Tracking energy transitions at IEA

Agnieszka KOSCIELNIAK,

Statistics Manager, Energy demand data and efficiency indicators

APEC Expert Groups joint meeting, 9 April 2025

International Energy Agency

Content

- About IEA
- Work of IEA on monitoring energy transitions – selected examples
- Conclusion

About IEA

A bit of history

- Created in 1974 after the first oil shock to:
  - help ensure reliable energy supplies
  - promote energy efficiency
  - and encourage technological research and innovation

A broader mission for the IEA

Today, we have a strong Ministerial mandate to accelerate **people-centred clean energy transitions** worldwide that ensure secure and affordable energy supplies for all.

Our 2015 modernization strategy:

1. **"Open door policy"** allowed the IEA to deepen its collaboration with emerging and developing economies.
2. **Expanded energy security** beyond oil to natural gas and electricity.
3. Greater focus on **clean energy technology**, including energy efficiency.

The IEA Family

Member countries

Accession countries

Association countries (since 2015)

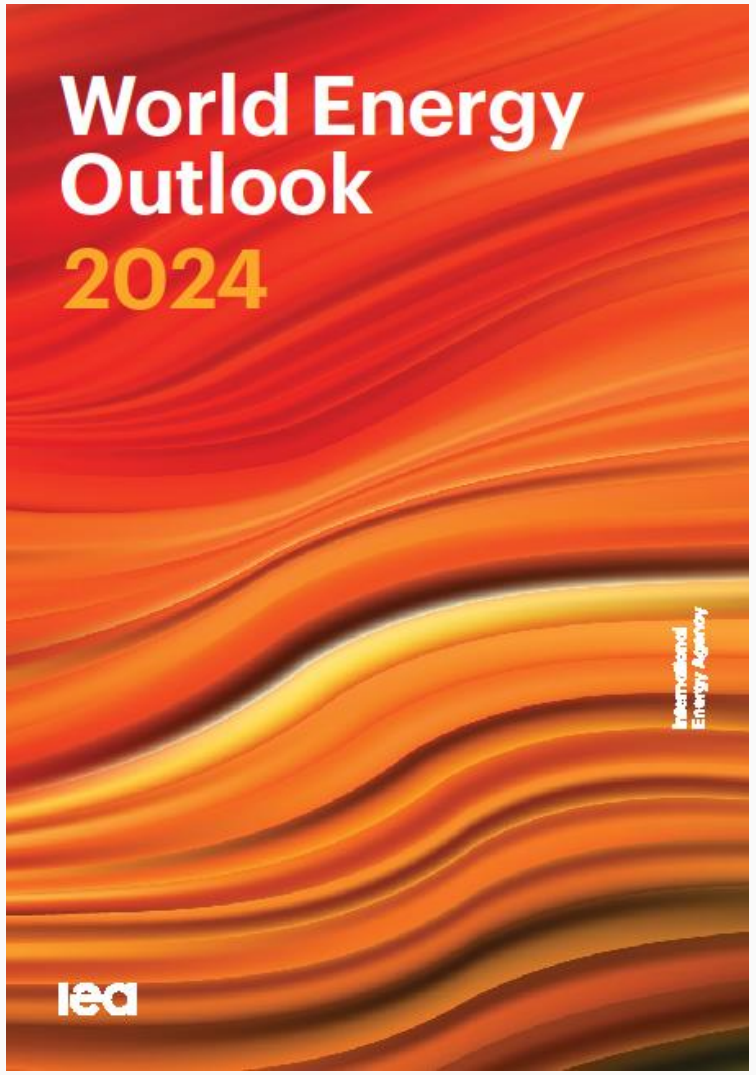
75%
of global energy consumption

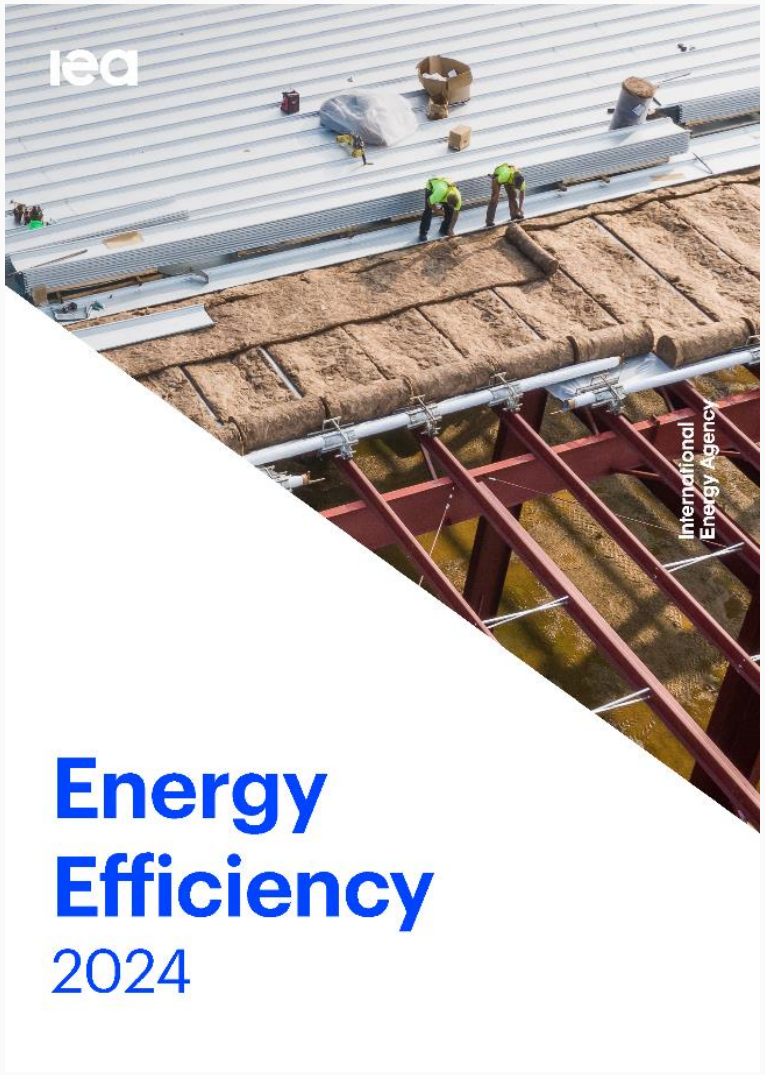
64.4%
of global energy production

77%
of global CO2 emissions

87%
of global clean energy investment

Putting security and sustainability at the heart of our analysis…

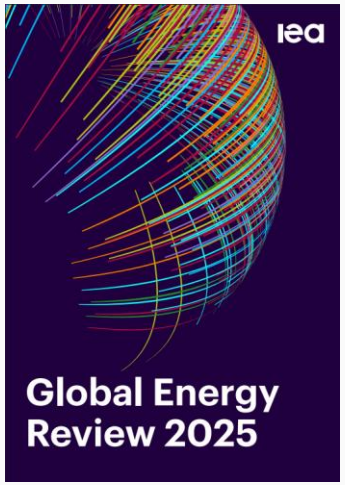


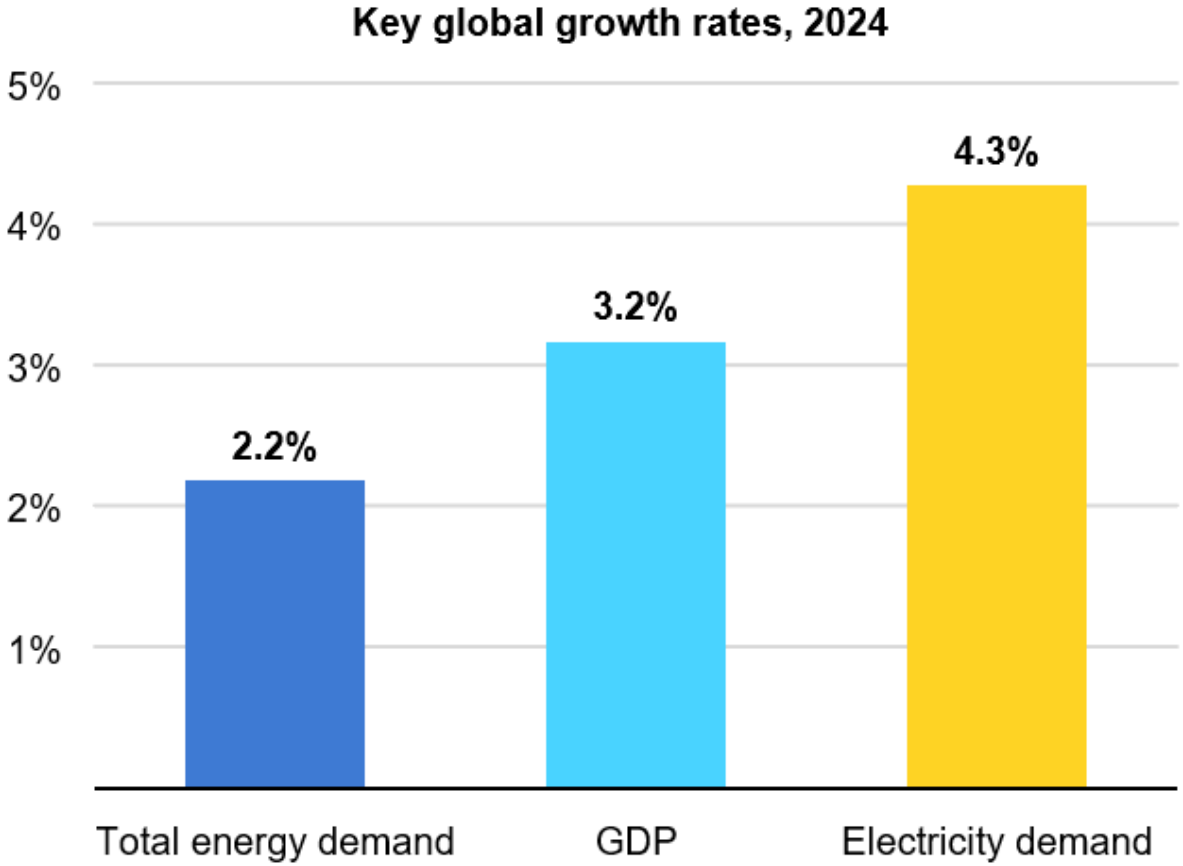


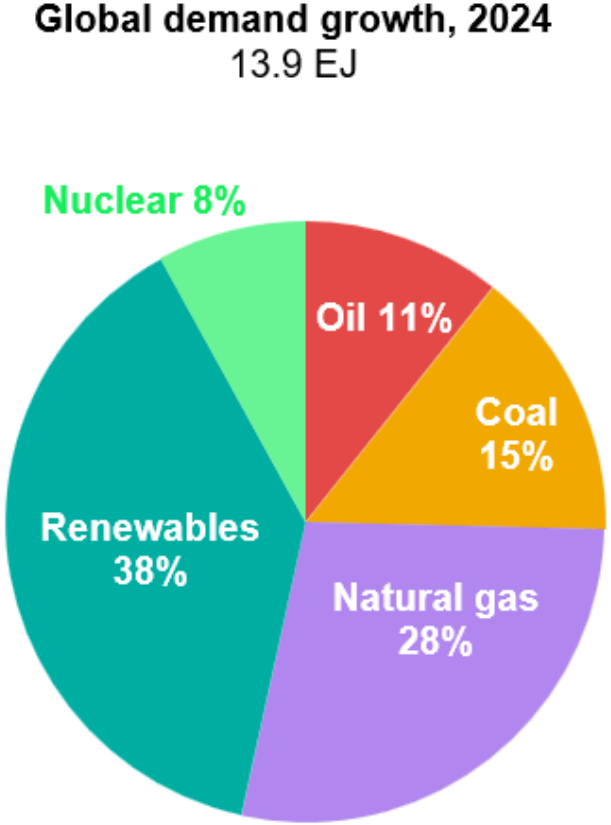
Work of IEA on monitoring energy transitions – selected examples

Global assessment of 2024 trends across the energy sector

- Covers energy demand, supply, the uptake of new energy technologies and energy-related carbon dioxide (CO2) emissions.

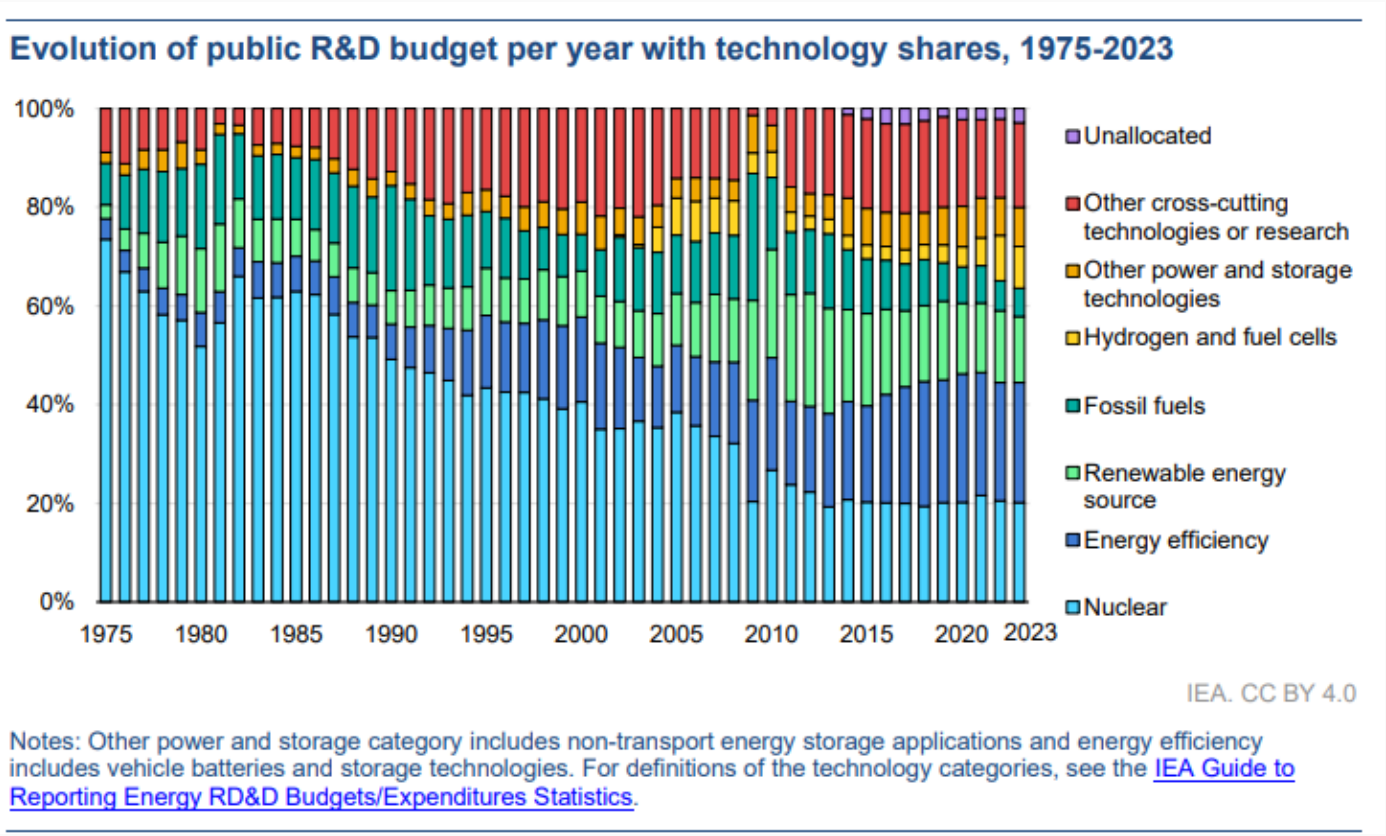






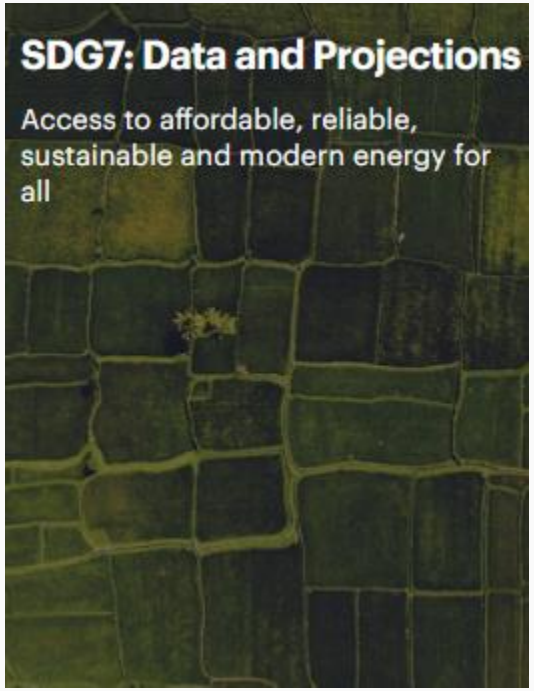
A unique global review of progress and challenges in energy technology innovation.

- Designed to inform the global energy innovation agenda.
  - Assessment of recent progress and emerging challenges in energy technology innovation, drawing on over 150 innovation highlights from past year.
  - Trends analyses in public and corporate R&D spending, venture capital flows, and technology demonstration efforts.

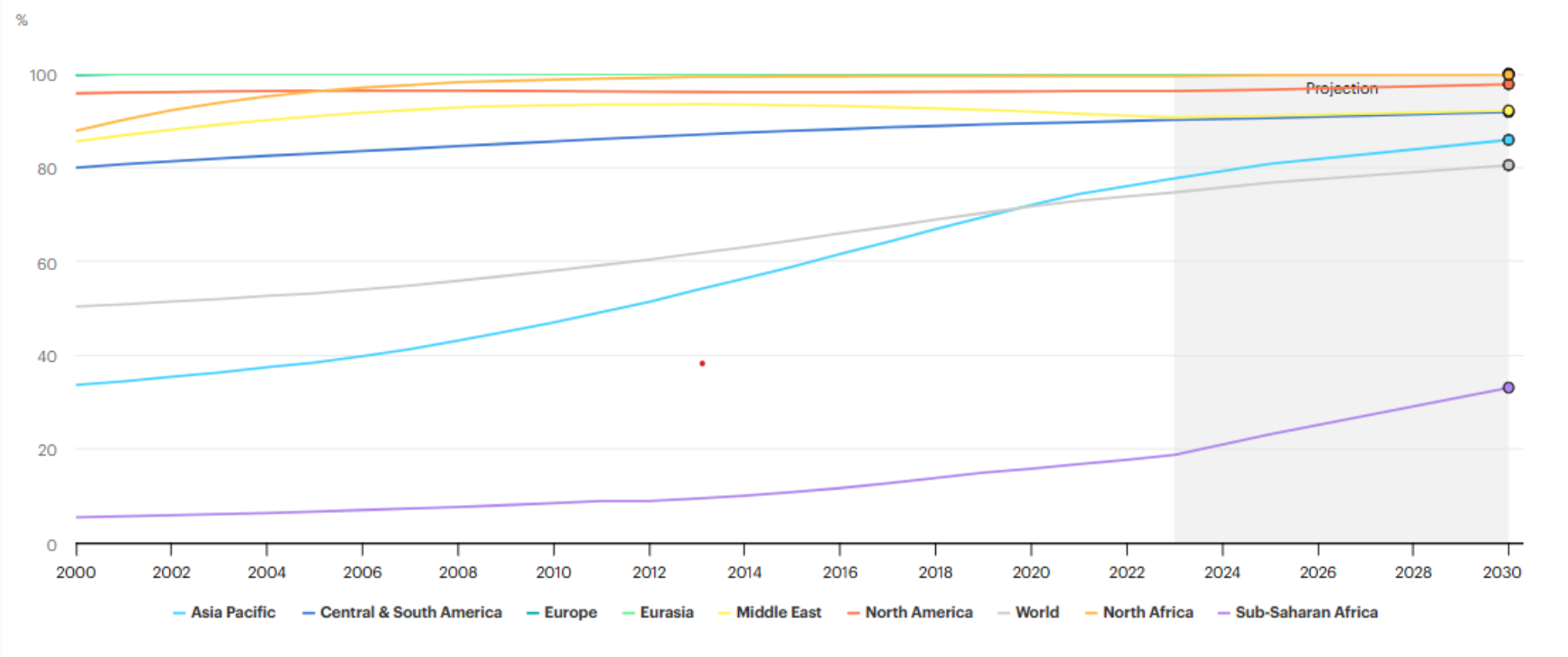


SDG 7: Data and Projections

- The IEA is one of five lead custodian agencies for tracking SDG 7 and is responsible for SDG 7.2 on renewable energy and SDG 7.3 on energy efficiency while also tracking SDG 7.1 on energy access.
- IEA trackers provide long-term projections for all the SDG7 indicators.



Share of population with access to clean cooking in the Stated Policies Scenario



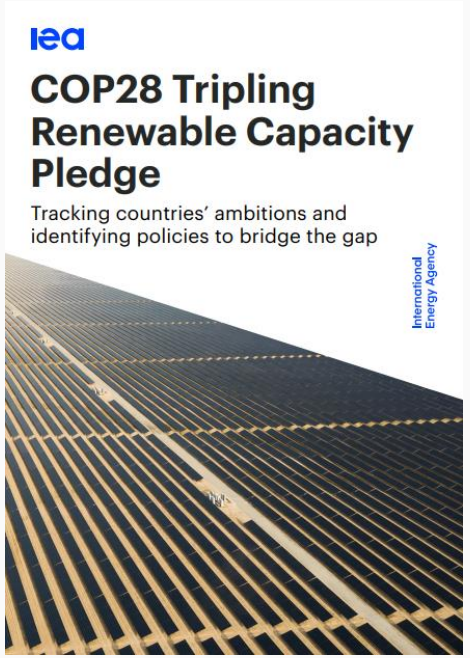
IEA resources to track progress towards COP28 energy goals

Renewable Energy Progress Tracker

Explore electricity, heat and renewable fuels data from Renewables 2024 and renewables ambitions by 2030

Energy Efficiency Progress Tracker

Tracking energy efficiency progress for all regions and countries



Doubling global progress on energy efficiency

United Nations
Framework Convention on Climate Change

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

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.

COP28 final text:

Calls on Parties to contribute to … doubling the global average annual rate of energy efficiency improvements by 2030

Tracking progress toward the COP28 goal

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?

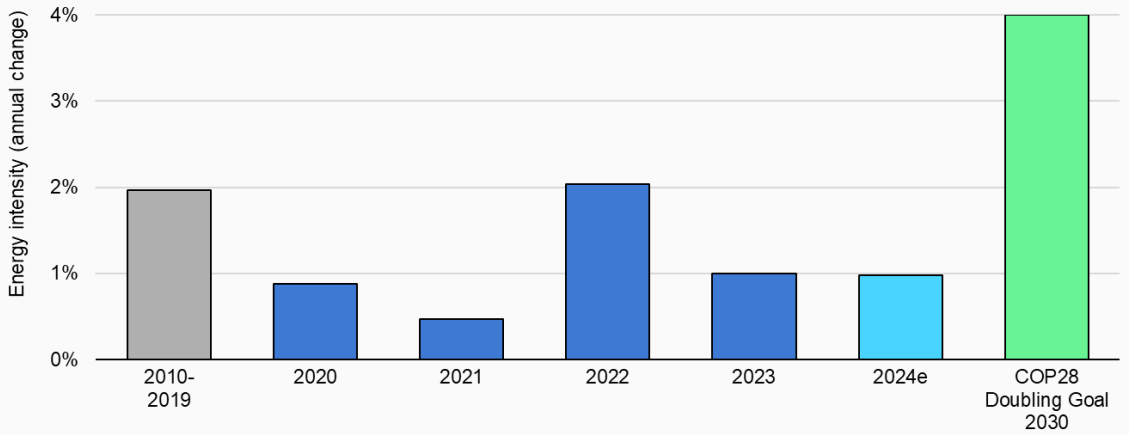
What might be an appropriate level of progress to contribute to the COP28 2030 global doubling goal?

- 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

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



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

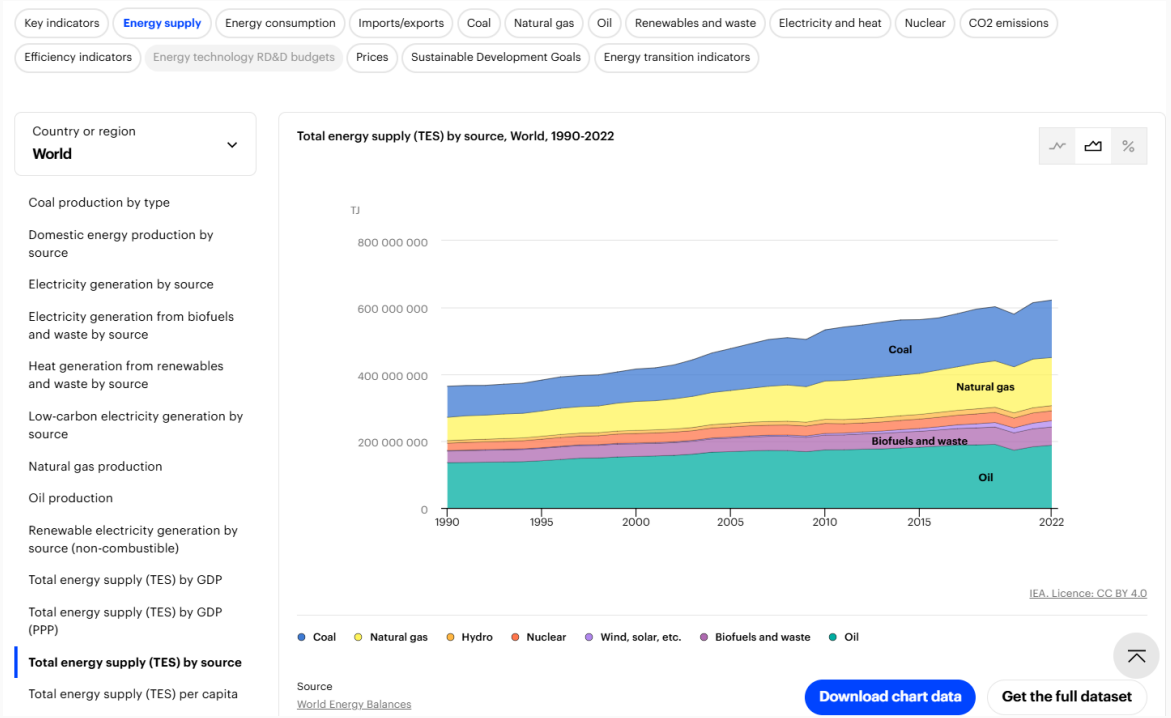
Track efficiency progress for 8 regions and over 140 countries

Energy statistics are fundamentals for analyses and policy tracking

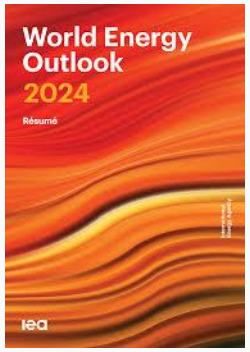
Explore our data portfolio:
https://www.iea.org/data-and-statistics

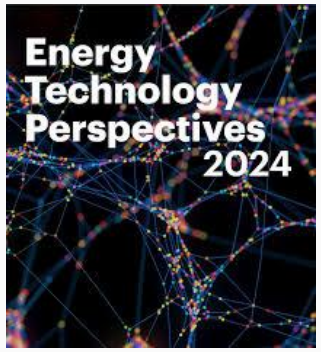
Data explorers:

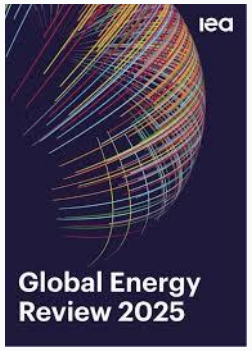
- Energy Statistics Data Browser
- Greenhouse Gas Emissions from Energy
- Energy End-uses and Efficiency Indicators
- End-Use Prices
- Energy Technology RD&D Budgets
- Monthly Electricity Statistics

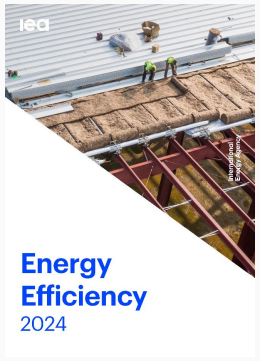


Data support for the Agency:



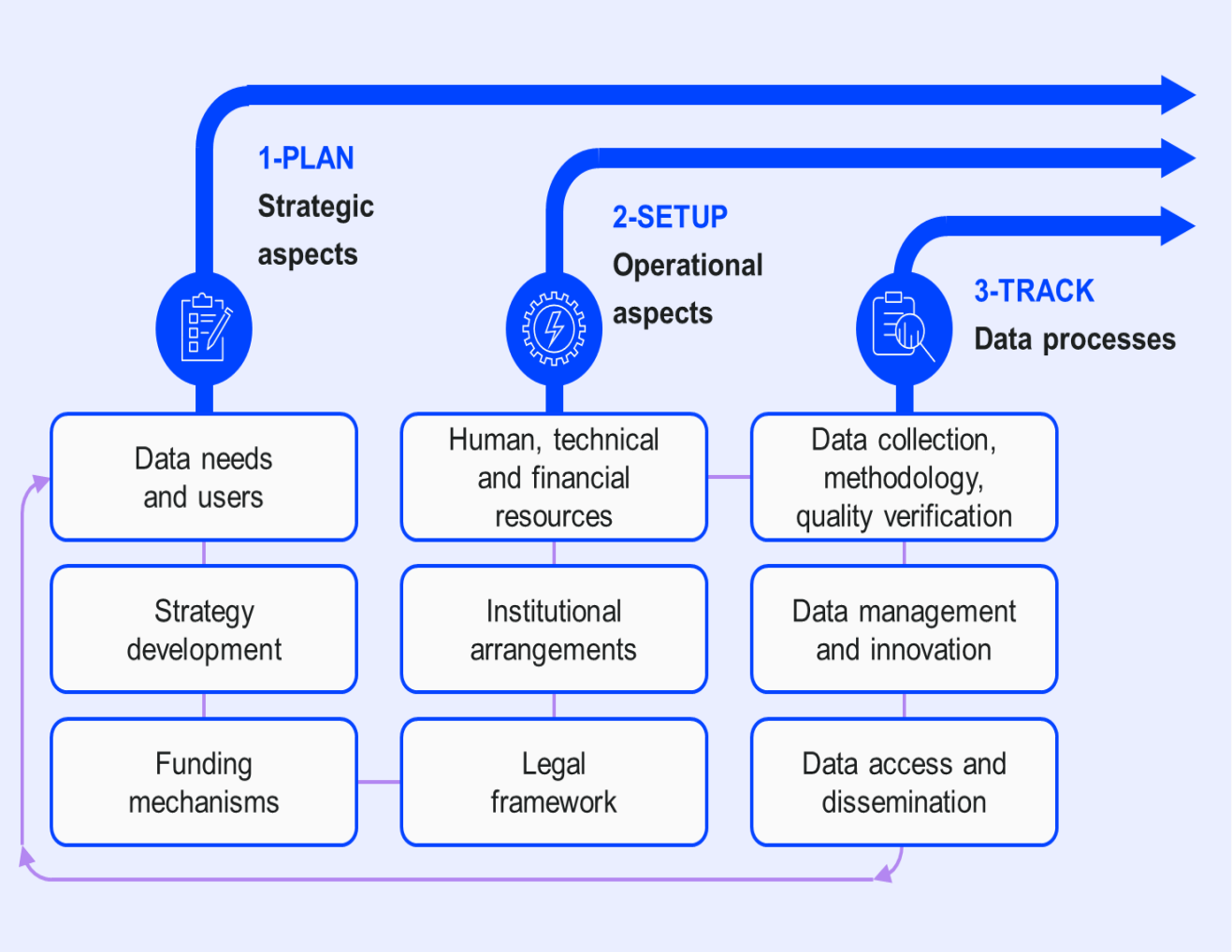






Conclusion

IEA proposes bilateral collaboration to improve national statistics



Based on IEA's **international collaborative experience**, including a **consultation** of several country data experts worldwide

https://www.iea.org/reports/designing-an-energy-statistics-roadmap

The importance of tracking energy transition

- ✓ IEA is closely tracking progress towards energy transition with a variety of reports and tracking tools for all fuels and technologies.
- ✓ The IEA is the main source of information for anyone trying to understand energy landscape: from sources, to policies in place, stakeholders mapping, costs of energy.
- ✓ Energy statistics are fundamental for evidence-based policymaking and lack of sound data hinder the capabilities for policy planning and monitoring.
- ✓ IEA has a variety of tools and expertise to support national administrations to improve their data either bilaterally and regionally across a broad portfolio of energy data topics.
- ✓ Regular communication between IEA and national administration is essential to ensure effective cooperation.
- ✓ IEA offers a broad range of support actions to improve data, which can be tailored to the requests we receive. Of course, this is always dependent on available resources, but improving data collection is a top priority for us, and we remain fully committed to supporting our partner countries in this area.