THE BREAKTHROUGH AGENDA REPORT **2024**

BREAKTHROUGH AGENDA

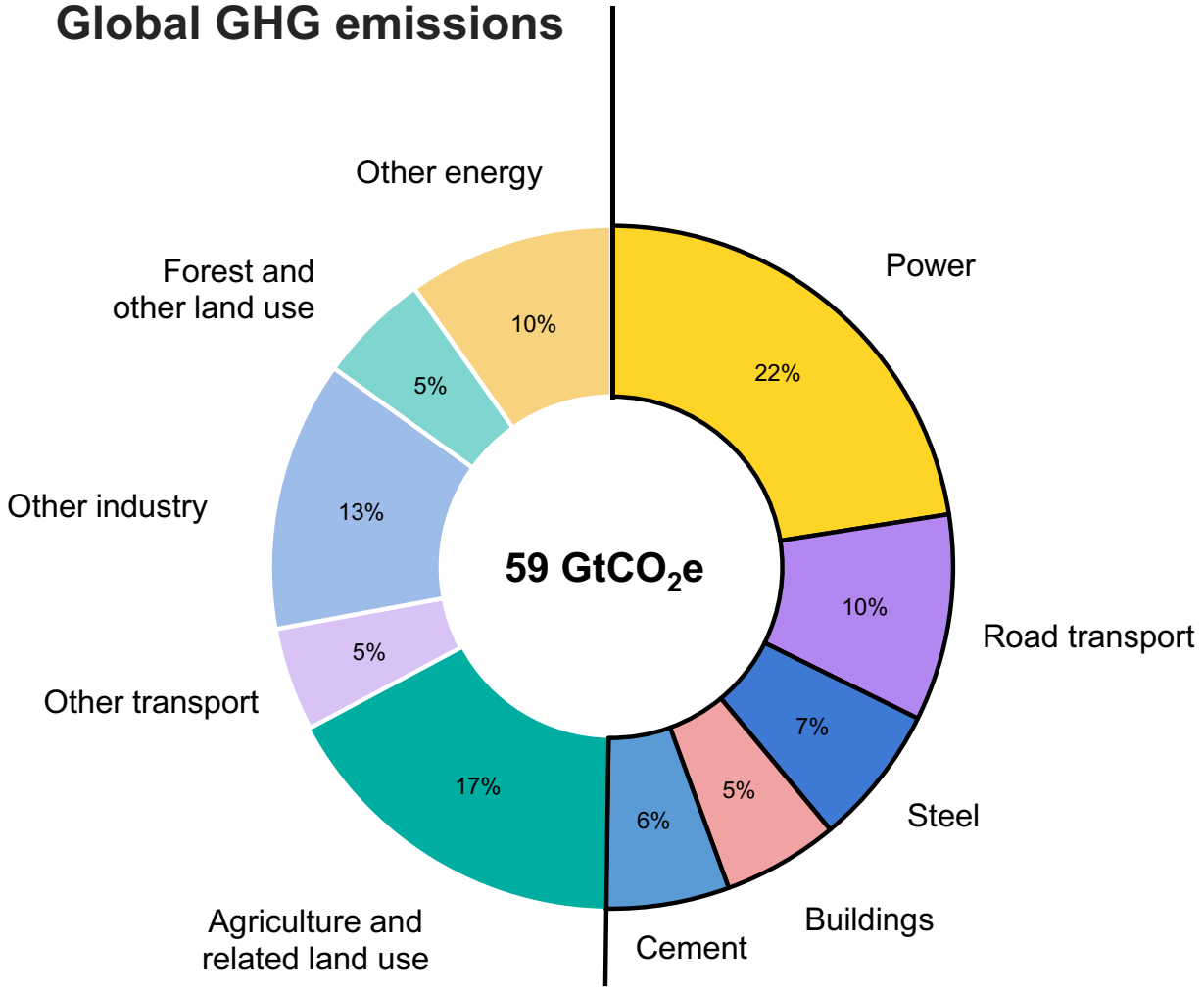
Accelerating Sector Transitions Through Stronger International Collaboration

IEA

UN Climate Change High-Level Champions
in collaboration with:

Marrakech Partnership | Global Climate Action

Stronger international collaboration in sectors

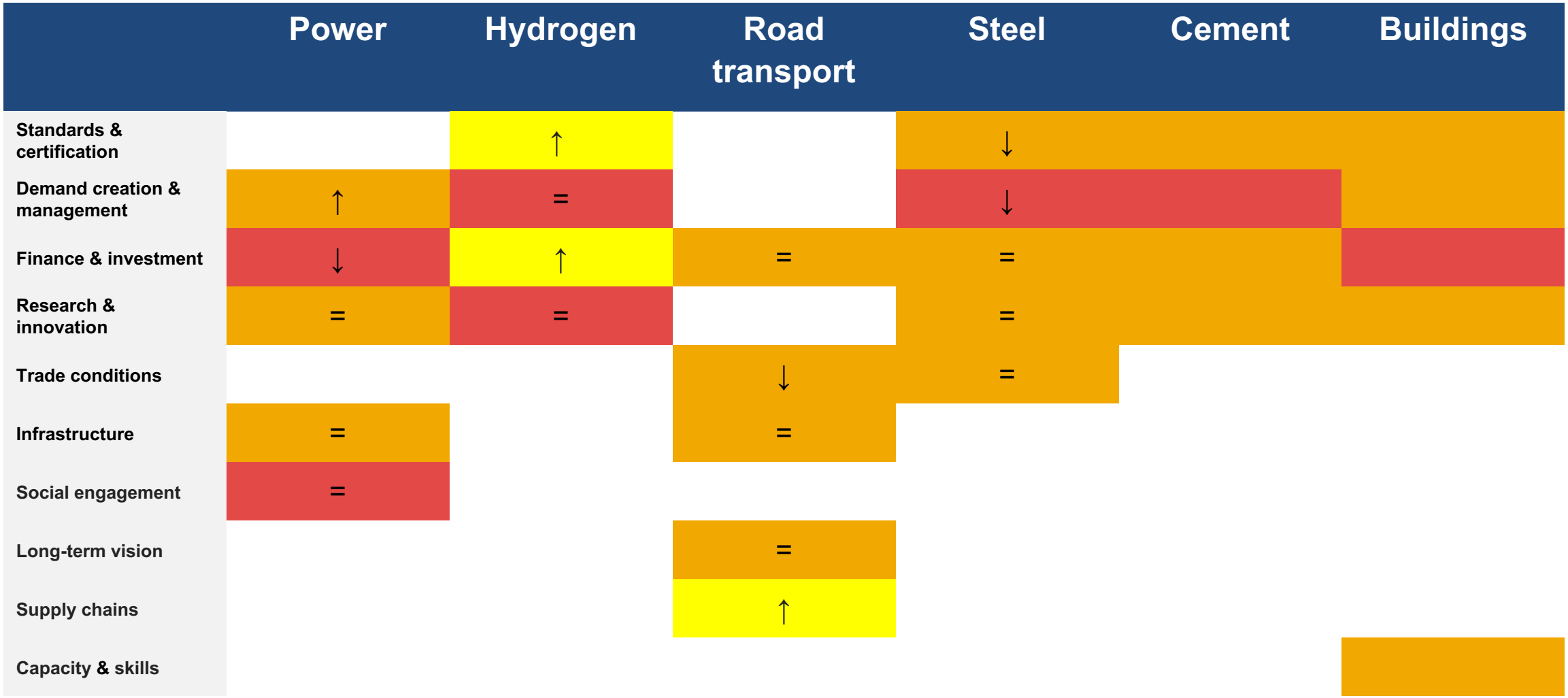


The **Breakthrough Agenda Report** covers 6 major emitting sectors, accounting for nearly half of global GHG emissions.

Stronger **international collaboration** is essential to –

- Finance the clean energy transition
- Move net-zero compatible technologies to market on a global scale
- Create new markets for low-emissions materials and fuels
- Overcome obstacles to widespread clean energy deployment

Moderate progress has been made since last year



Notes: red = minimal progress; orange = moderate progress; yellow = good progress; green = strong progress; white = no recommendation in this area for this sector. The arrows indicate relative progress compared to last year's assessment in the 2023 Breakthrough Agenda Report. "↑" indicates an improved assessment; "↓" indicates a downward assessment; "=" indicates the same assessment.

Laying the foundation for clean energy

- The COP 28 goal to triple renewable capacity and double energy efficiency by 2030 marked a positive signal in the **power sector**.

- The **hydrogen sector** has made good progress in the effort to establish globally harmonised standards.

- Pilot projects to support the traceability and sustainability of battery supply chains in the **road transport sector** through battery passports.

- In the **steel** and **cement sectors**, countries are moving towards common ground on definitions and measurement methodologies.

- The Global Cooling Pledge was launched in the **buildings sector.**

POWER

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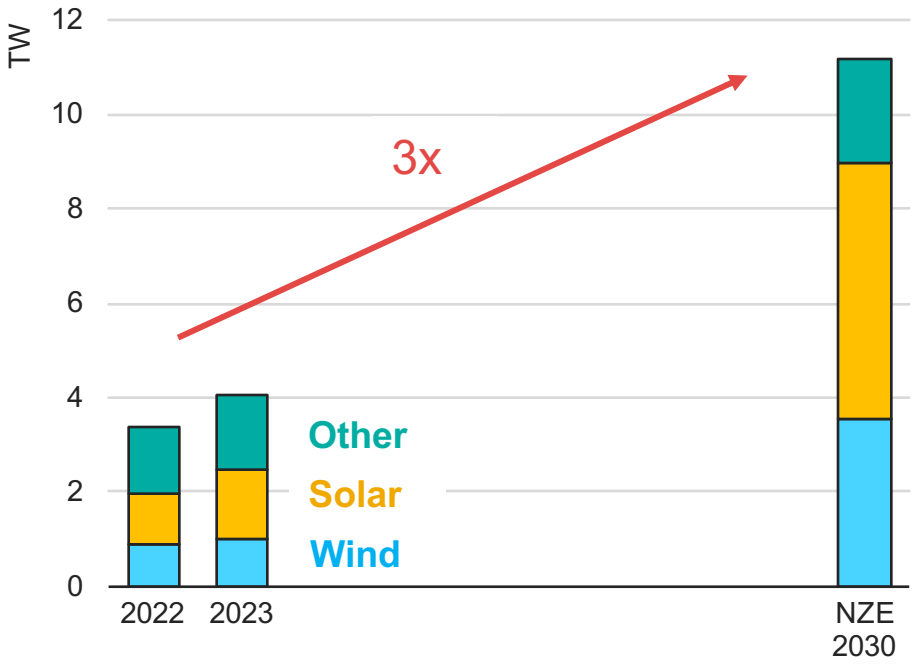
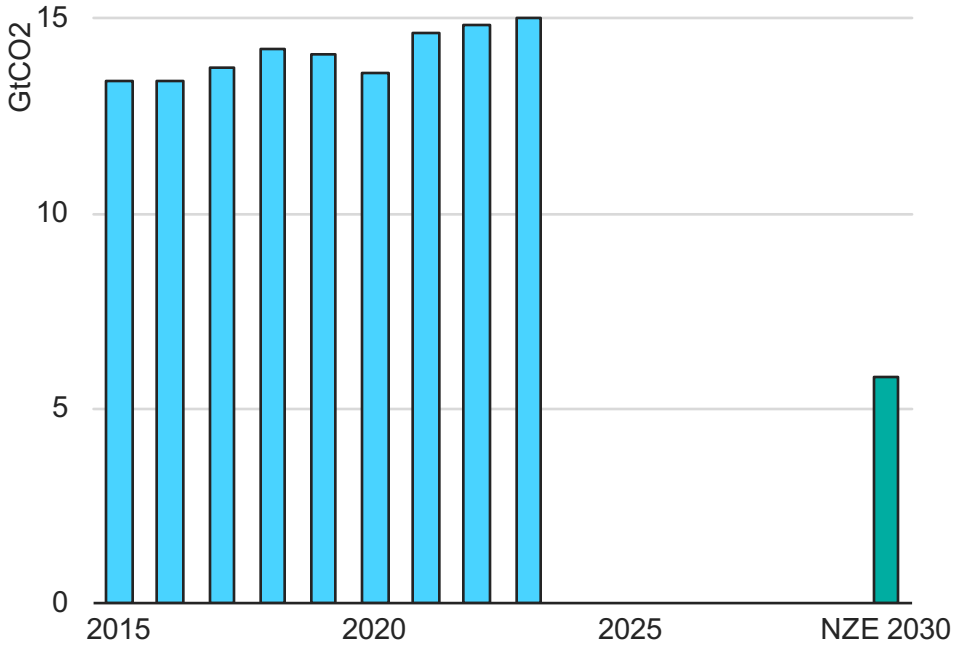
Deployment of solar PV & wind, IEA NZE 2030



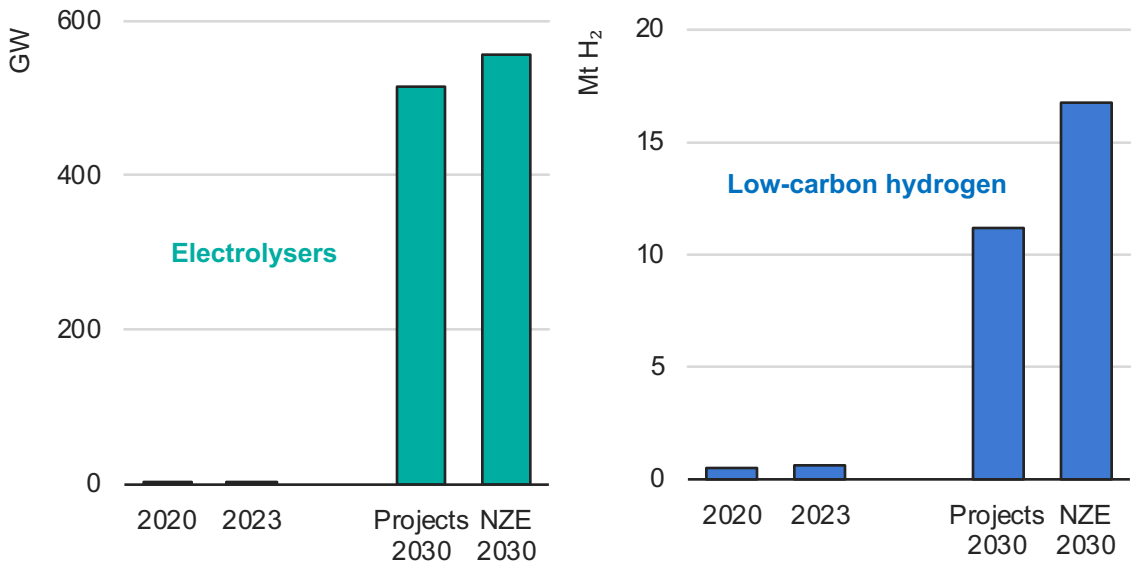
Power sector emissions, IEA NZE 2030



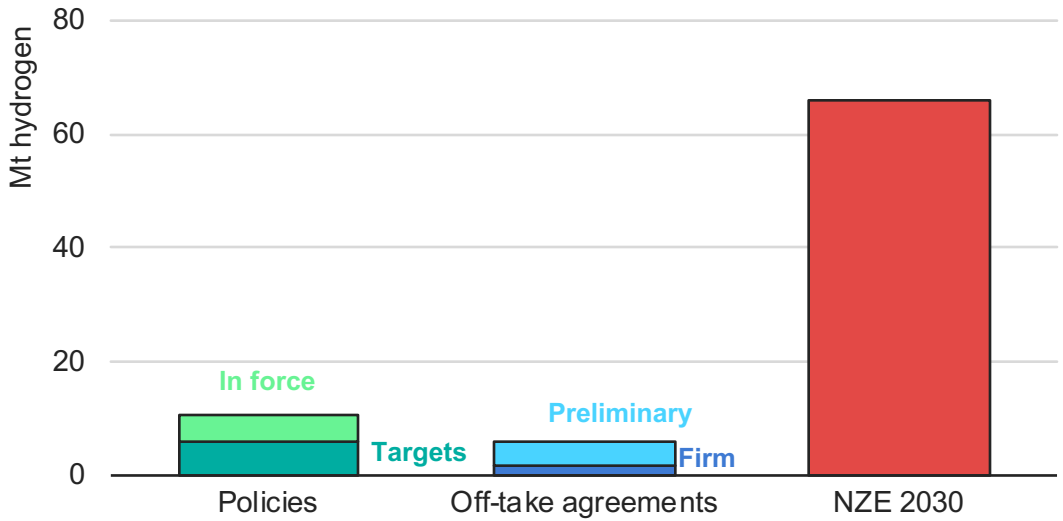
- The COP 28 goal of tripling renewable energy capacity and doubling the rate of energy efficiency improvements marked an important signal of agreement on the necessary pace of transition in the power sector.
- **Further efforts** are required to reduce the cost of capital of projects in emerging economies and target support in fossil fuel-dependent communities to create local jobs and skills

HYDROGEN

Deployment of renewable & low-carbon hydrogen projects, IEA NZE 2030



Demand for renewable & low-carbon hydrogen, IEA NZE 2030



- There has been **good progress** as countries worked together to move forward discussions on standardisation and scale up financial support for new projects.
- **Further efforts** are required to collectively agree on demand creation targets and move forward on key demonstration projects.

ROAD TRANSPORT

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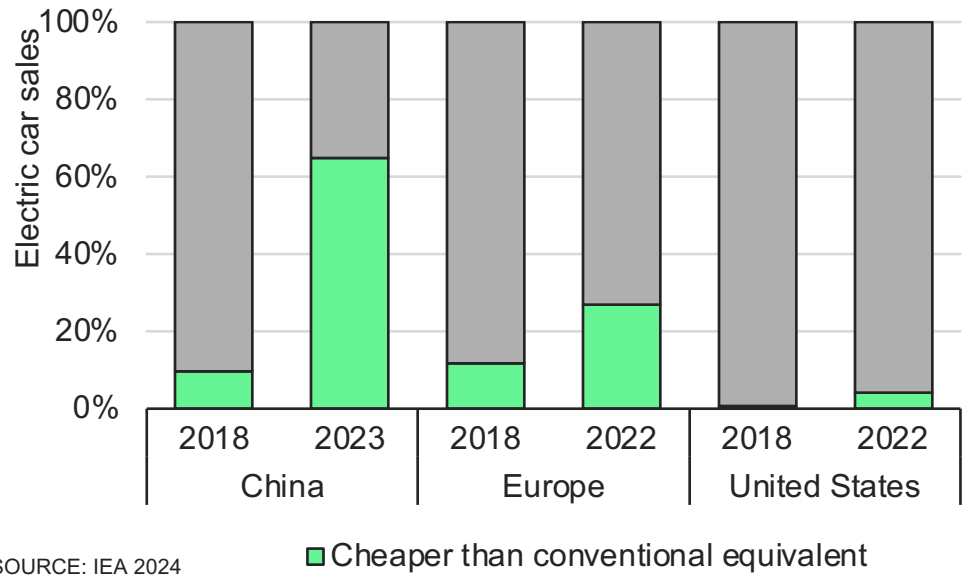
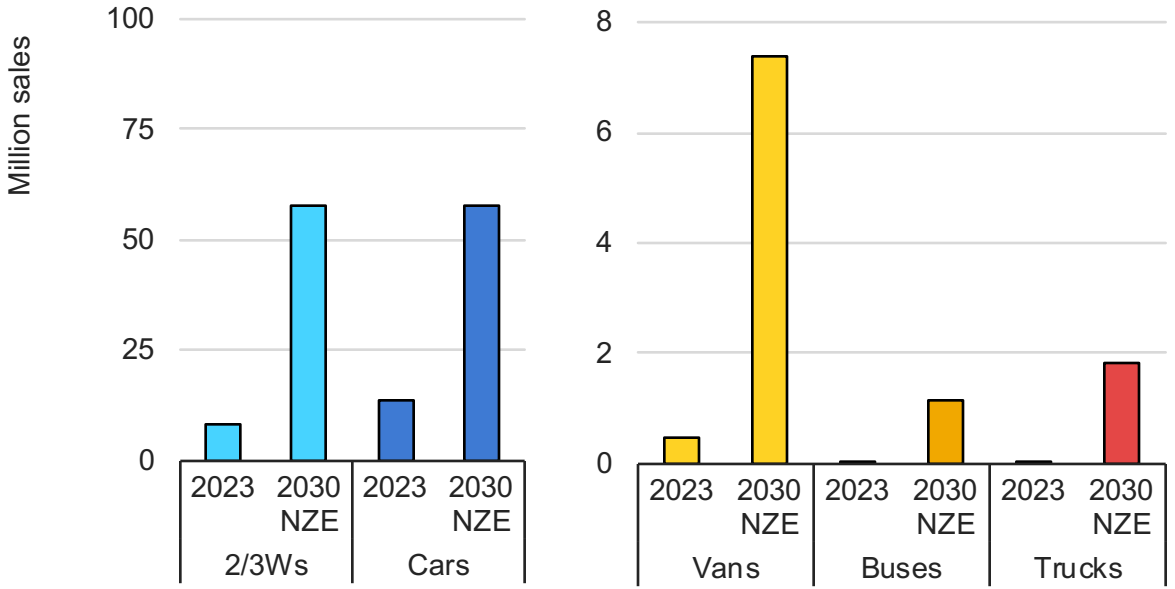
Share of electric car sales in key markets compared to conventional equivalent



SOURCE: IEA 2024

Sales of electric vehicles by segment, IEA NZE 2030

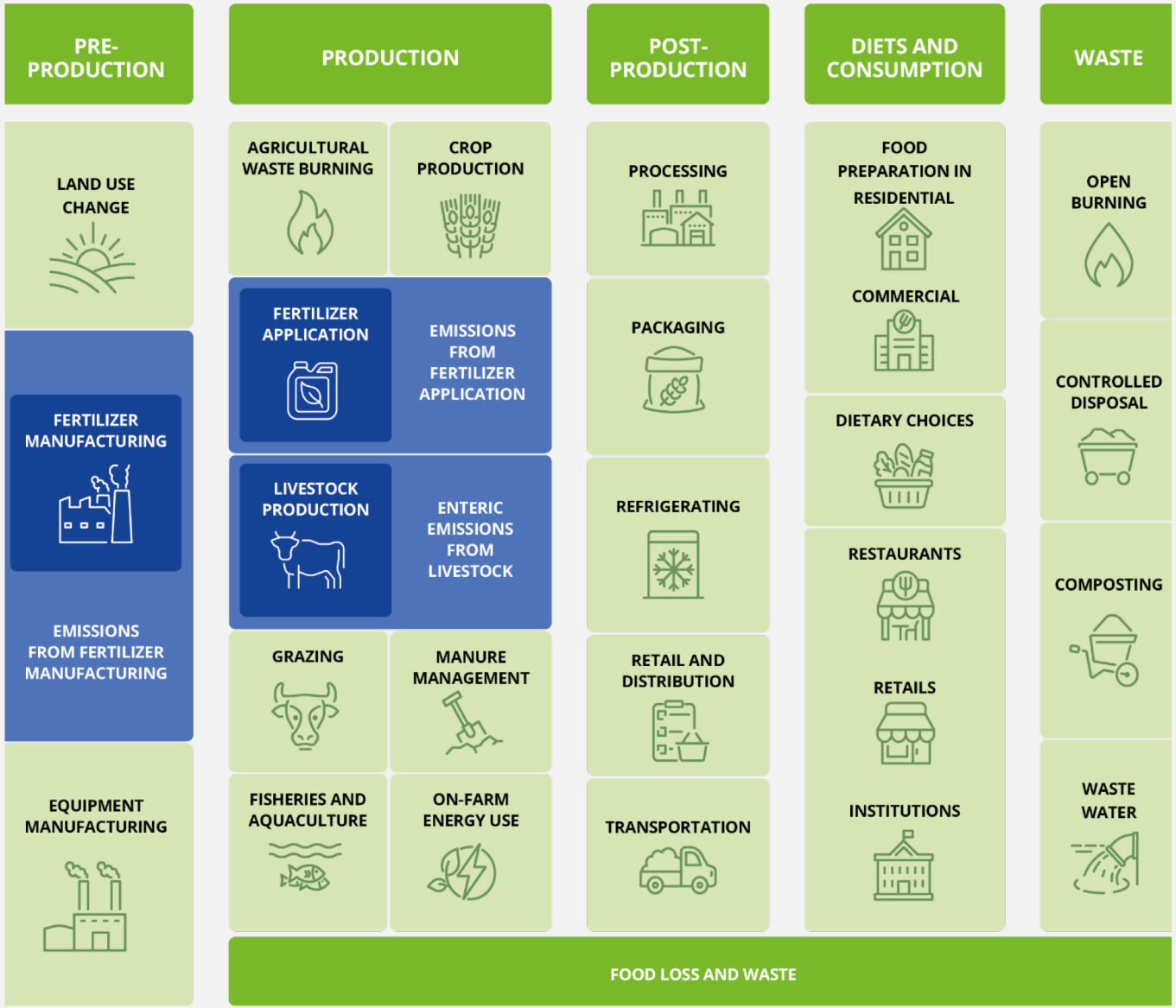


- There has been **good progress** in establishing new high-level agreements for ZEV adoption and battery supply chains in major markets.
- **Further efforts** are required in deployment of other segments, including medium- and heavy-duty vehicles, as well as to increase financial assistance in EMDEs.

2024 BREAKTHROUGH AGENDA REPORT AGRICULTURE

Presented by **Dr Aditi Mukherji, CGIAR Climate Impact Platform**, on behalf of the CGIAR writing team

Why agriculture?



Agrifood systems account for approximately one-third of all greenhouse gas (GHG) emissions globally, when food production, transport, processing, and retailing are considered (Crippa et al. 2021; IPCC-2022).

Sources of GHG emissions from various components across the entire value chain of the agrifood system. Adapted from Balasubramanian et al. 2021 and Rosenzweig et al. 2021.The sectors where we do a deep dive are marked in blue.

The Agriculture Breakthrough goal

"To make climate-resilient, sustainable agriculture the most attractive and widely adopted option for farmers everywhere by 2030"

17 participating countries:

Australia, Belgium, Cambodia, Denmark, Egypt, Germany, Ireland, Japan, Latvia, Morocco, Nigeria, Sweden, UK, UAE, Canada, Kenya, New Zealand

Co-leads:

UK, Egypt

Since COP26 in 2021, international collaborative initiatives have increased substantially, showing greater interest in climate action in the agrifood sector, yet gaps remain

Mapping of various agriculture and agrifood systems initiatives launched since 2021 against the four breakthrough principles. Note: Not exhaustive (Source: Authors).

02

Deep dive into two highly emitting sectors of the agrifood system

- Enteric methane emissions from livestock – one of the greatest contributors of methane emissions globally
- Emissions from fertilizer production and application – both significant sources of nitrous oxide emissions

An update on international actions in the livestock subsector

2021

The Global Methane Pledge (GMP) was launched at COP26.

The dairy industry is quantifying its environmental, social, and economic impact via the Dairy Sustainability Framework, with the aim to reduce its carbon footprint.

2023

The Global Methane Hub launched the Enteric Fermentation R&D Accelerator Initiative at COP28 with US$200 million in funding.

2023

Launched at COP28, Dairy Methane Action Alliance is a global initiative to accelerate food industry action to reduce dairy methane emissions.

Following COP28, there have been several conferences and awareness-raising events to strengthen international partnerships, including the launch of the Expert Panel on Livestock Methane.

2024

Within the last year, some governments have shifted to a more regulatory approach, albeit with financial disincentives/incentives. The first scheme to tax methane emissions from livestock was launched by Denmark in June 2024

With support from a diverse coalition, including agricultural and environmental groups, the US Enteric Methane Innovation Tools for Lower Emissions and Sustainable Stock (EMIT LESS) Act aims to integrate emissions-reducing practices into US Department of Agriculture conservation programs and providing financial incentives to farmers that voluntarily adopt them.

Several initiatives have enhanced research and development in the livestock sector. For example, the Livestock Research Group of the Global Research Alliance on Agricultural Greenhouse Gases (GRA) and the FAO's Livestock Environment Assessment and Performance Partnership (LEAP).

An update on international actions in the fertilizer sector

2019, 2022

A resolution on sustainable nitrogen management was adopted at the United Nations Environmental Assembly (UNEA) in 2019, followed by a second resolution in March 2022 encouraging Member States to accelerate actions to significantly reduce nitrogen waste globally by 2030

2019

15 UNEP Member States launched the Colombo Declaration on Sustainable Nitrogen Management, which called upon countries to develop national roadmaps for sustainable nitrogen management

2019

The FAO The International Code of Conduct for the Sustainable Use and Management of Fertilizers

The Code of Conduct was developed to support the 2017 Voluntary Guidelines on Sustainable Soil Management

2021

The International Energy Agency put out an Ammonia Technology Roadmap

The Efficient Fertilizer Consortium was established by the Foundation for Food & Agricultural Research as a multistakeholder collaboration to invest in solutions to reduce the environmental impacts from fertilizer use

The Croplands Research Group of the Global Research Alliance on Greenhouse Gases established the Integrated Nutrient Management Network

2022

The US Global Fertilizer Challenge was launched at COP27 to support innovative research, demonstrations, and training to help countries with high fertilizer usage and loss adopt nutrient management and alternative fertilizers

Decarbonization of fertilizer production and use is also a top priority of the International Fertilizer Association (IFA)

03

5 recommendations for international collaborative action

Five recommendations for international collaborative action

A1
Increase climate finance directed toward sustainable agricultural technologies and approaches

A2
Encourage international knowledge sharing on policy and technology implementation

A3
Develop common metrics and indicators to track the adoption of sustainable agricultural solutions

A4
Increase support for research, development, and demonstration to scale promising approaches

A5
Support international efforts to enable the private sector to scale up solutions through global markets

Thank you on behalf of CGIAR's author team

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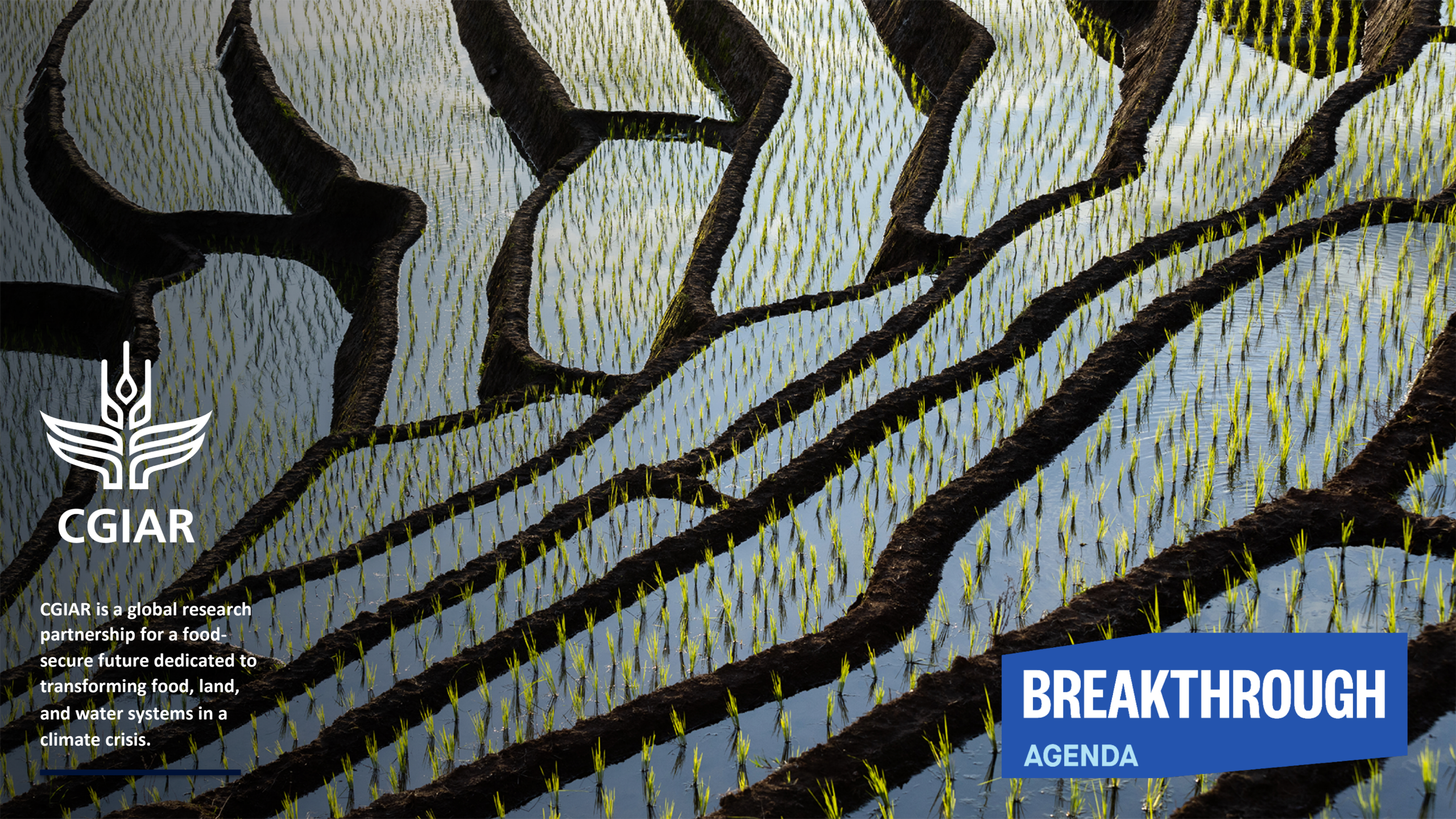

CGIAR

CGIAR is a global research partnership for a food-secure future dedicated to transforming food, land, and water systems in a climate crisis.

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