

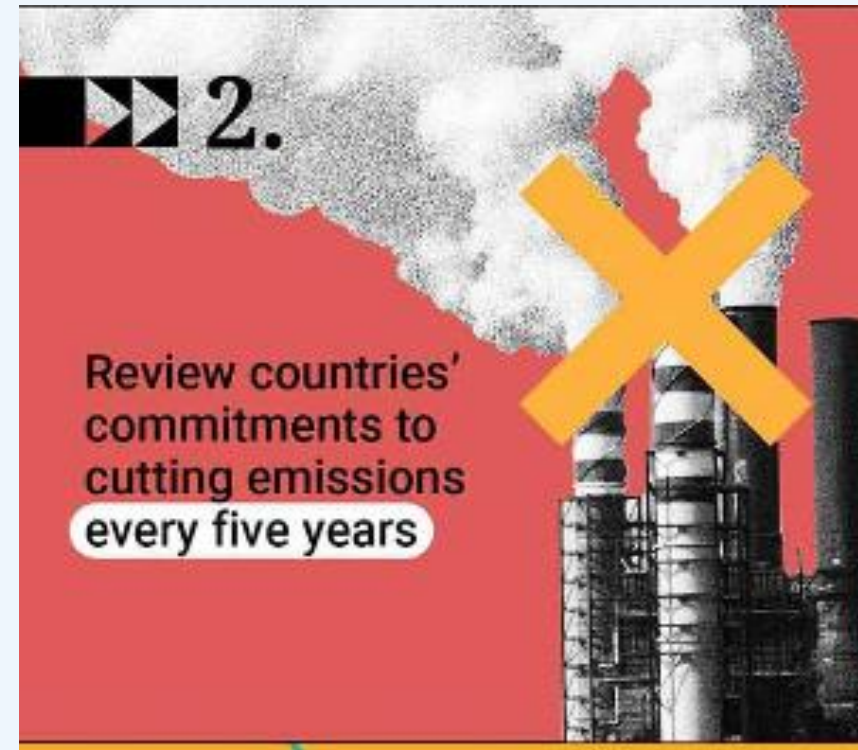
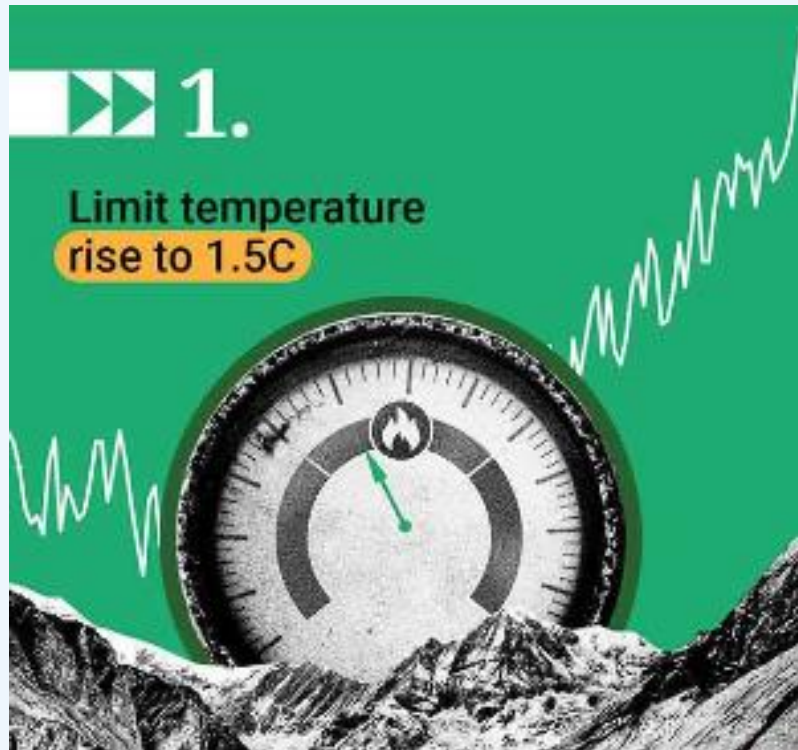


**Net zero has gone viral amid  
global economic downturns**

# **Green Economy Forum 2023**

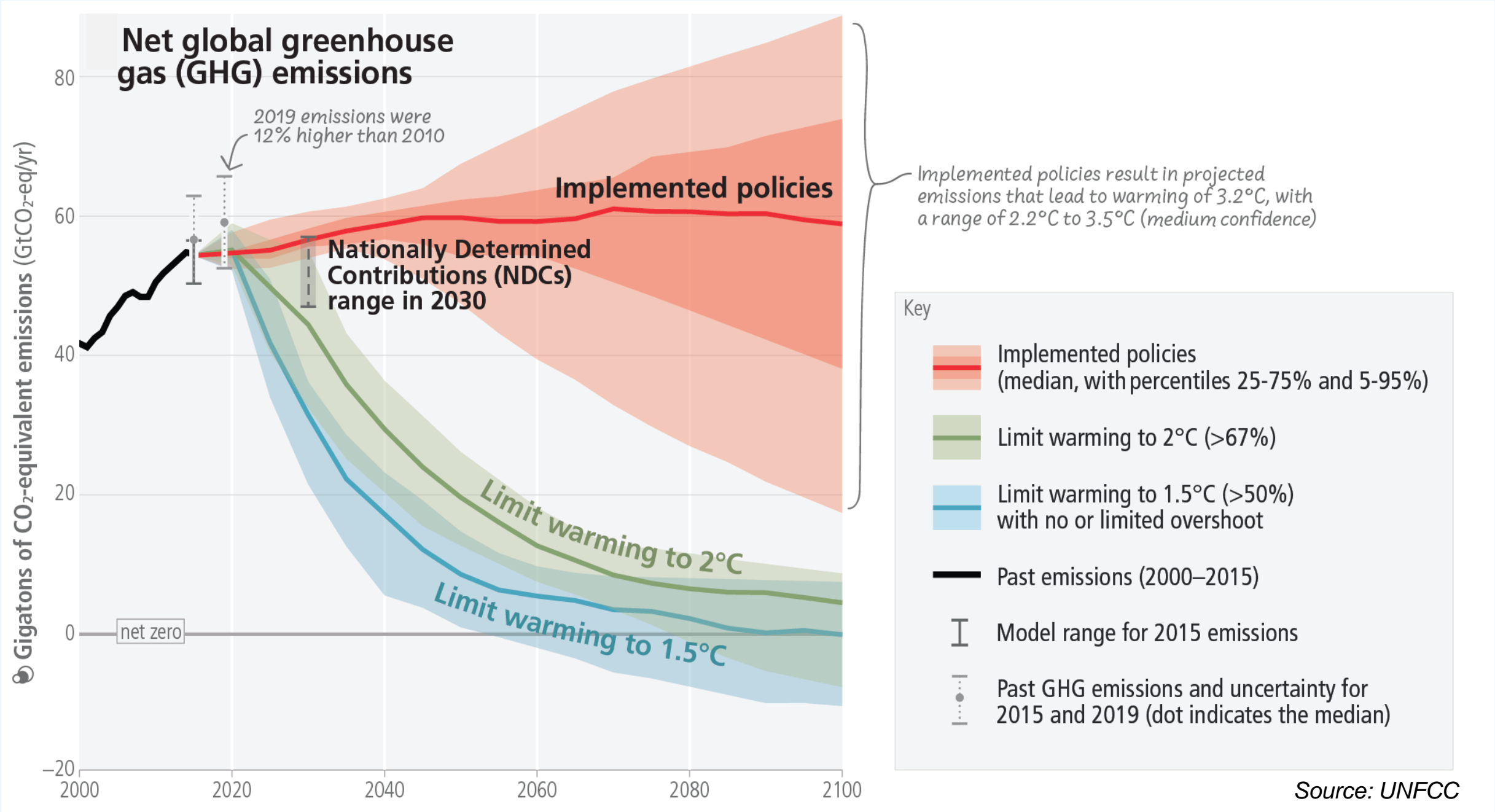
Jonathan Pincus  
Senior International Economist  
August 18, 2023

# Three key elements of the Paris Agreement 2015



- Paris Agreement is legally binding on 194 parties (193 countries and the European Union)
- The Agreement works on a five- year cycle of increasingly ambitious climate action.
- Every five years, each country is expected to submit an updated national climate action plan - known as [Nationally Determined Contributions](#), or NDCs.
- The Paris Agreement invites countries to formulate and submit long-term strategies (not mandatory under the Agreement).

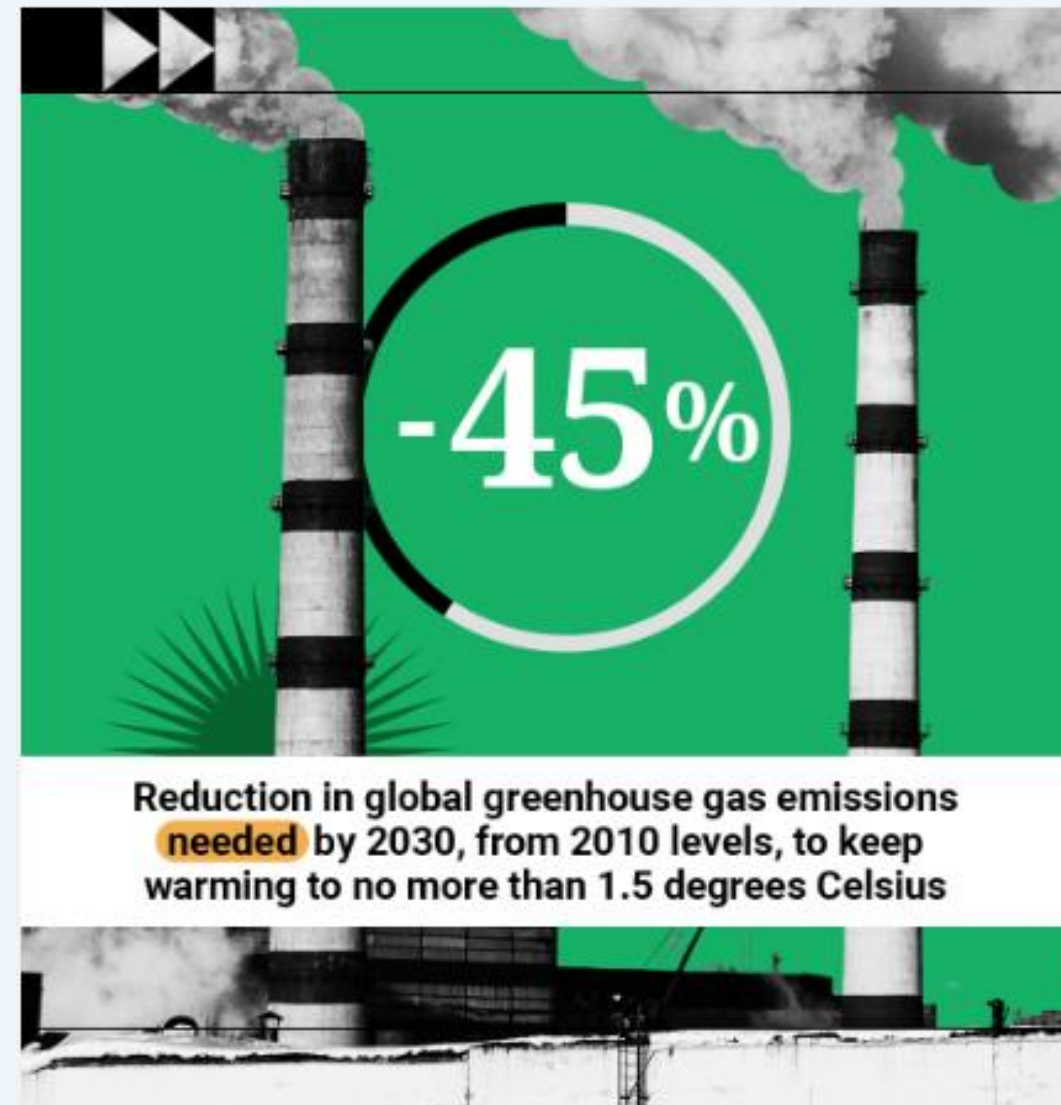
# The world is not yet on track to net zero



- **Limiting warming to 2.0°C requires cutting GHG emissions 25-50% below 2019 levels by 2030**
- **Current 2030 national commitments are not sufficient—only 12% below 2019 estimates**
- **130 countries have set targets to achieve net-zero around 2050, representing 90% of current emissions**



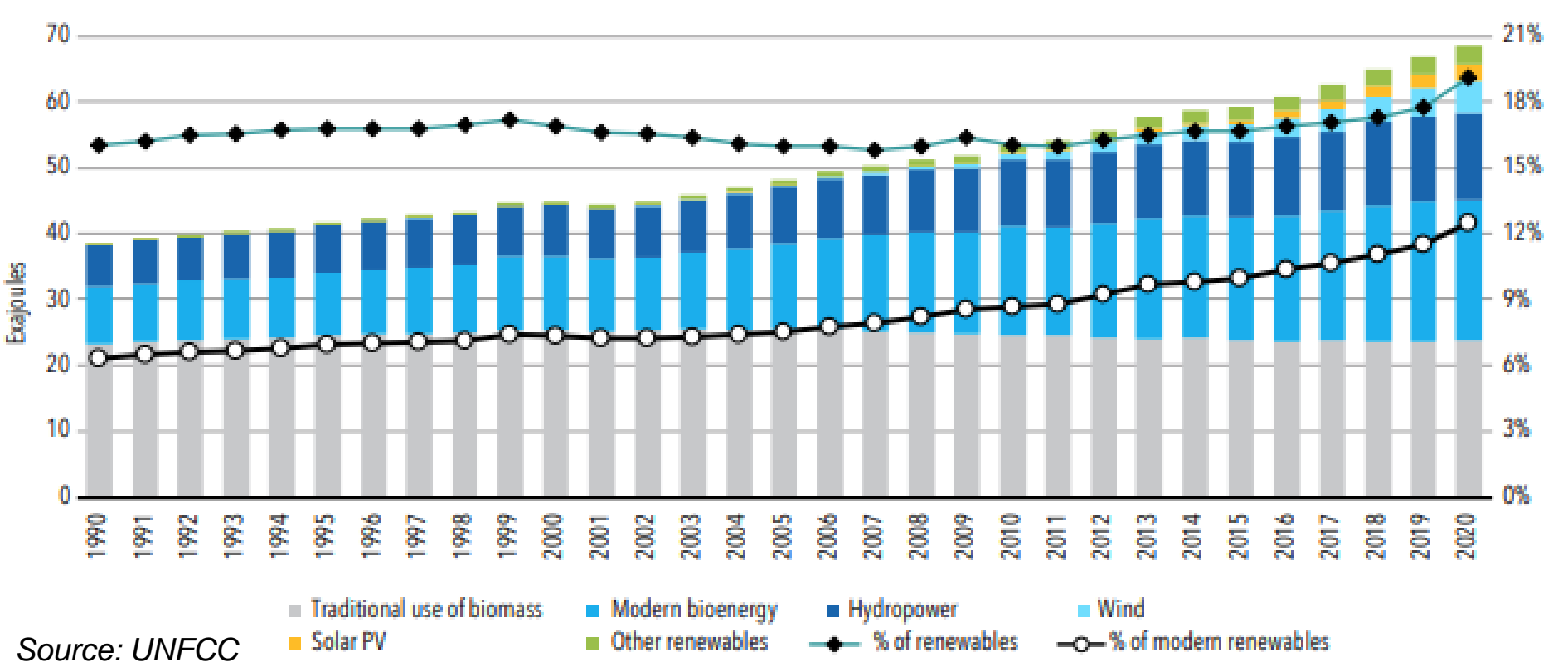
# Current national plans fall short of what is required



The Group of 20 (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union) are responsible for about 75 per cent of global greenhouse gas emissions

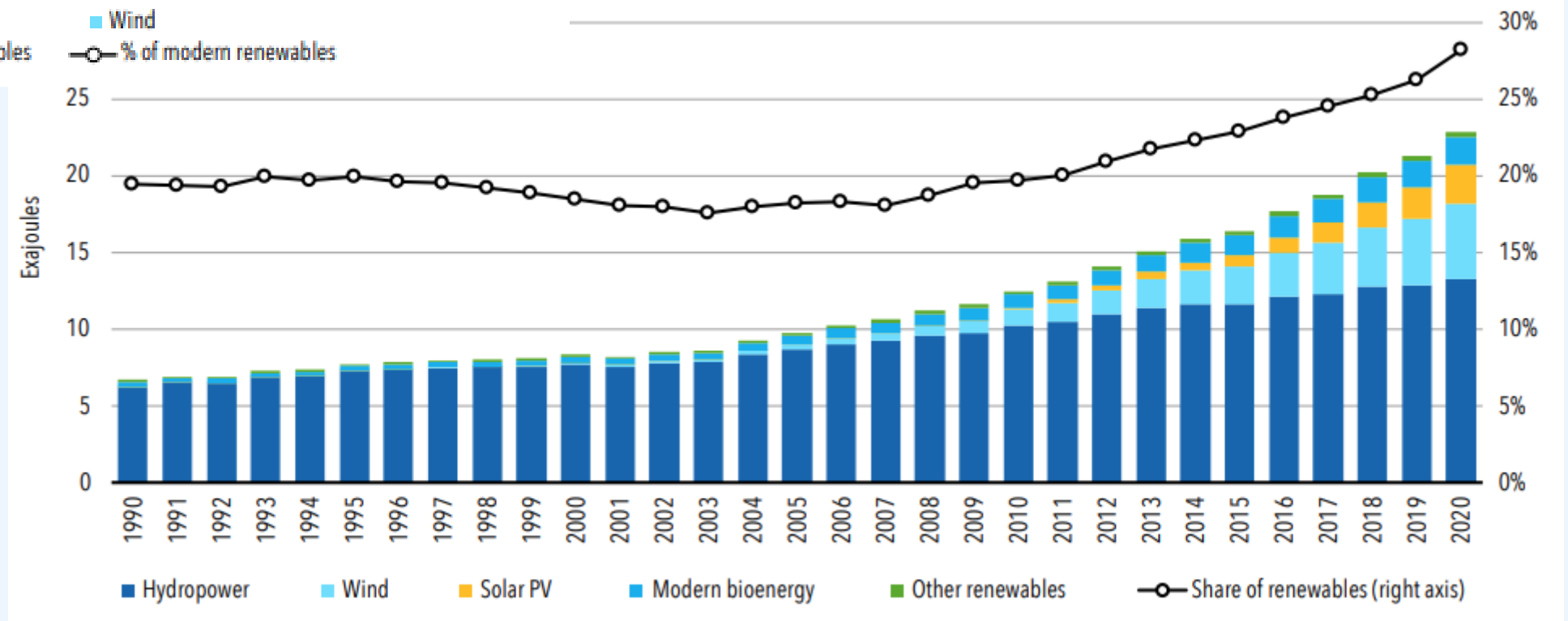
Source: UNFCCC

# Progress is accelerating...

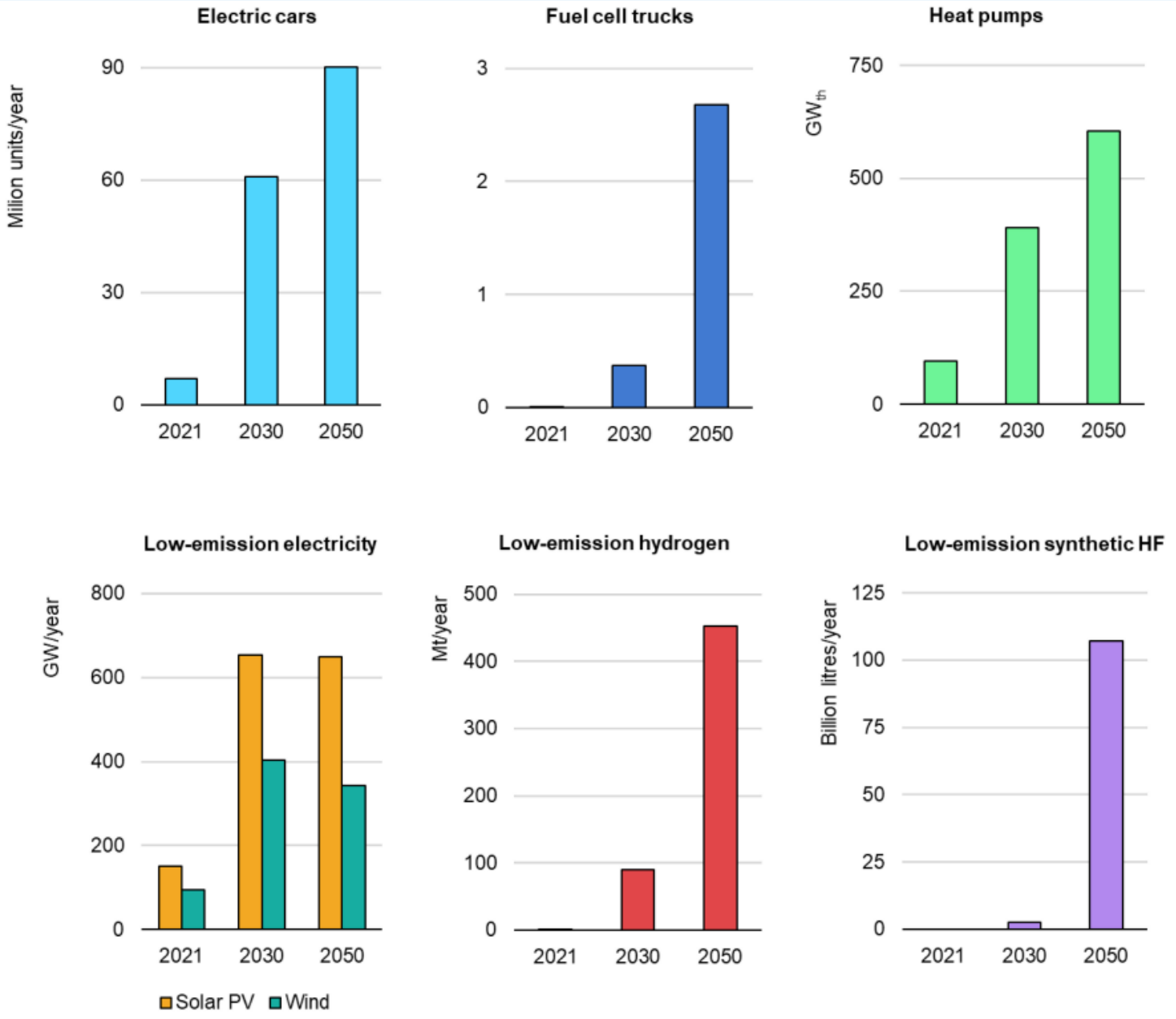


- **Share of renewable sources in total energy use 19.1% in 2020, up from 16% in 1990**
- **Investment in clean energy \$1.4 trillion in 2022**
- **Share of solar and wind increasing in line with total demand**

- **Share of renewables in electricity generation 28.3%, up from 20% in 1990**
- **Renewables, grid and storage accounted for 80% power sector investment in 2022**
- **Hydro power, solar and wind growing fastest in East and SE Asia**

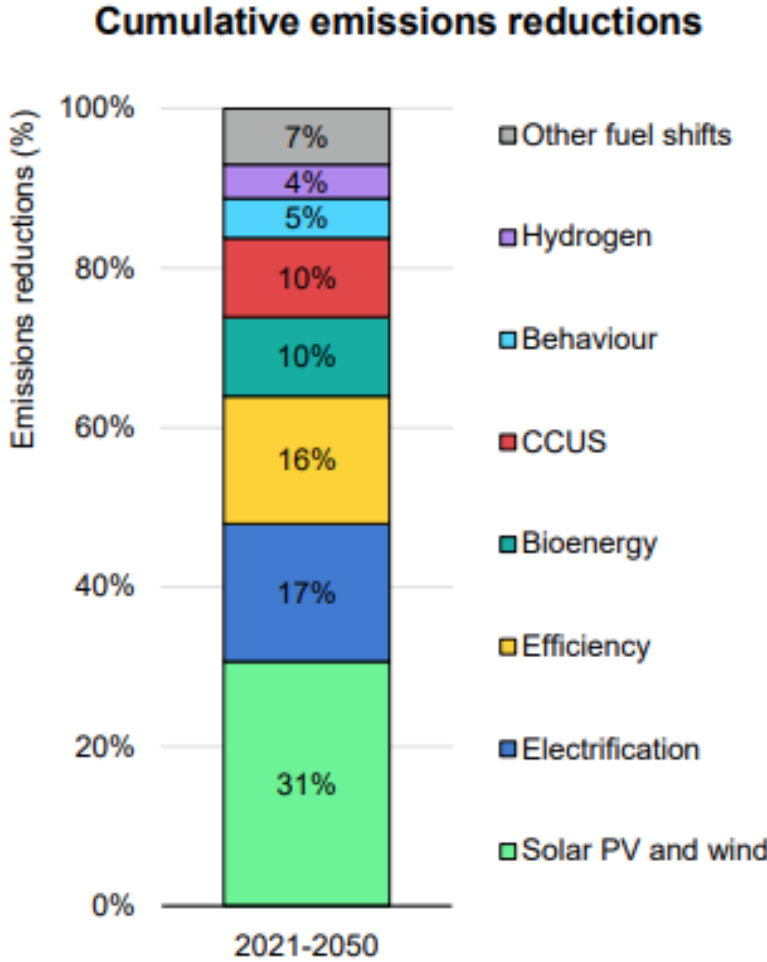


# Renewable energy, efficiency gains and carbon capture



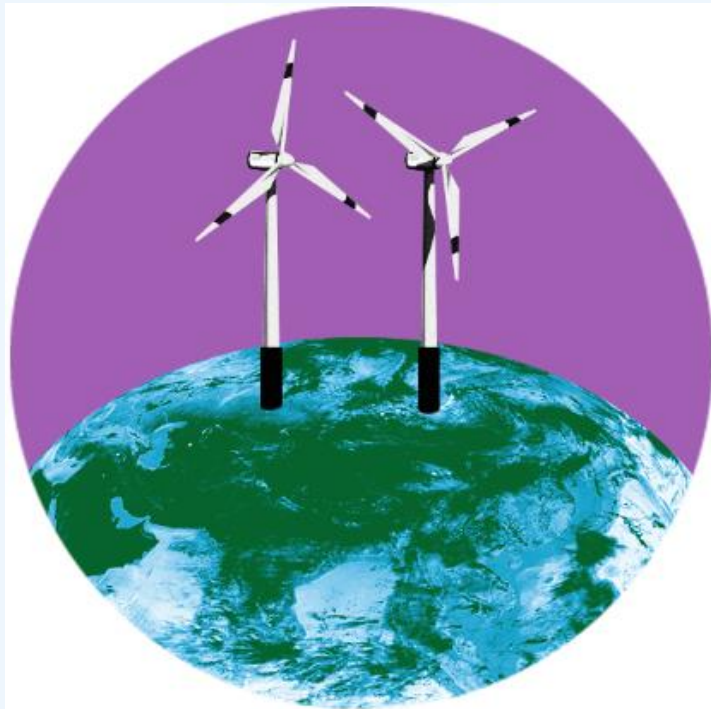
Source: IEA

- PV solar and wind account for nearly 1/3 of reductions
- Bioenergy, efficiency gains and carbon capture, utilization and storage (CCUS) another 1/3
- Electrification of transport and heating 17%
- Costs of solar and wind generated electricity have fallen quickly, stimulating demand
- Most renewable energy technologies have higher upfront capital costs, recouped over the lifespan of the equipment





# Five ways to jump-start the renewable energy transition



Make renewable energy technology a global public good

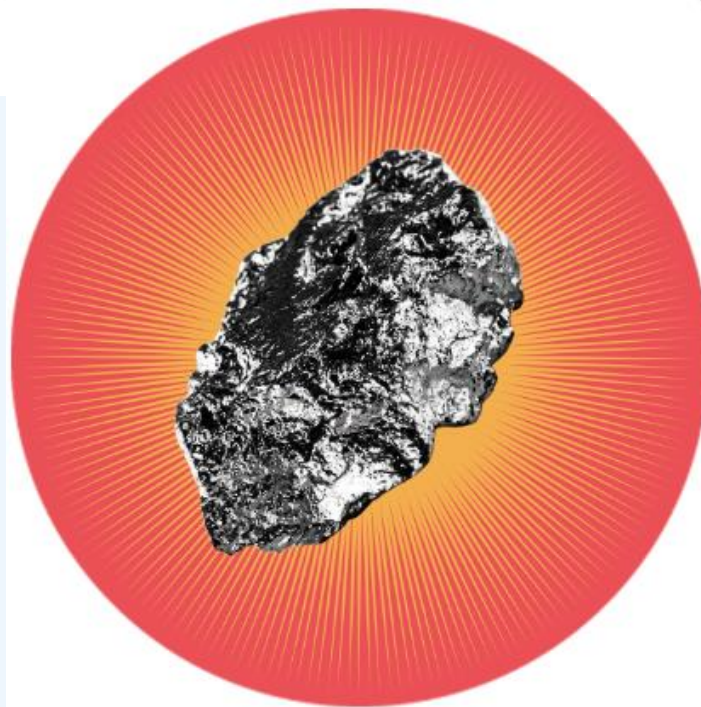


Domestic energy policies to level the playing field for renewable technology

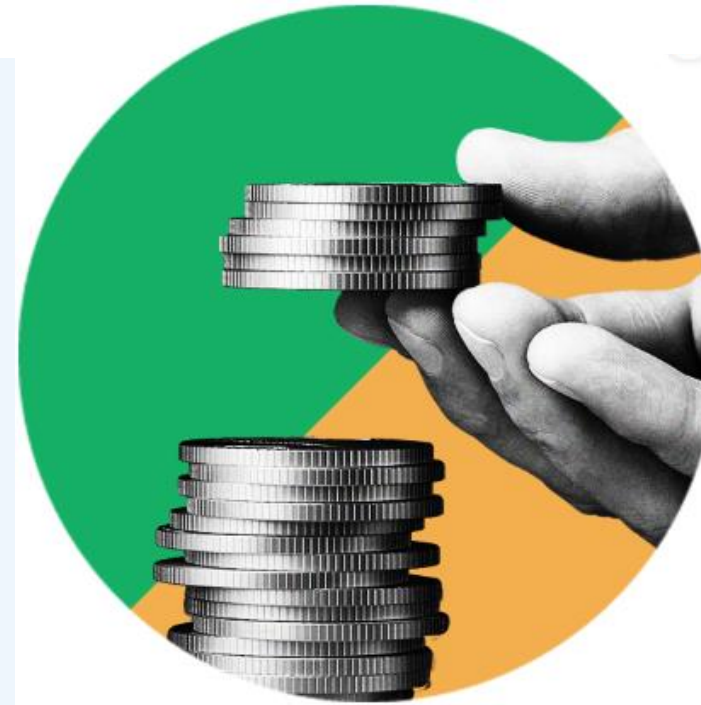


Triple investment in renewables to \$4 trillion a year until 2030

Improve global access to components and raw materials

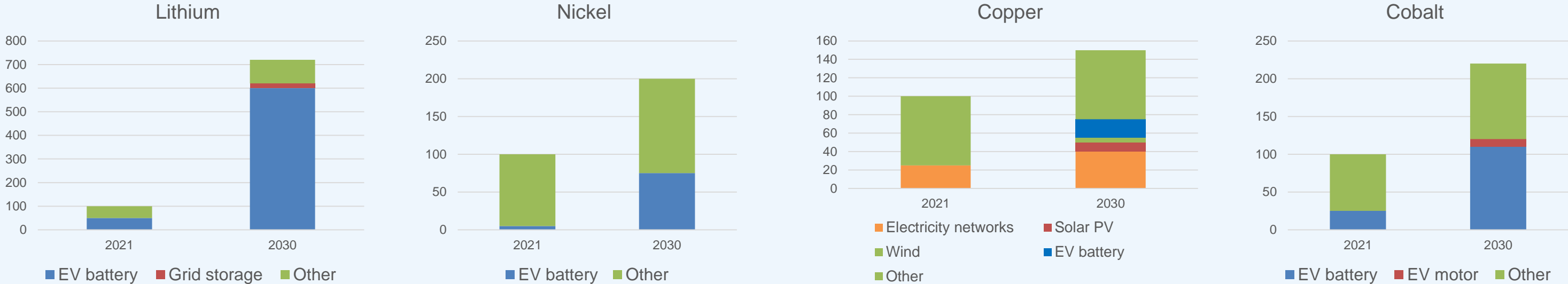


Shift energy subsidies from fossil fuels to renewables (\$5.9 trillion in 2020)

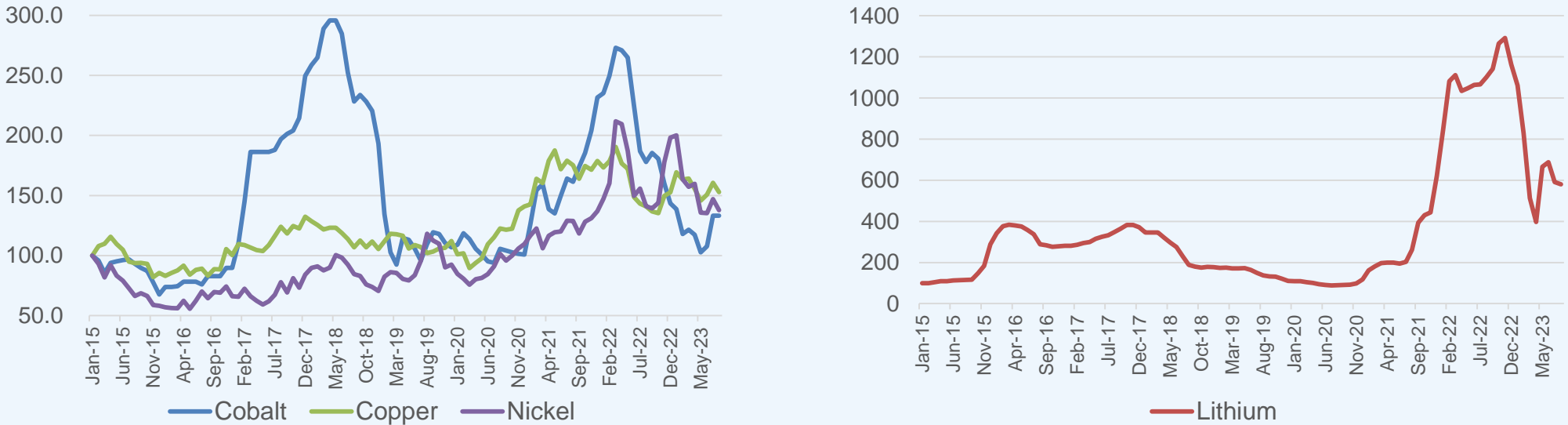


# Ramping up investment will increase pressure on supply chains for critical raw materials

Projected demand for critical materials, 2021=100



Prices of critical materials, January 2015=100





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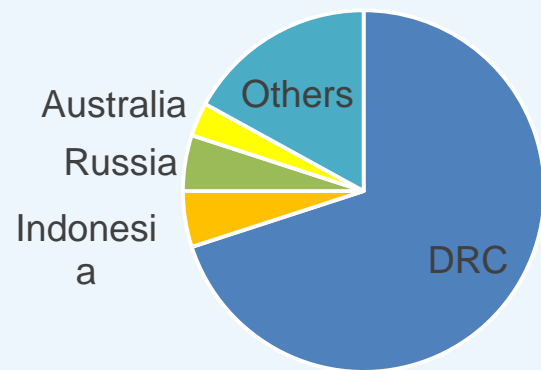
# How China cornered the market for clean tech

The country is the biggest supplier of materials vital for the energy transition. That could give it geopolitical leverage

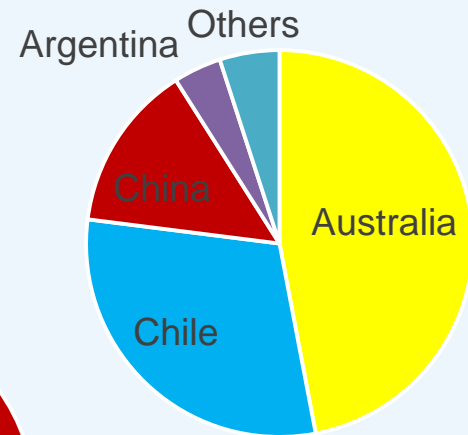
Beijing restricts exports of gallium and germanium in July, metals used in the production of electric vehicles, microchips and weapons systems.



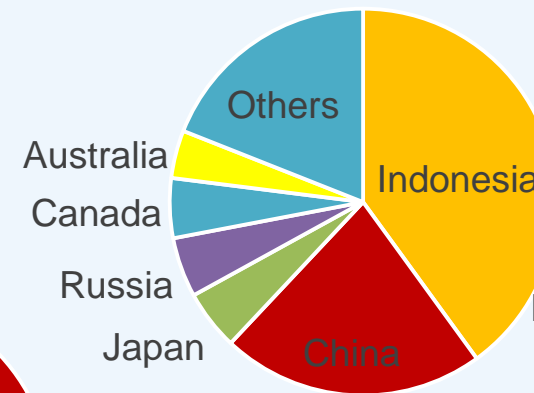
Cobalt mining



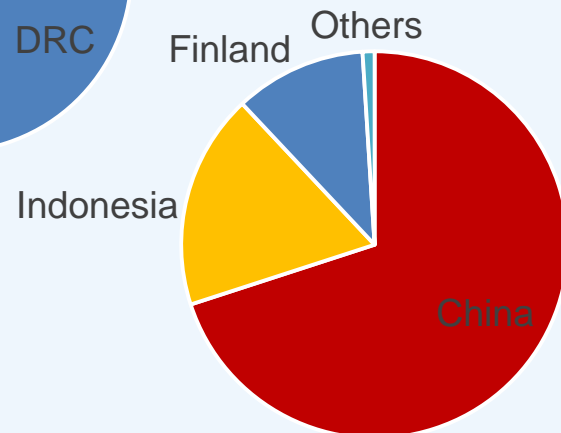
Lithium Mining



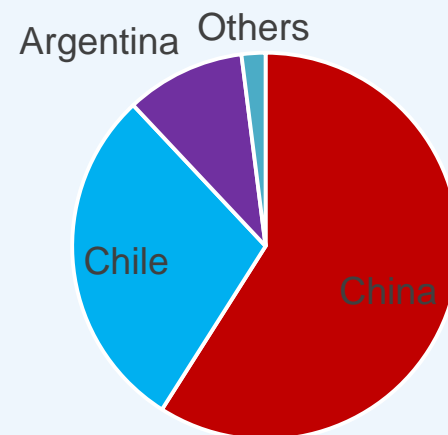
Nickel Refining



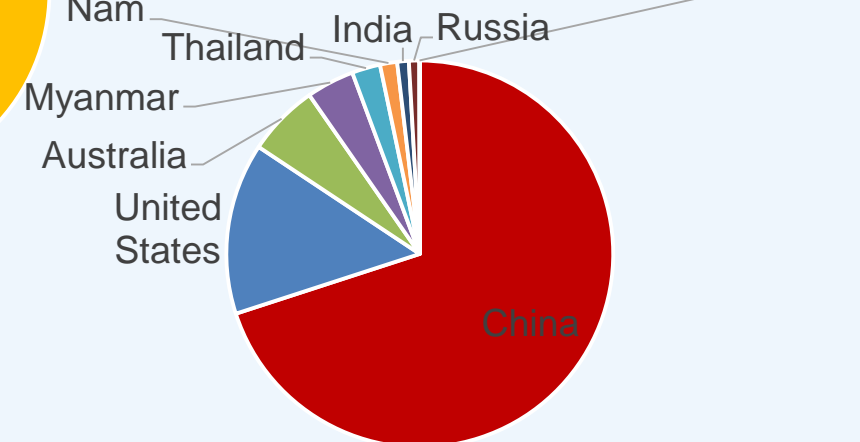
Cobalt Refining



Lithium Refining

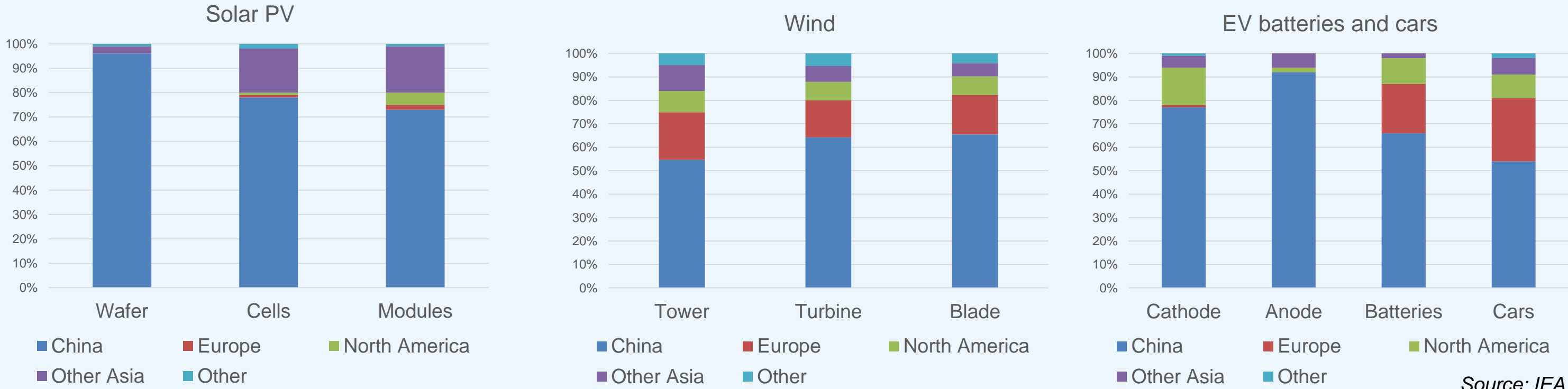


Rare earth elements mining



# China is cheapest and biggest producer of renewable energy components and equipment

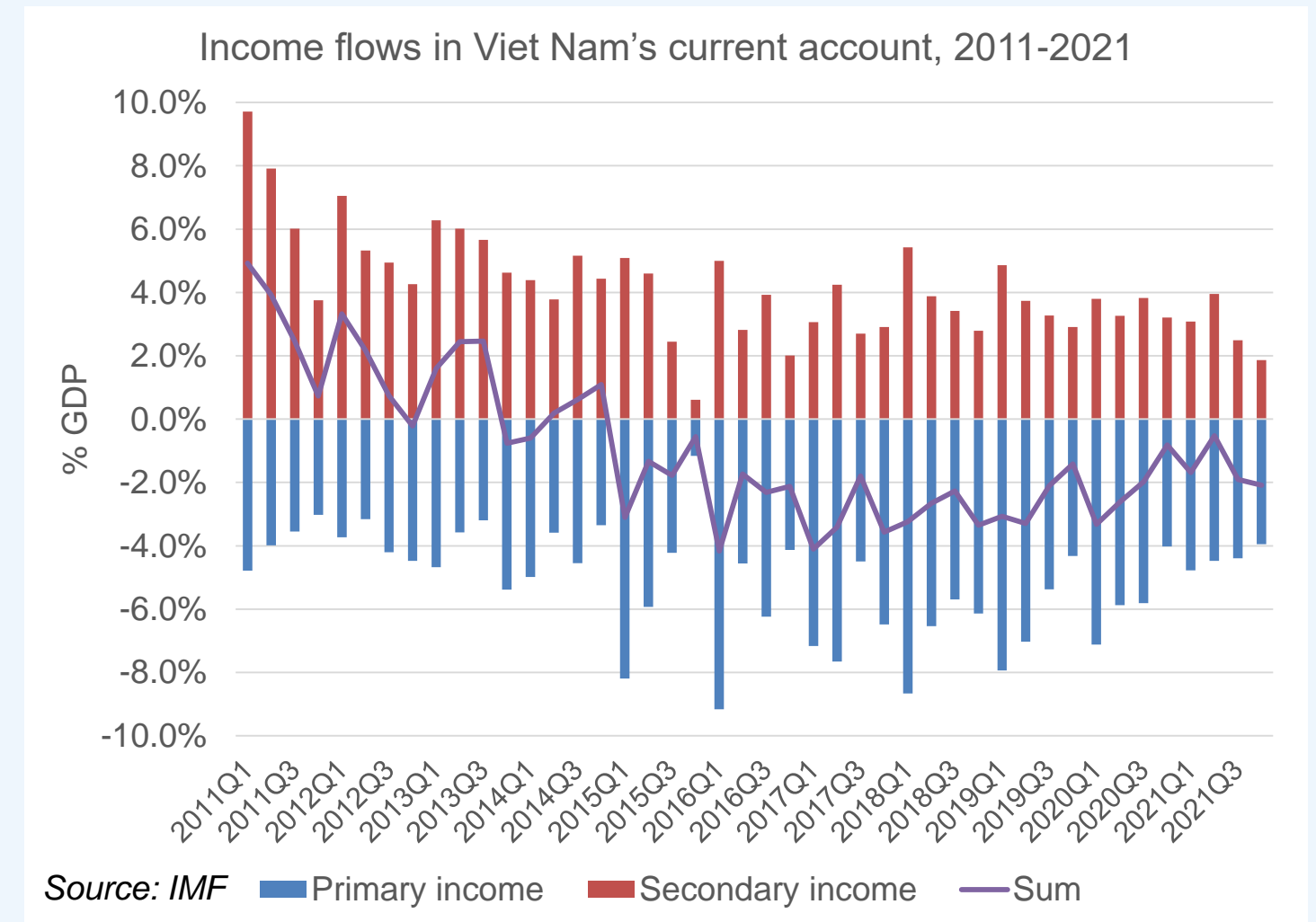
- Building on its control over critical resources, China has invested heavily in building capacity to produce wind turbines, solar PV, EV cars and components and other components and equipment.
- Europe and North America will have to choose between meeting climate goals and decoupling from China—it is unlikely that they can do both.



Source: IEA

# Financing the transition in developing countries

- Private sector accounted for 75% of energy transition investment 2013-2020, mainly to high income countries where investment risks are lower
- Sovereign guarantees are the most commonly used instruments in developing countries to increase private investment, but these count as government's contingent liabilities and can increase cost of borrowing in the medium term
- Developing countries' ability to absorb foreign capital is limited by constraints on the balance of payments because foreign capital creates new liabilities (interest and principal payments, profit remittances)
- Mounting current account deficits increase pressure on the exchange rate and domestic interest rates, which make the energy transition more expensive
- **Viet Nam is a champion exporter, but export production is import intensive, resulting in a narrow trade surplus in most year.**
- Meanwhile profit remittances are rising while international remittances falling as a share of GDP, putting further pressure on the current account balance.







**Thank you**