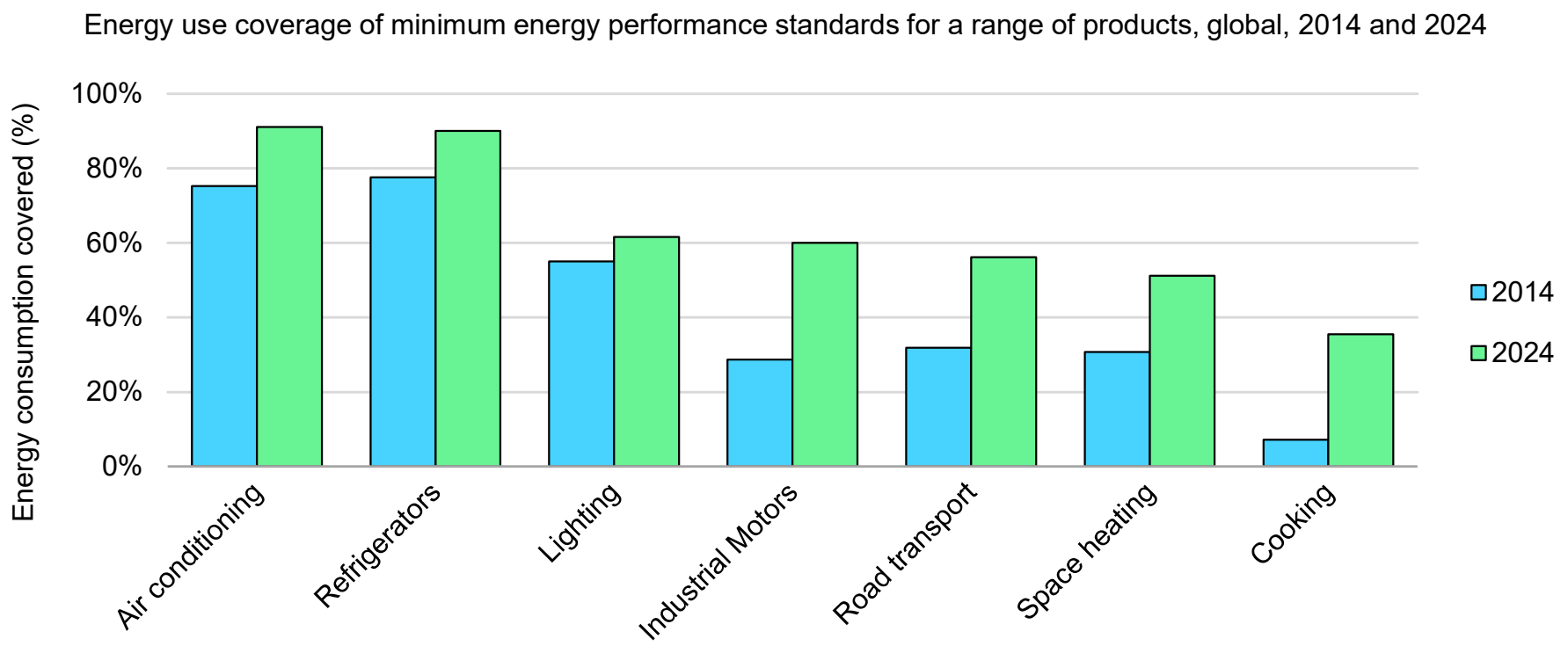
Energy efficiency is crucial for the transition away from fossil fuels

Oil and gas demand in the IEA COP28 Full Implementation Case relative to the Stated Policies Scenario, 2030



Energy efficiency can moderate demand growth pressures and has the greatest near-term potential for emissions reductions

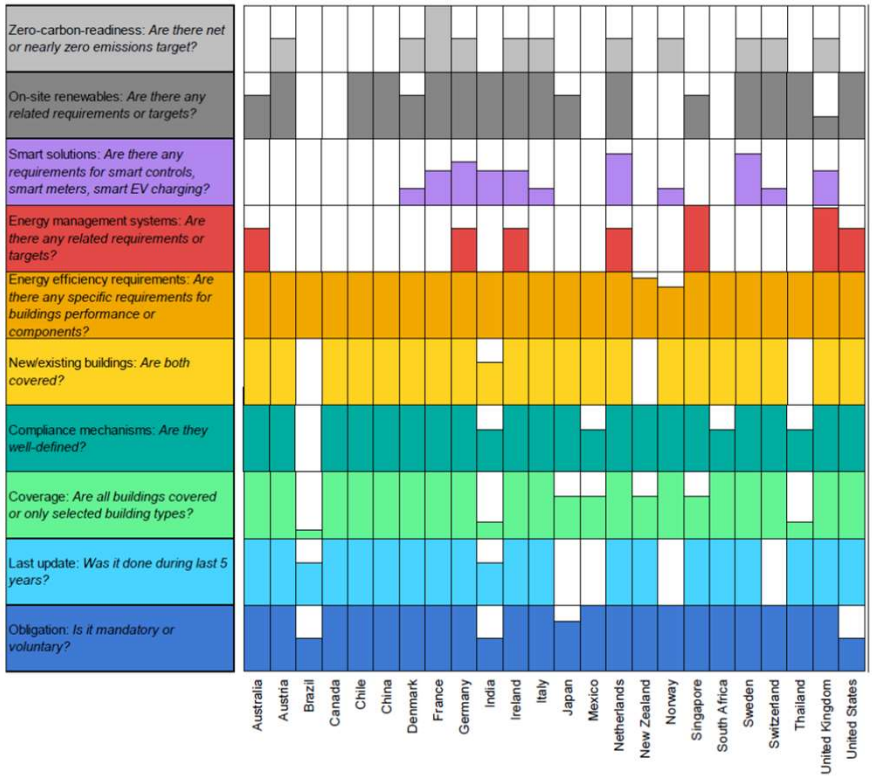
Policy action is ramping up across the world



In the last 10 years, 33 countries have newly introduced Minimum Energy Performance Standards (MEPS), while 13 countries have updated their MEPS in 2024 alone

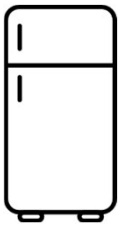
Comprehensive building energy codes can help improve efficiency and comfort in buildings, and lower bills

Overview of building energy code content analysis for selected countries

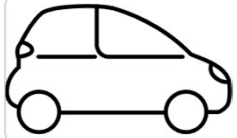


Building energy code content differs among countries

Examples of new policies enacted in 2024



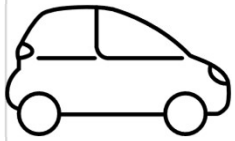
1. **Viet Nam** approved its 8th Power Development Plan, amending the Law on Using Energy Efficiency and Conservation (including MEPS)



2. New standards for vehicles in **Australia** and **Chile**

3. New policies for industrial motors in **India** and **South Africa**

Examples of strengthened policies in 2024



1. **Indonesia's JETP** launched the Energy Efficiency and Electrification Working Group, and worked with the IEA on fuel economy standards

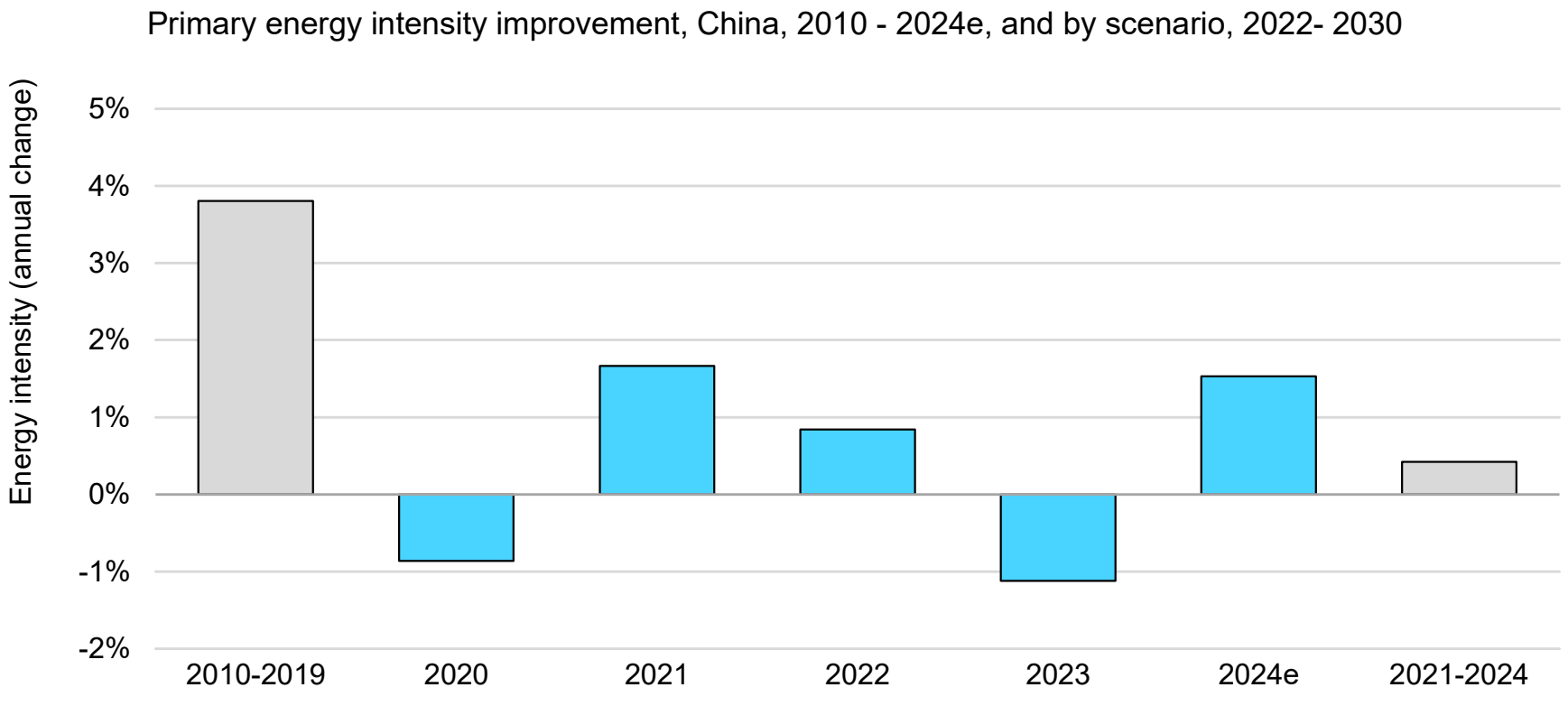
2. Action plan to raise efficiency targets in **China**

3. Building energy efficiency policies strengthened in **India**

Energy Efficiency 2024 – Region focus

China

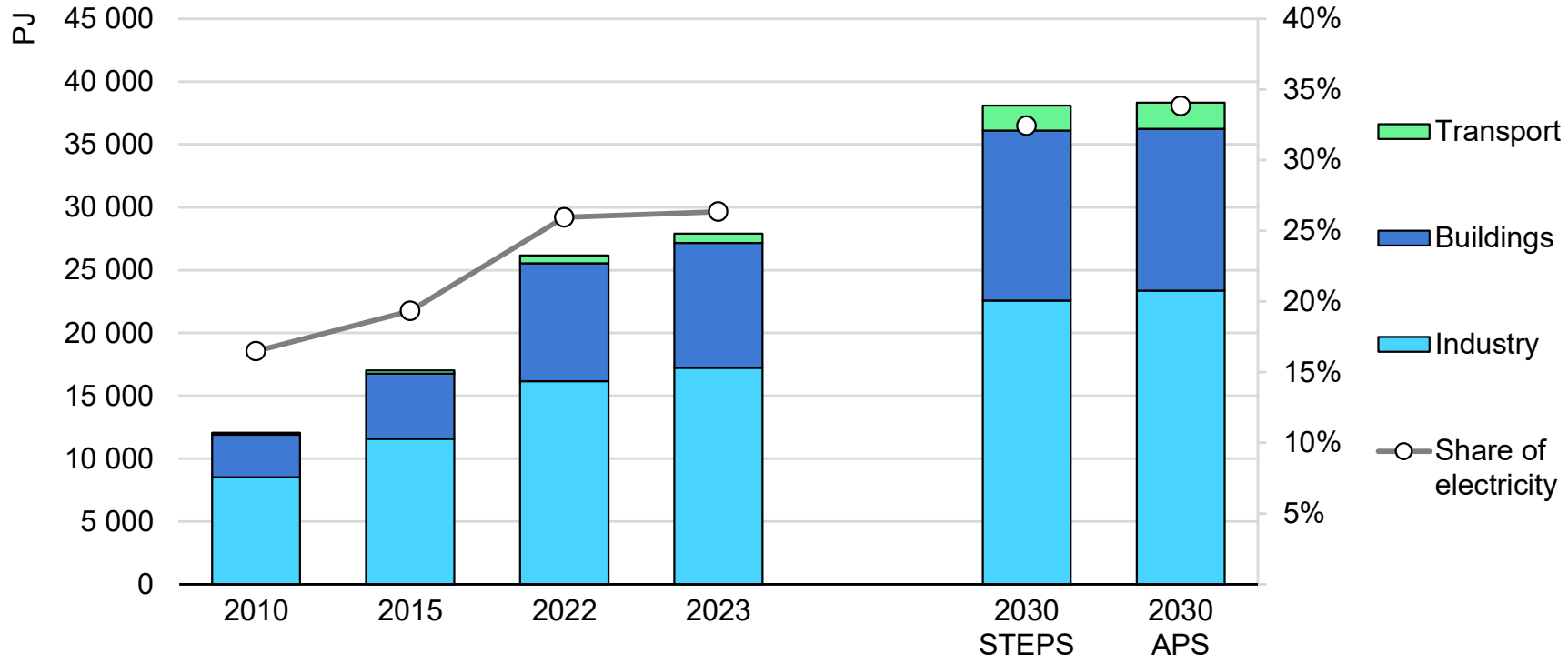
China aims to accelerate progress following a recent slowdown



China launched a special action plan with updated energy efficiency targets for 2024 and 2025

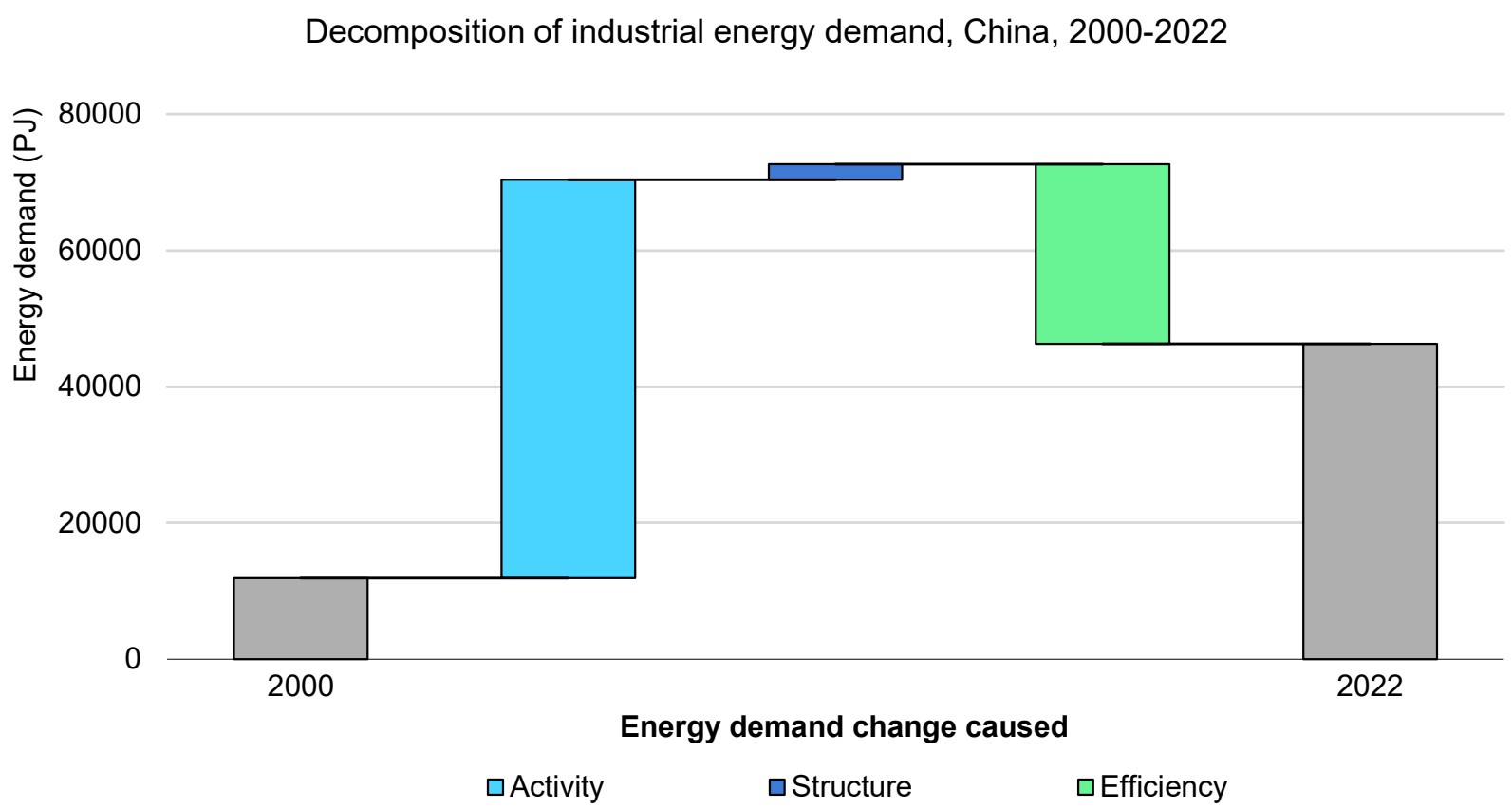
Electricity demand continues to increase rapidly

Electricity consumption by sector and share of electricity in total final consumption, China, 2010-2023, and by scenario, 2030



Under pressure to manage increasingly extreme peaks, the government now monitors electricity use in key regions more closely, incentivises greater interprovincial electricity trading, and promotes more use of energy storage

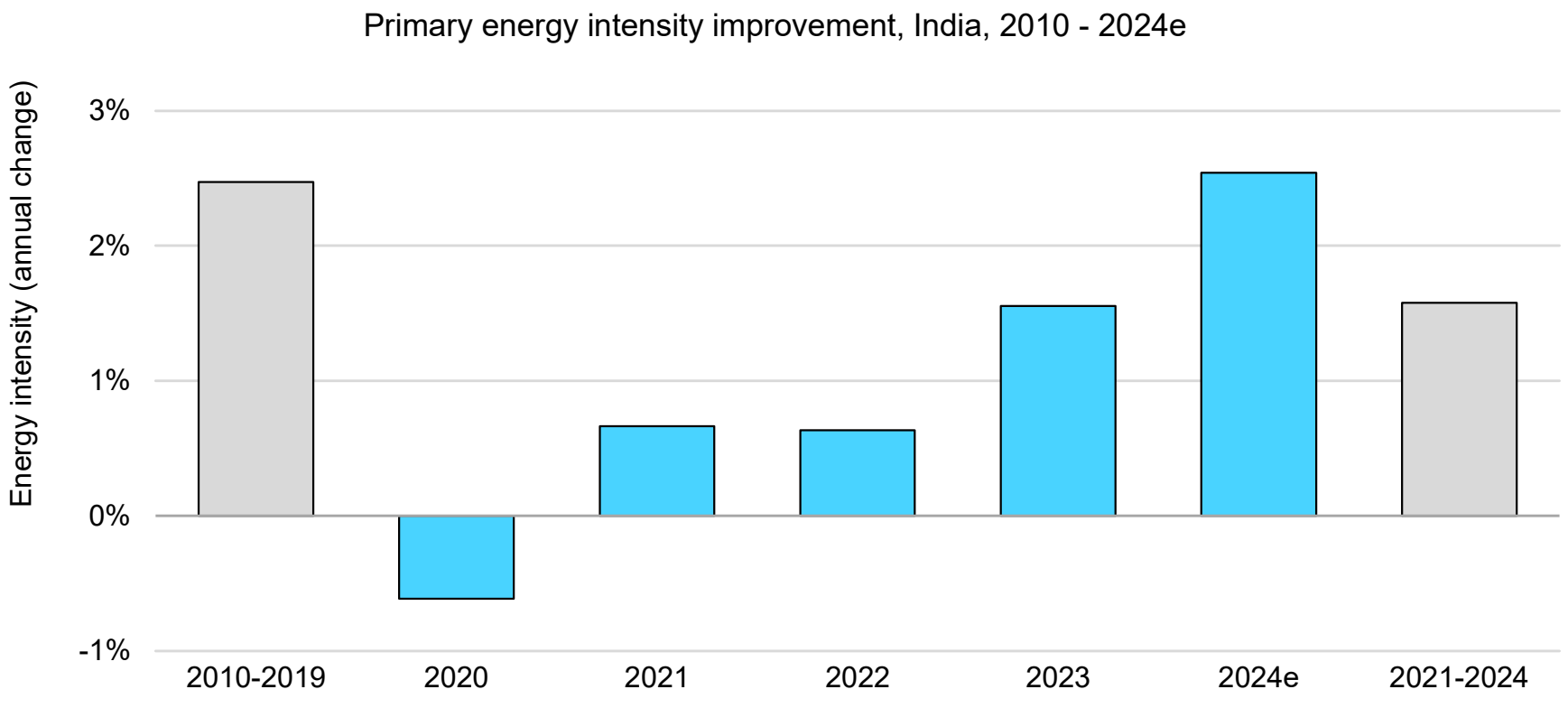
Efficiency is tempering growing industrial energy demand growth



Without energy efficiency, industrial energy demand in China would have been more than 50% higher

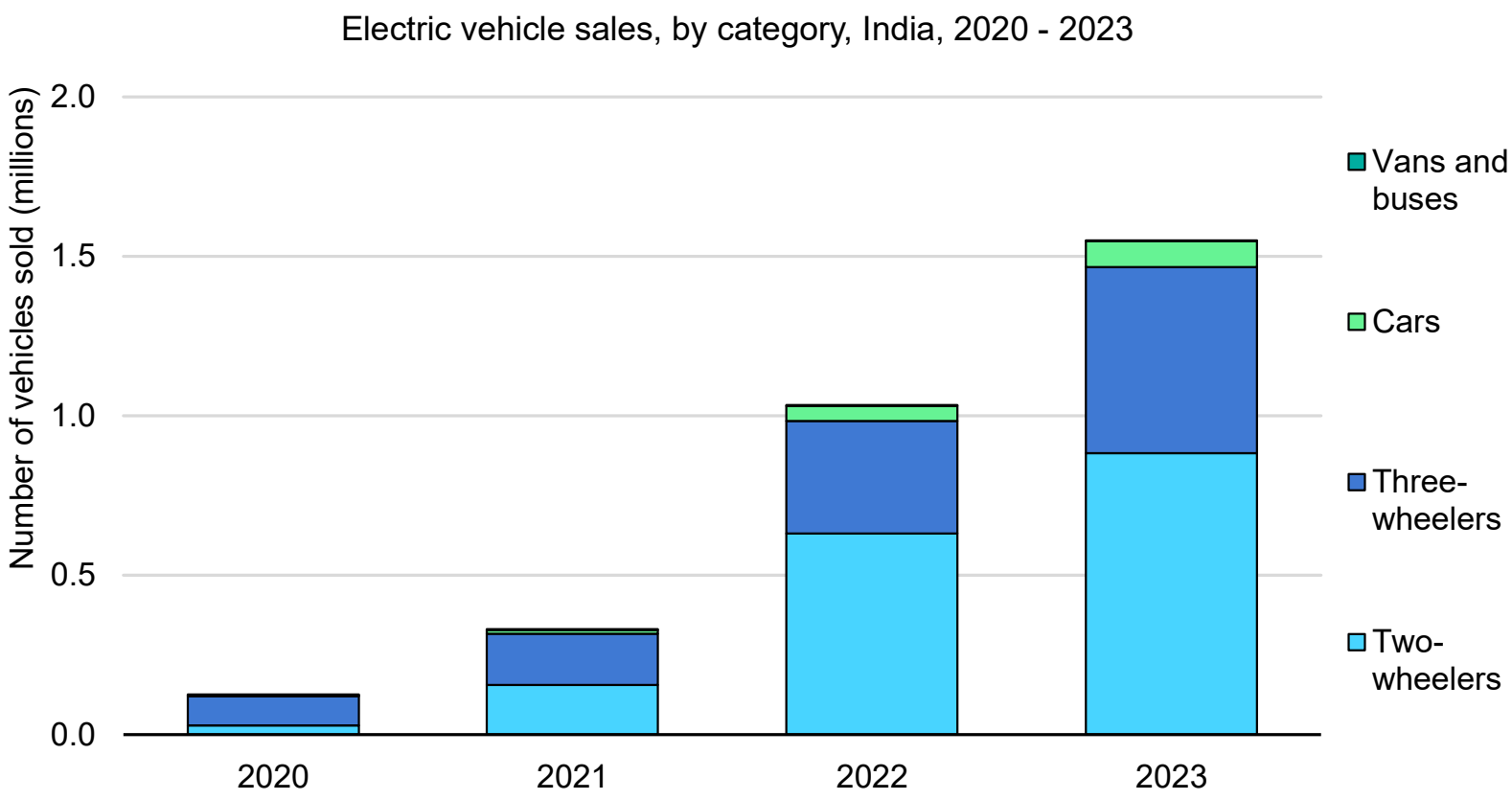
India

India posts strong energy efficiency improvements in 2024



The country is accelerating progress compared to the past four years

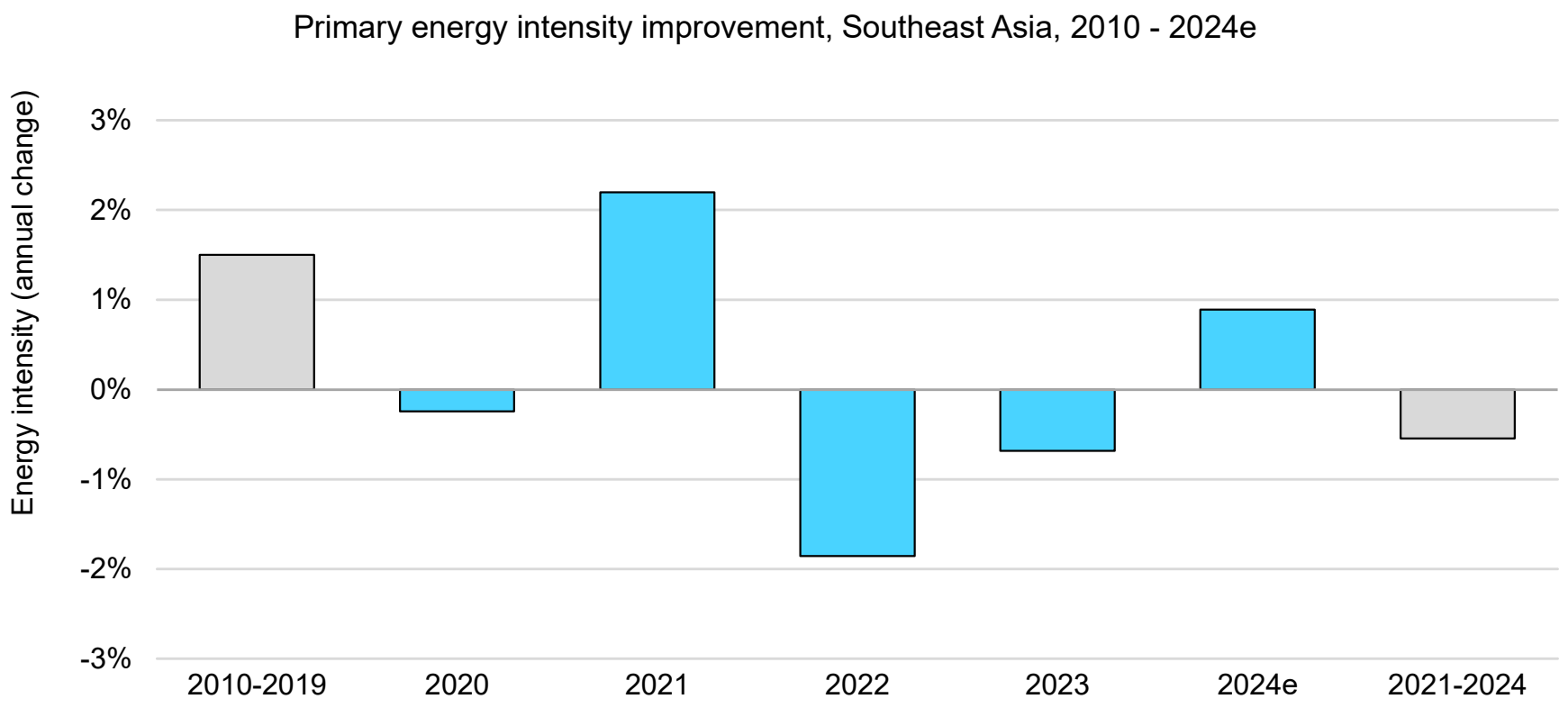
Two- and three-wheelers lead India’s electric vehicle momentum



Government policies also aim to boost local manufacturing

Southeast Asia

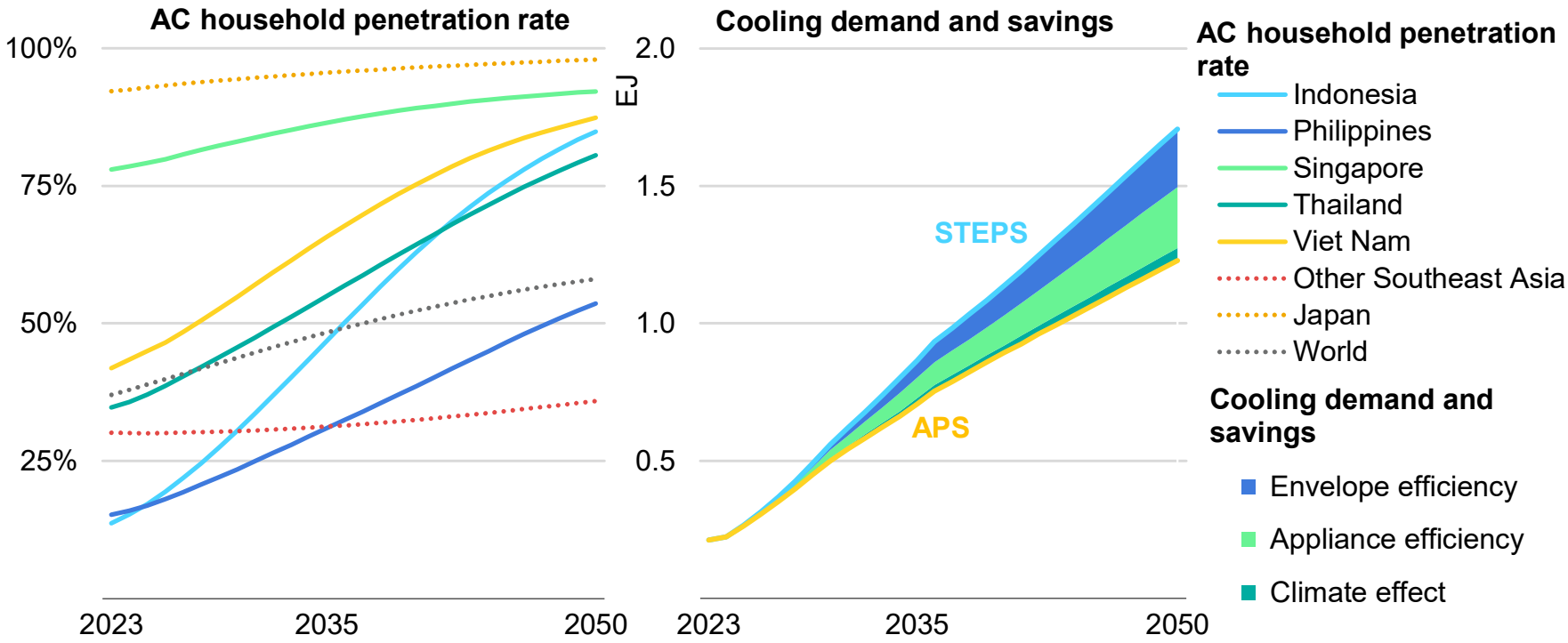
Energy efficiency progress sees a slight improvement in 2024



Since 2015, every ASEAN country has reached an annual energy intensity improvement of 4% at least once

Cooling demand is set to rise rapidly in the coming decades

Air conditioner penetration and cooling demand, Southeast Asia, 2023-2050, by scenario



Improving energy efficiency can temper some of this projected demand growth

IEA events on Energy Efficiency in 2025

12-13 June 2025
Brussels, Belgium

- IEA 10th Annual Global Conference on Energy Efficiency
- The IEA's most high-level event on energy efficiency to date

07-11 April 2025
Paris, France

- 20th Energy Efficiency Policy Training Week

www.iea.org/events

The IEA has opened its first regional office in Singapore

It strengthens collaboration with countries the region and shows the IEA's commitment to global energy transitions

Part Two
Tracking the Global Target

The Global Energy Efficiency Doubling Target agreed at UAE COP28

United Nations FCCC/PA/CMA/2023/16/Add.1

Framework Convention on Climate Change

Distr.: General
15 March 2024

Outcome of the first global stocktake

28. *Further recognizes* the need for deep, rapid and sustained reductions in greenhouse gas emissions in line with 1.5 °C pathways and *calls on* Parties to contribute to the following global efforts, in a nationally determined manner, taking into account the Paris Agreement and their different national circumstances, pathways and approaches:

(a) Tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030;

(b) Accelerating efforts towards the phase-down of unabated coal power;

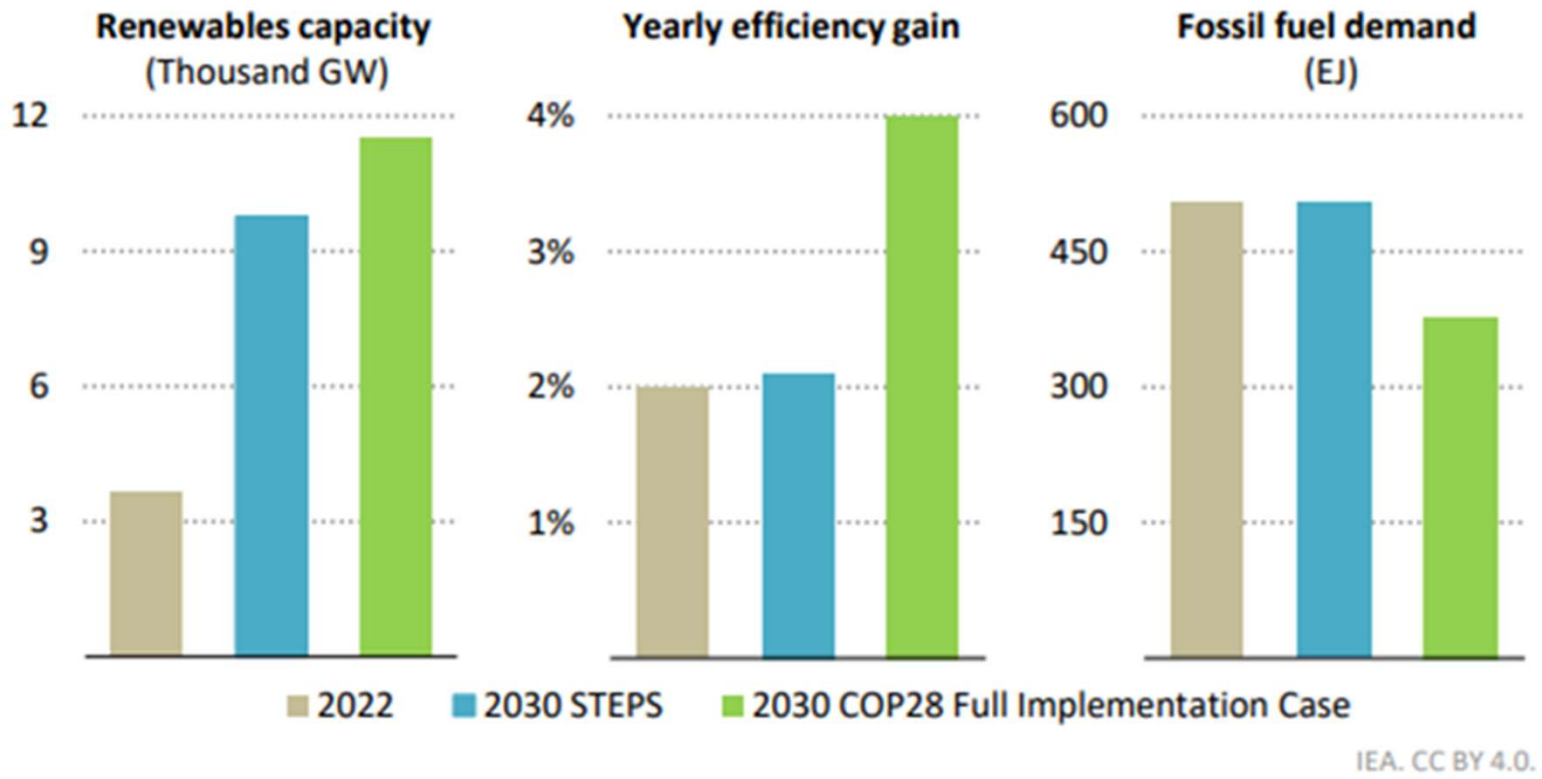
(c) Accelerating efforts globally towards net zero emission energy systems, utilizing zero- and low-carbon fuels, well before or by around mid-century;

(d) Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science;

Source: Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its fifth session, held in the United Arab Emirates from 30 November to 13 December 2023.

$$\text{Energy Intensity} = \frac{\text{Total Primary Energy Supply}}{\text{GDP}}$$

Faster progress on efficiency is key to achieving climate goals

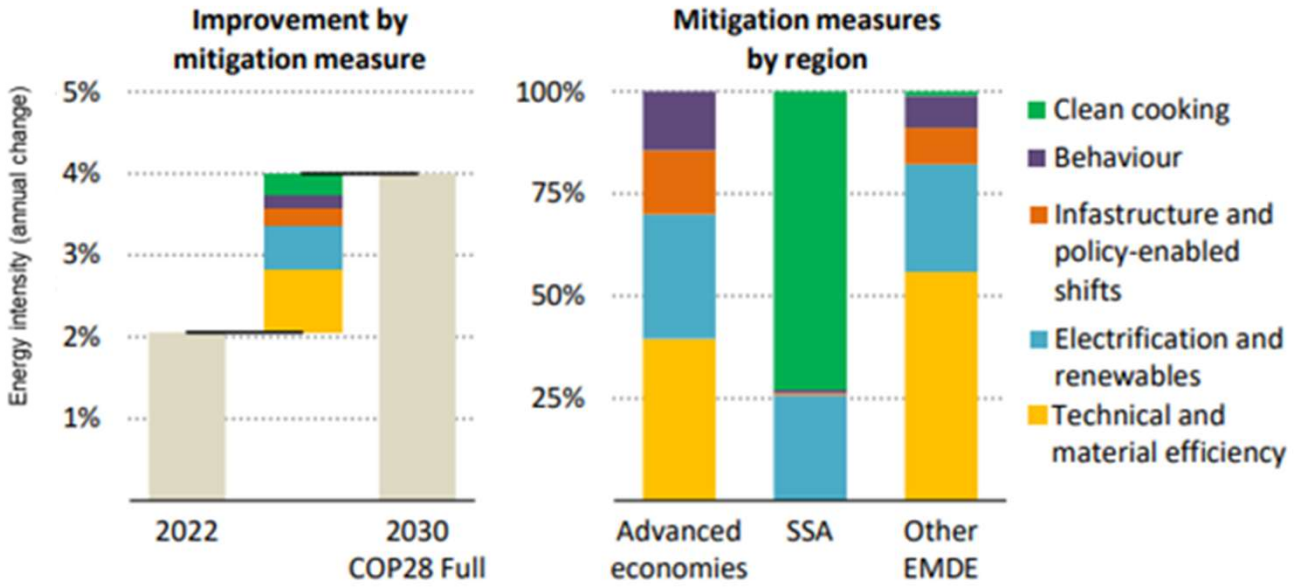


Stated policies put the world close to the goal of tripling renewables capacity
But fall far short on energy efficiency and the transition away from fossil fuels

Source: IEA From Taking Stock to Taking Action

How to double the rate of efficiency improvement?

Annual rate of primary energy intensity improvement, 2022 and 2030, by mitigation measure



Doubling the rate of efficiency gains requires a comprehensive approach
Though the mix of measures will differ among countries

Source: IEA From Taking Stock to Taking Action

Note: COP28 Full = COP28 Full Implementation Case; EMDE = emerging market and developing economies; SSA = sub-Saharan Africa. Other EMDE refers to emerging market and developing economies outside of sub-Saharan Africa.

Track efficiency progress for 8 regions and over 140 countries

How is the world tracking towards the COP28 doubling efficiency goal?

What is my country's historical level of energy efficiency progress?

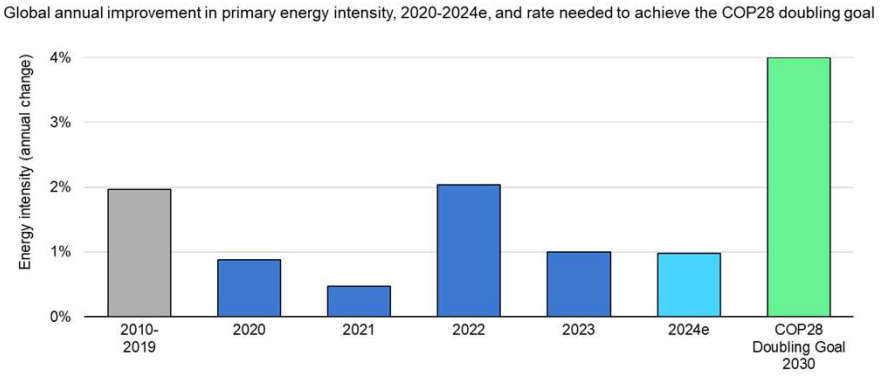
How does my country compare with similar countries in my region?

What might be an appropriate level of progress to contribute to the COP28 2030 global doubling goal?

- First of its kind energy efficiency tracking data up to 2024 and main IEA Scenarios to 2030
  - Energy intensity progress
  - Primary energy demand (TES)
  - Final energy consumption (TFC)
  - Electrification progress
  - Electricity consumption
- Energy efficiency investment trends
  - Efficiency financing solutions repository

Energy Efficiency Progress Tracker

Tracking energy efficiency progress for all regions and countries



Access this, and more: https://www.iea.org/data-and-statistics/data-tools/energy-efficiency-progress-tracker