CNIS

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# Measuring climate-related data to inform macroeconomic trends

## https://www.oecd.org/climate-action/ipac

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# Climate change will affect the economy

## Physical effects

Hazards and extreme events cause

- Physical damage to assets

- Supply chain disruptions

## Transition effects

Climate policies can lead to

- Changes in demand, resources, input prices

- Job destruction/creation, stranded assets, financial uncertainty

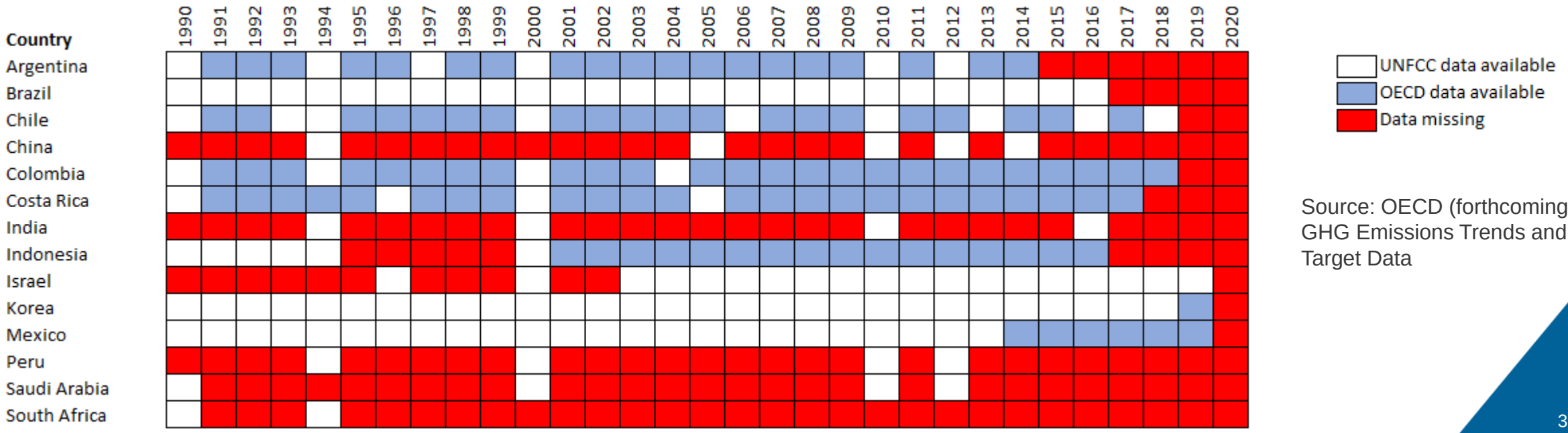
GDP, productivity, inflation, investment, etc.

Starting point for analysis is foundational climate data on emissions (to track progress on mitigation), hazards and climate policies

# But: Climate data is not readily available…

- Data on climate risks available but needs transformation
- Data on GHG emissions is lacking for some key countries

Table 1: Missing GHG emissions data for key countries



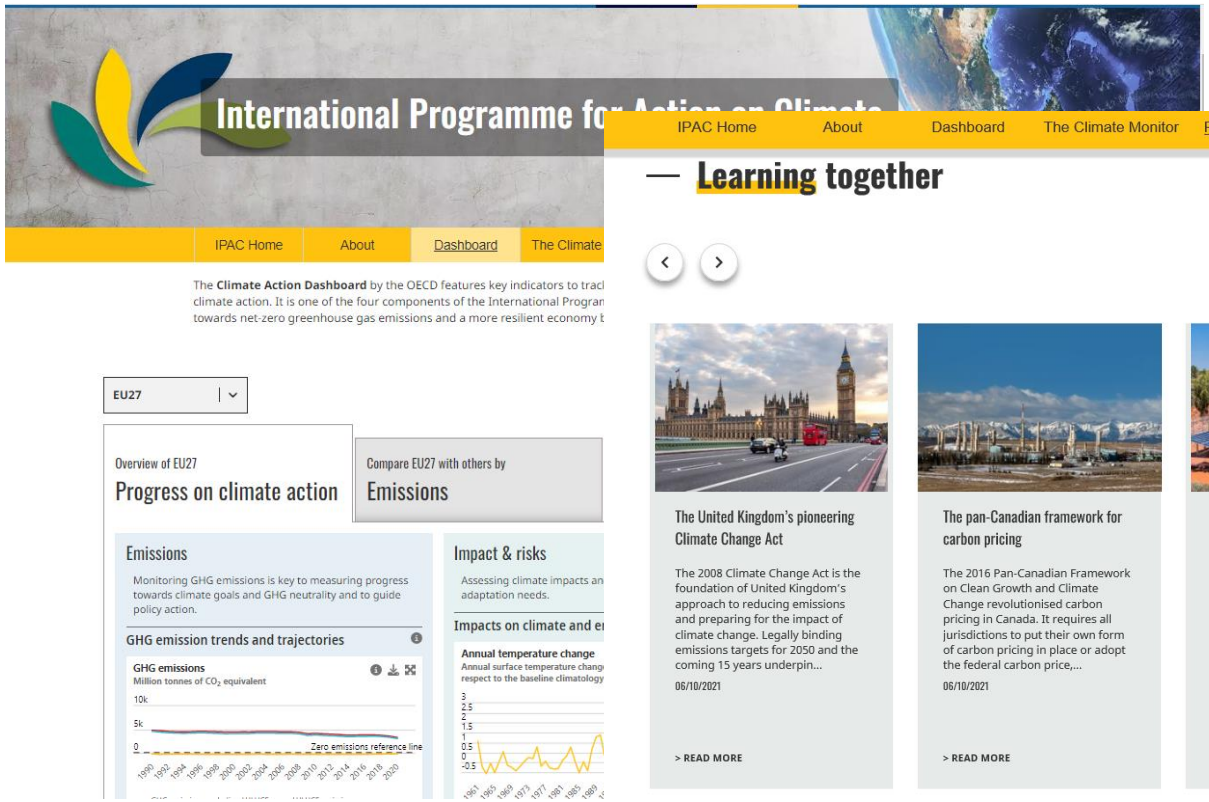

Source: OECD (forthcoming): GHG Emissions Trends and Target Data

# …or is not harmonised

- No comprehensive harmonised climate policy database to date
- No harmonisation of NDCs
  - Different target types
    - EU: At least 55% reduction in GHG emissions by 2030 compared to 1990.
    - China "aims to have CO2 emissions peak before 2030”
  - GHG scope (e.g. only CO2, all GHG)
  - Sectoral scope (e.g. all sectors, only energy)

# The International Programme for Action on Climate (IPAC)

- Creating the foundational climate data
- A **one-stop resource** to support policy choices





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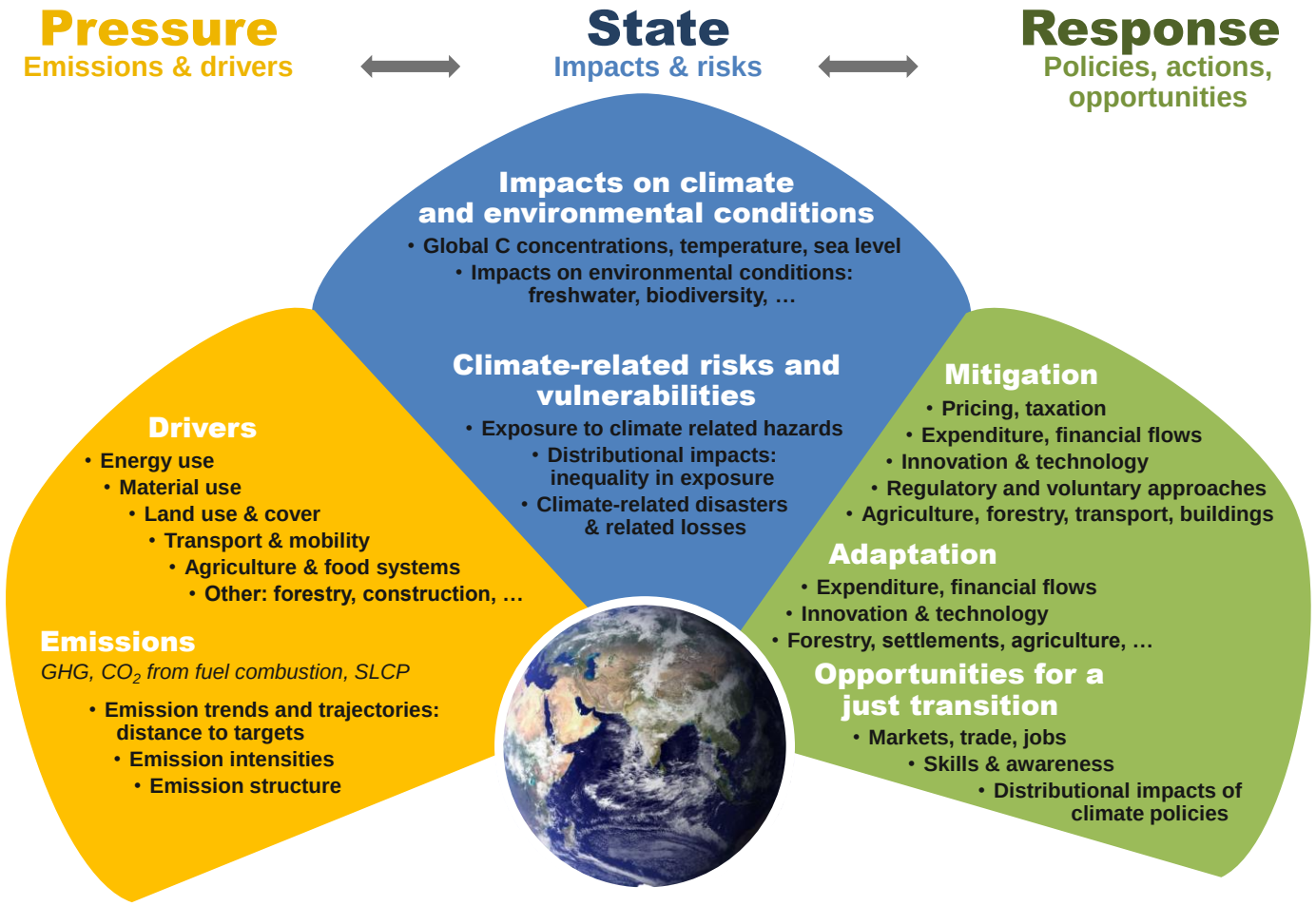
# Three pillars of innovative climate data

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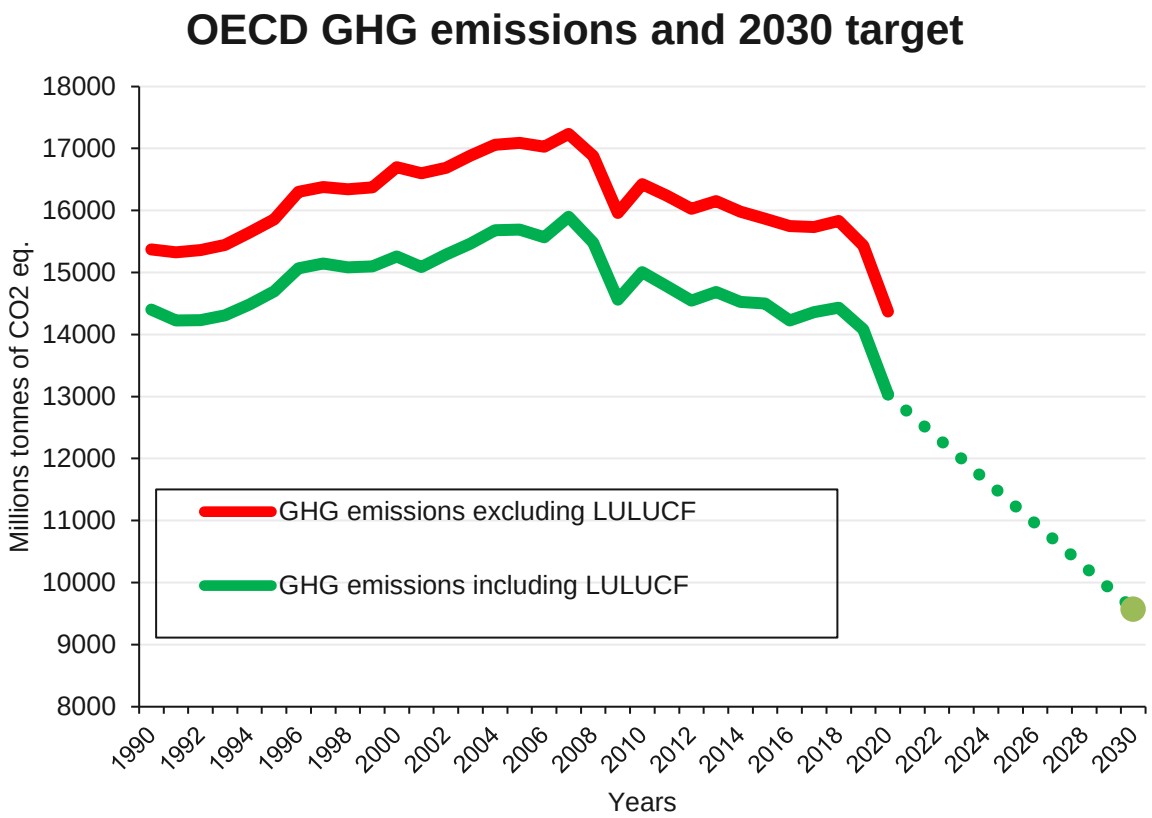
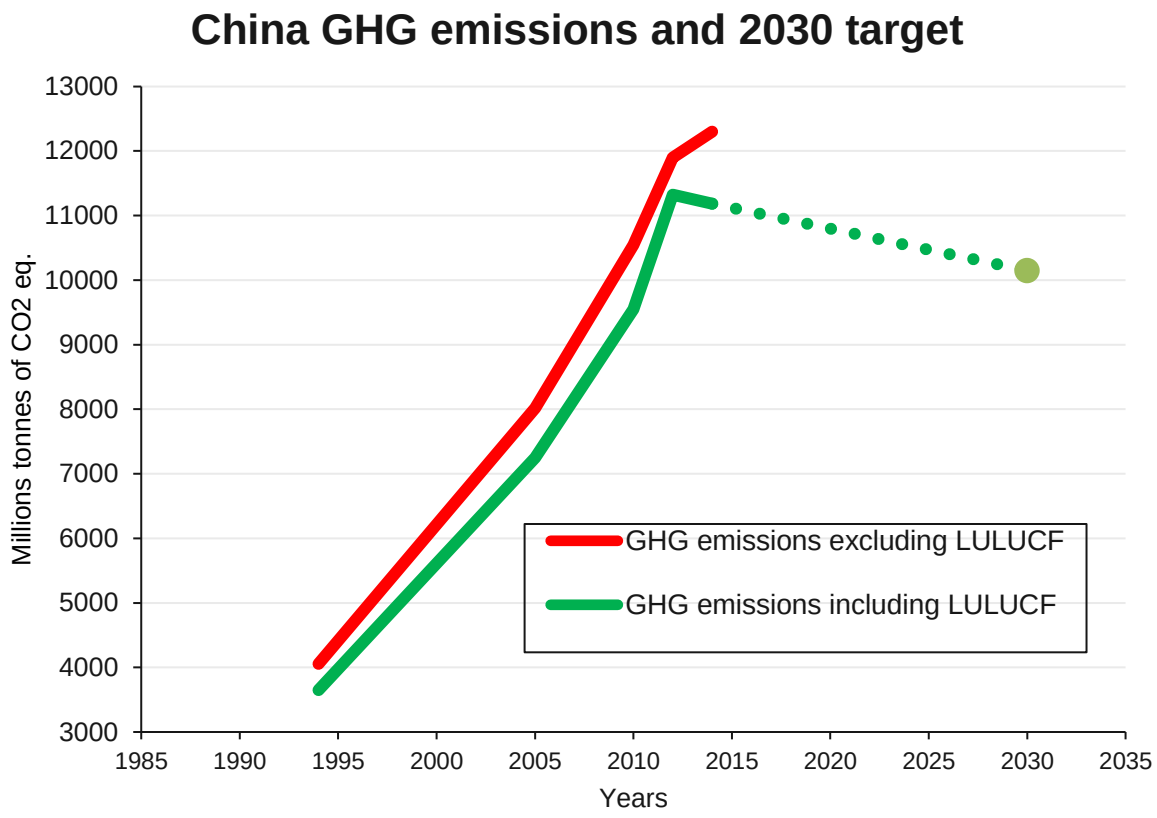
# GHG emissions and their targets for selected countries

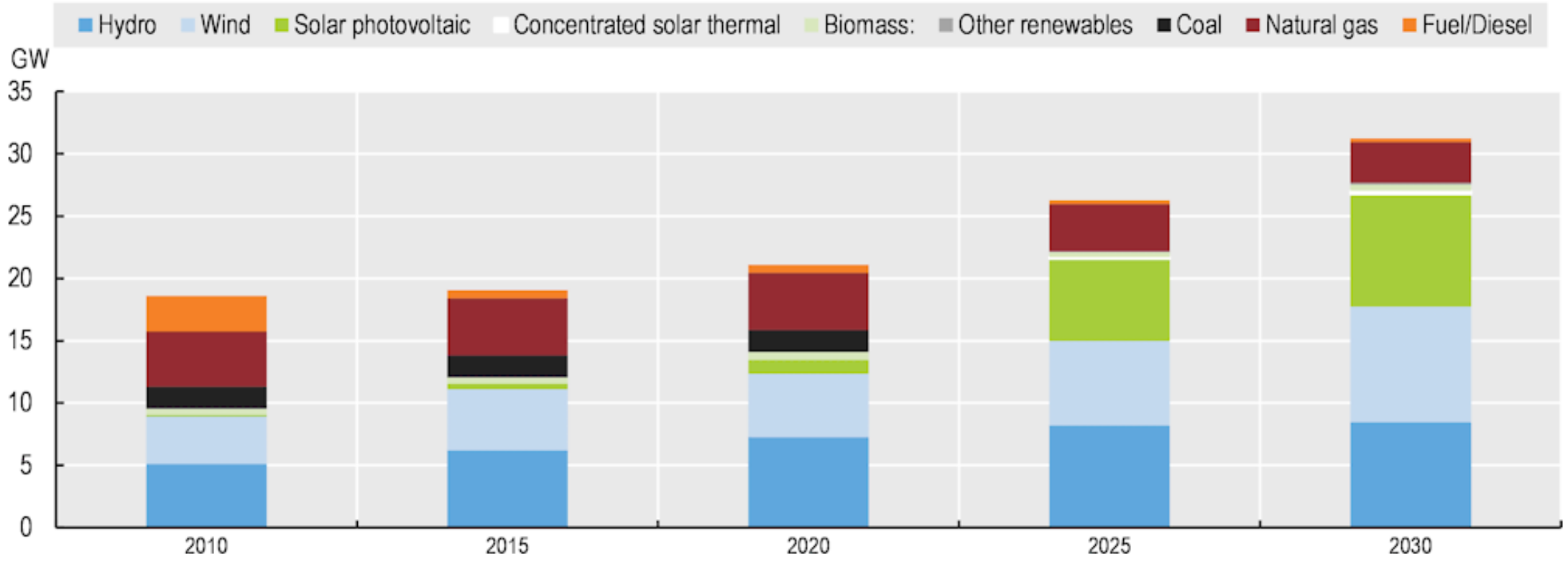



Source: OECD (forthcoming): GHG Emissions Trends and Target Data

# Tracking intermediate targets related to GHG emissions

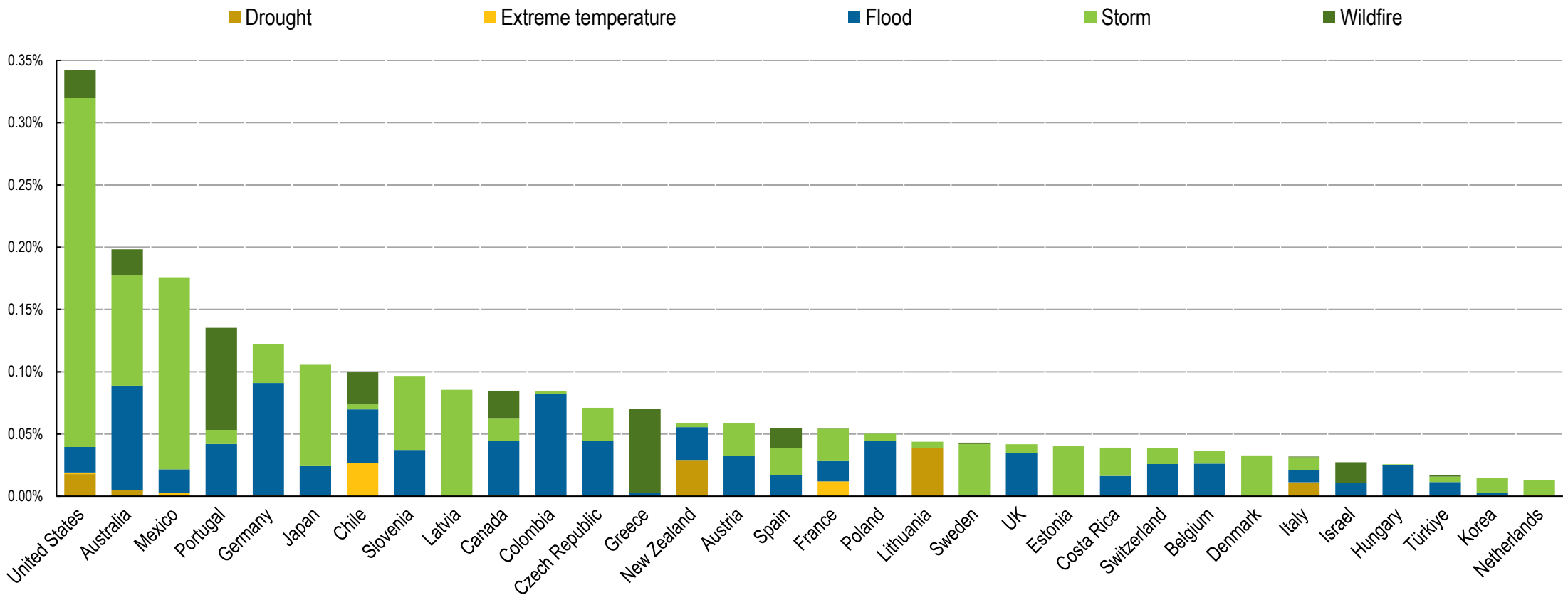
Power generation capacity in Portugal: 2010-2020 and targets for 2025 and 2030




Source: [OECD (2023): OECD Environmental Performance Reviews: Portugal 2023]

# Extreme climate events create major loss and damages

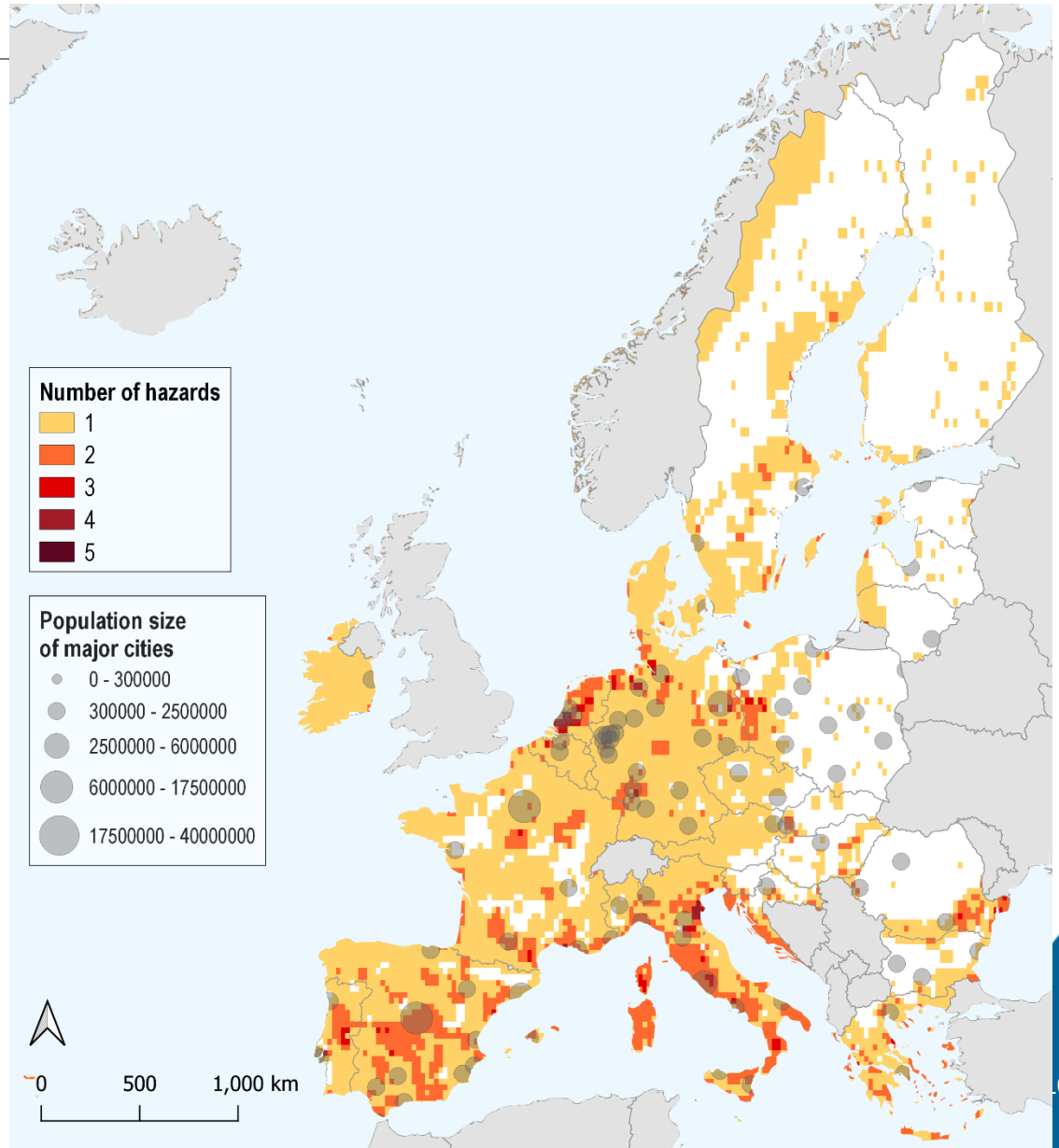
Damages from climate-related hazards per unit of GDP in OECD countries, 2005-21




Source: Centre for Research on the Epidemiology of Disasters, 2022.

# Climate hazards and exposure, hot spot hazard maps

1. Extreme temperature
2. Extreme precipitation
3. Drought
4. Wildfire
5. Wind threats
6. River flooding
7. Coastal flooding



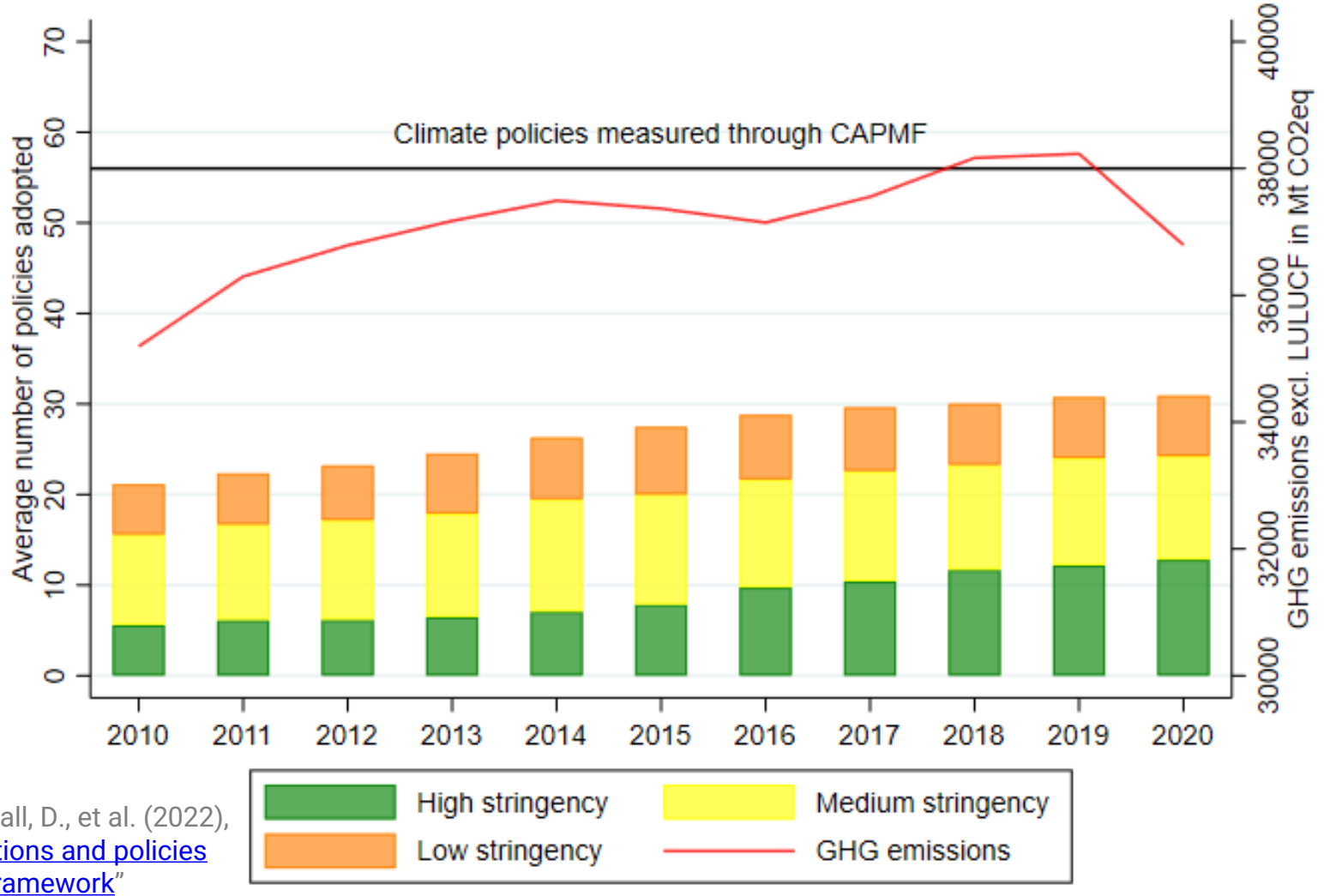

Source: Maes, M, et al. (2022), "Monitoring exposure to climate-related hazards"

# Climate Actions and Policies Measurement Framework

| Sectoral policies | | |
|---|---|---|
| Sector | Market-based instruments | Non-market based instruments |
| Electricity | • **Carbon pricing** (ETS, carbon and fuel taxes, FFS reform or removal)<br>• **RES support** (FiT, auctions, RPS) | • **Bans and phase outs** of coal power plants<br>• **Air pollution standards** coal plants<br>• **Planning for renewables** |
| Transport | • **Carbon pricing**<br>• **Congestion charge** | • **Fuel economy standards**<br>• **Energy labels**<br>• **Bans and phase outs of ICE**<br>• **Public rail investment**<br>• **Motorway speed limits** |
| Buildings | • **Carbon pricing**<br>• **Financing mechanisms for EE** (e.g. preferential loans for retrofits) | • **MEPS appliances**<br>• **Energy labels** appliances<br>• **Building energy codes**<br>• **Bans and phase outs** of fossil-based heating |
| Industry | • **Carbon pricing**<br>• **Financing mechanisms for EE** | • **MEPS industrial motors**<br>• **Energy efficiency** mandates |

# Climate action increased, but more needs to be done

GHG emissions and policy adoption by stringency: 2010-2020



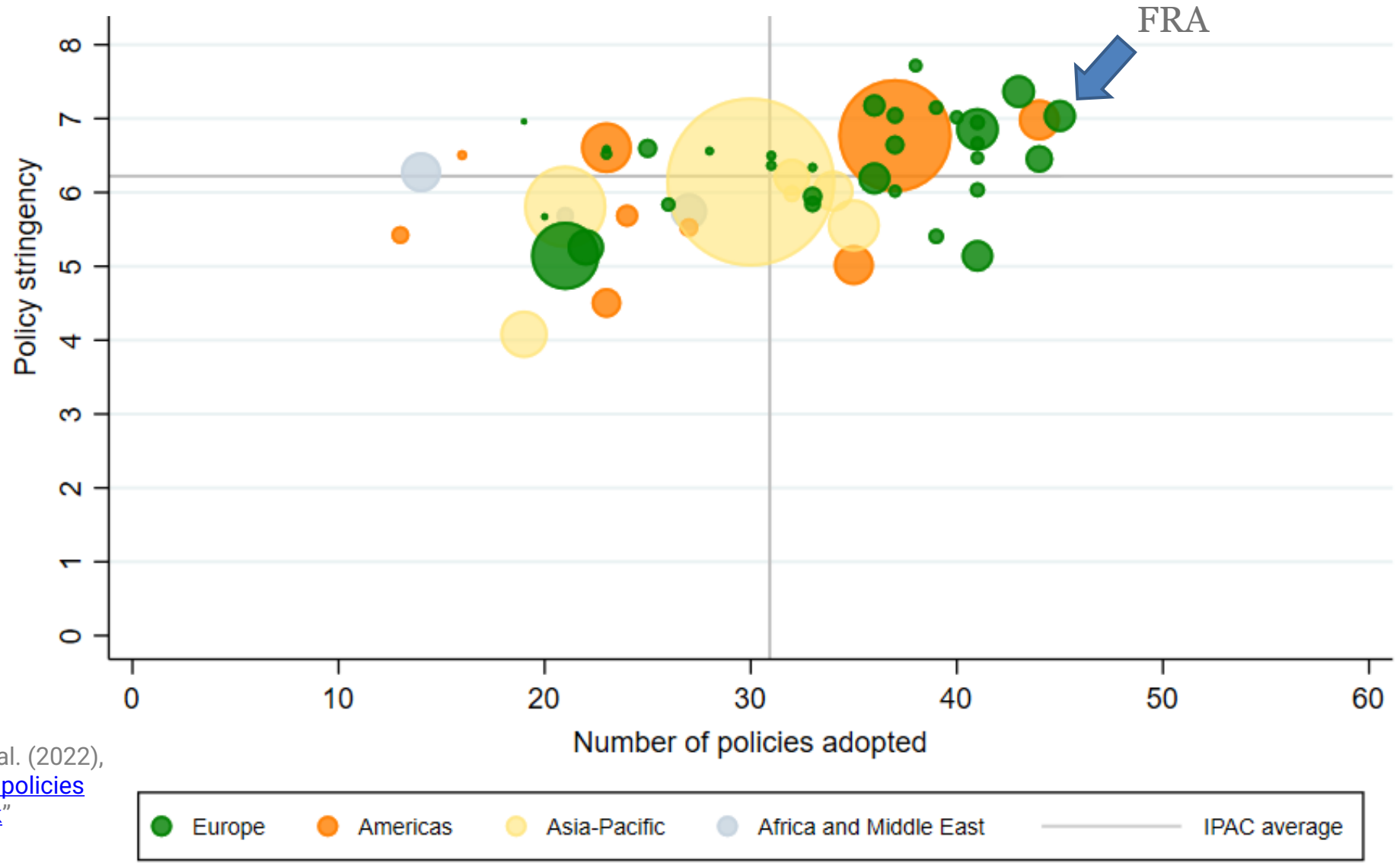

Source: Nachtigall, D., et al. (2022), "The climate actions and policies measurement framework"

## Stringency

**Definition:** the degree to which policies incentivise or enable GHG emissions reduction

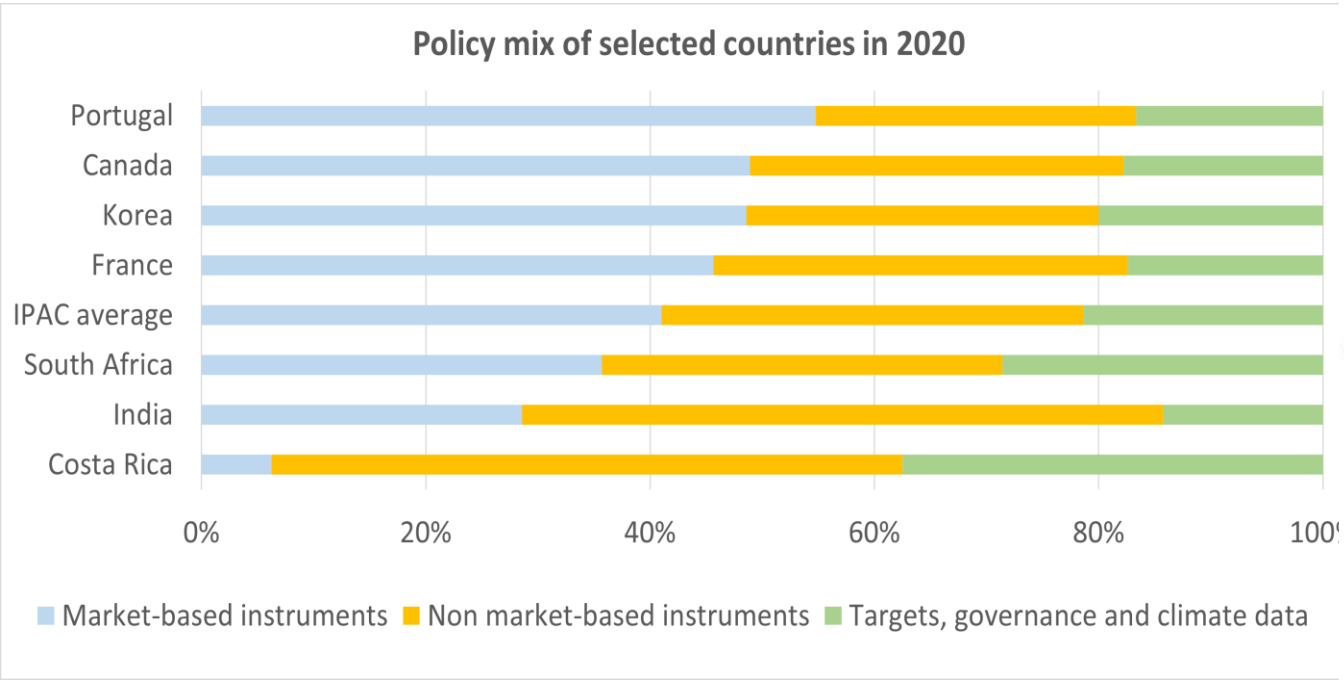
**Operationalisation:** relative concept using the percentiles of the in-sample distribution across all countries and years: 0 (low stringency) – 10 (high stringency)

# Climate action differs substantially across countries




Source: Nachtigall, D., et al. (2022), "The climate actions and policies measurement framework"

# Climate policies: Examples

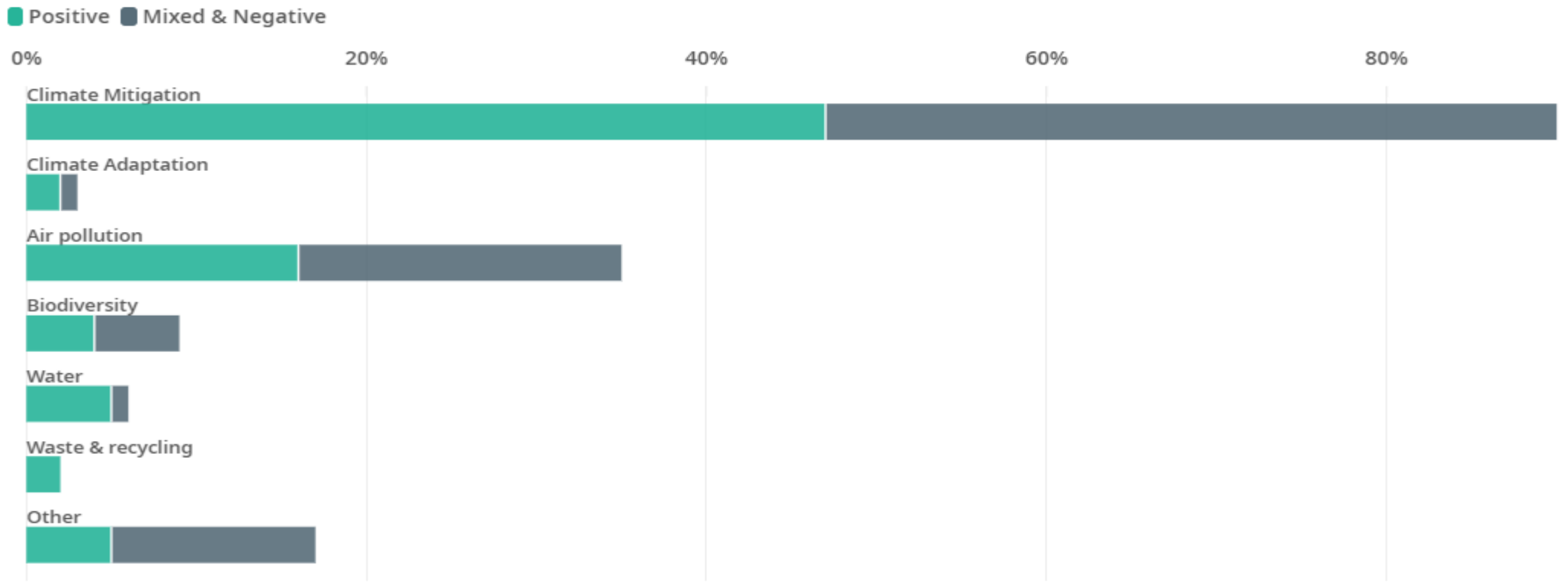



Climate policy stringency in France


Source: ShinyApps: Climate actions and policies measurement framework

# Climate measures accounted for most of environmental measures in recovery packages

Breakdown of recovery measures by environmental category (as a % of total spending)




Source: OECD Green Recovery Database (2021)

Note: categories can overlap.

# THANK YOU

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