THE FIGHT AGAINST CLIMATE CHANGE AND ECONOMIC PERFORMANCE

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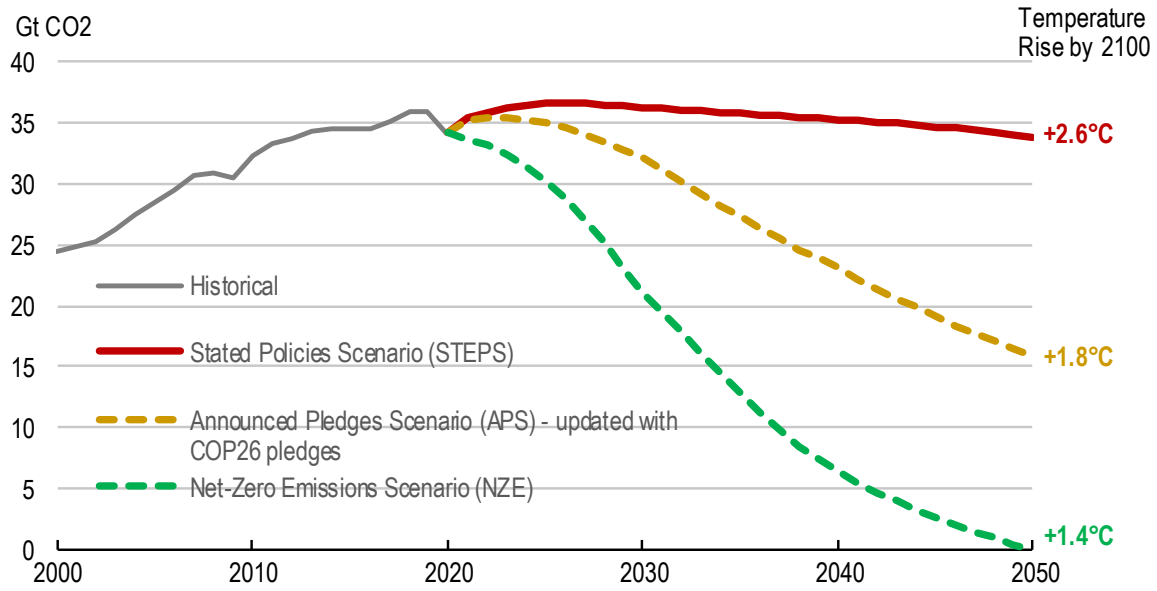
BETTER POLICIES FOR BETTER LIVES

Two main questions

- How far are we from the agreed decarbonisation targets?
- What are the effects of climate change mitigation and environmental policies on economic performance?

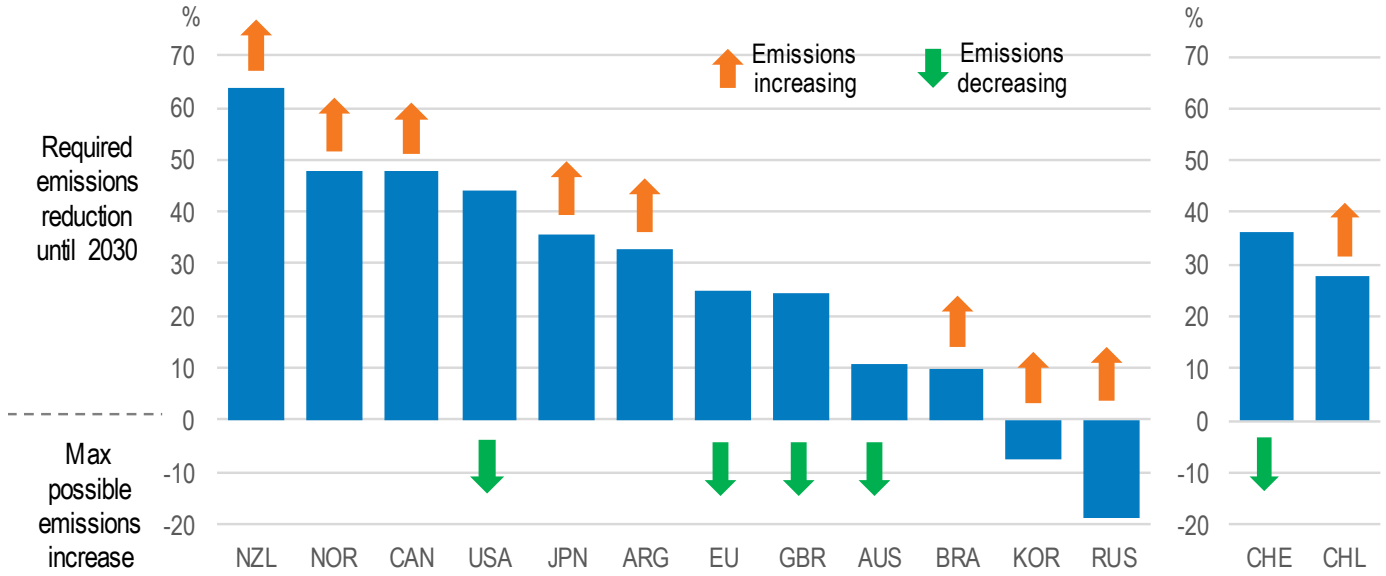
Progress towards decarbonisation is lagging

Global emissions scenarios (IEA)



Source: IEA, 2021

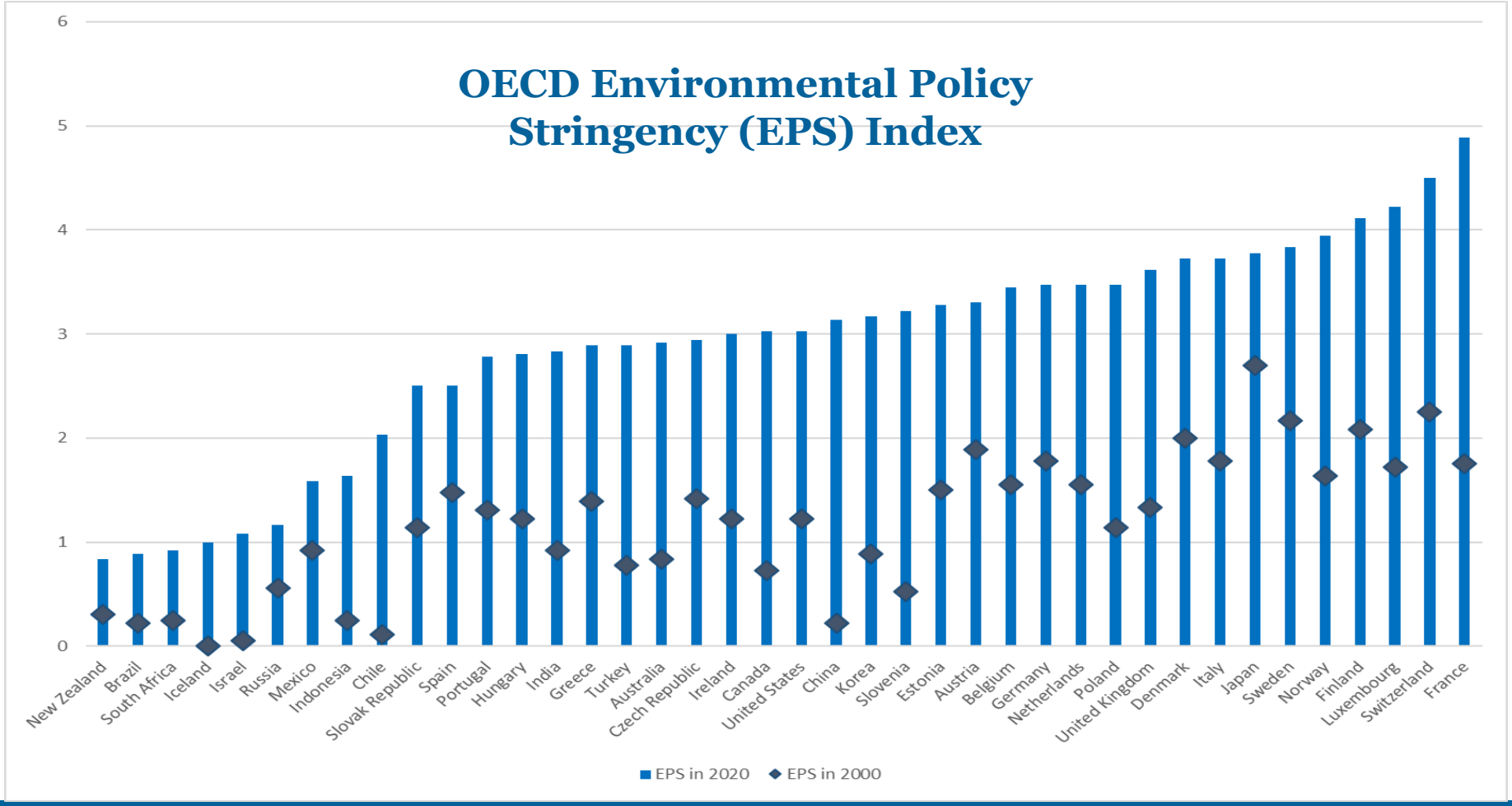
Distance from 2030 target



Source: Calculations based on UNFCCC National Inventory Submissions, 2021

Note – left figure: Orange arrows (upwards) identify countries whose emissions are increasing and green arrows (downwards) identify countries whose emissions are decreasing in the last 10 years. The figures represented by the blue bars are calculated as the percentage point differences between the level of emissions in 2019 or latest available year (ARG: 2012; BRA, CHL, KOR: 2016, MEX: 2013) and targeted level of emissions in 2030 (expressed with respect to the 1990 level). A positive blue bar shows the minimum required emission reduction for the country to meet its stated 2030 target. A negative blue bar shows the maximum possible increase in emissions for the country to meet its stated 2030 targets. For example, for the EU there is a 25 percentage point difference between the 2019 emission level and the 2030 estimated targets (height of blue bar). This results from the difference between the stated target of reducing emissions by 55% by 2030 relative to the 1990 level and the 30% reduction in emissions already achieved between 1990 and 2019. **Left panel**: Emissions and targets include land use, land-use change and forestry (LULUCF). **Right panel**: Emissions and targets exclude LULUCF.

Environmental policy varies across countries, raising concern about effects on performance, especially in polluting industries/sectors

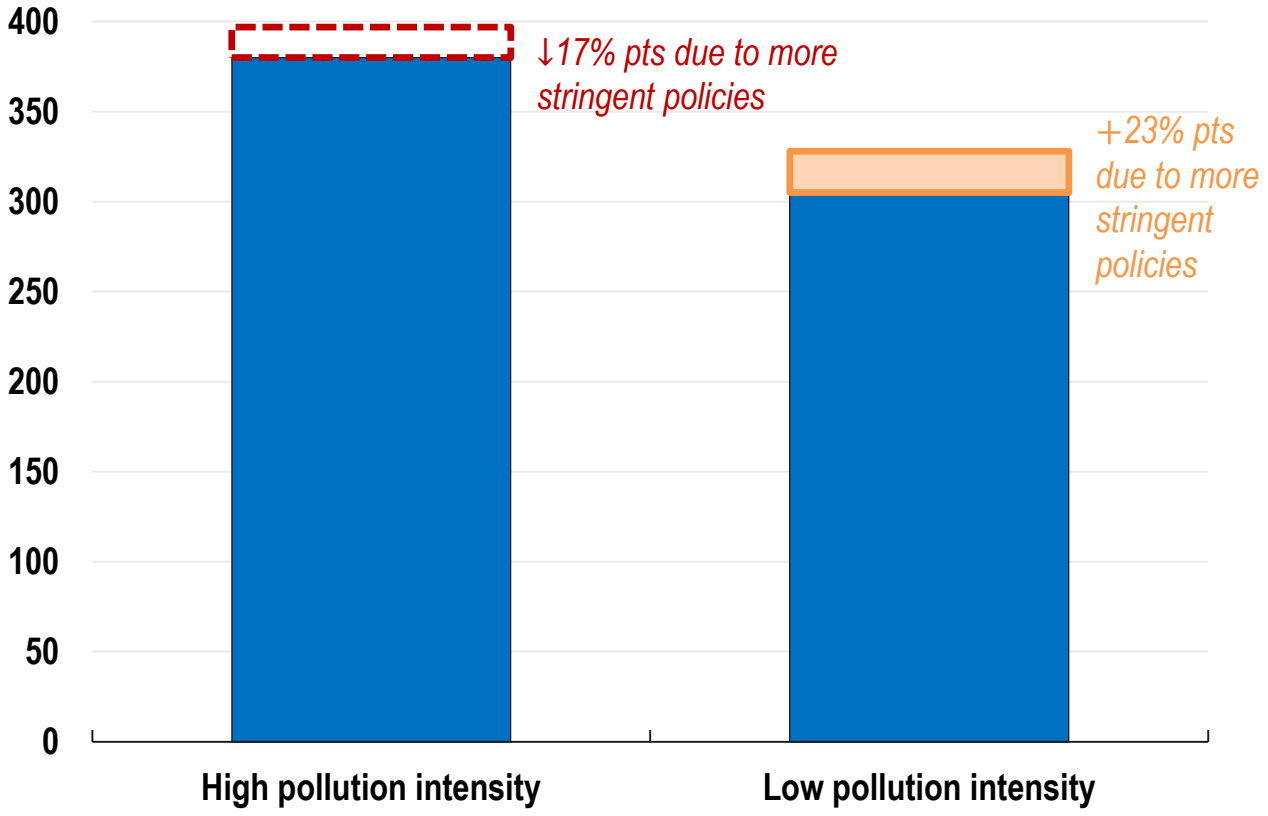


- Focus on climate, energy and air pollution policies.
- Coverage of 40 countries, and 13 policy instruments over three decades (1990-2020).

Economic effects of climate policies are small on aggregate, …

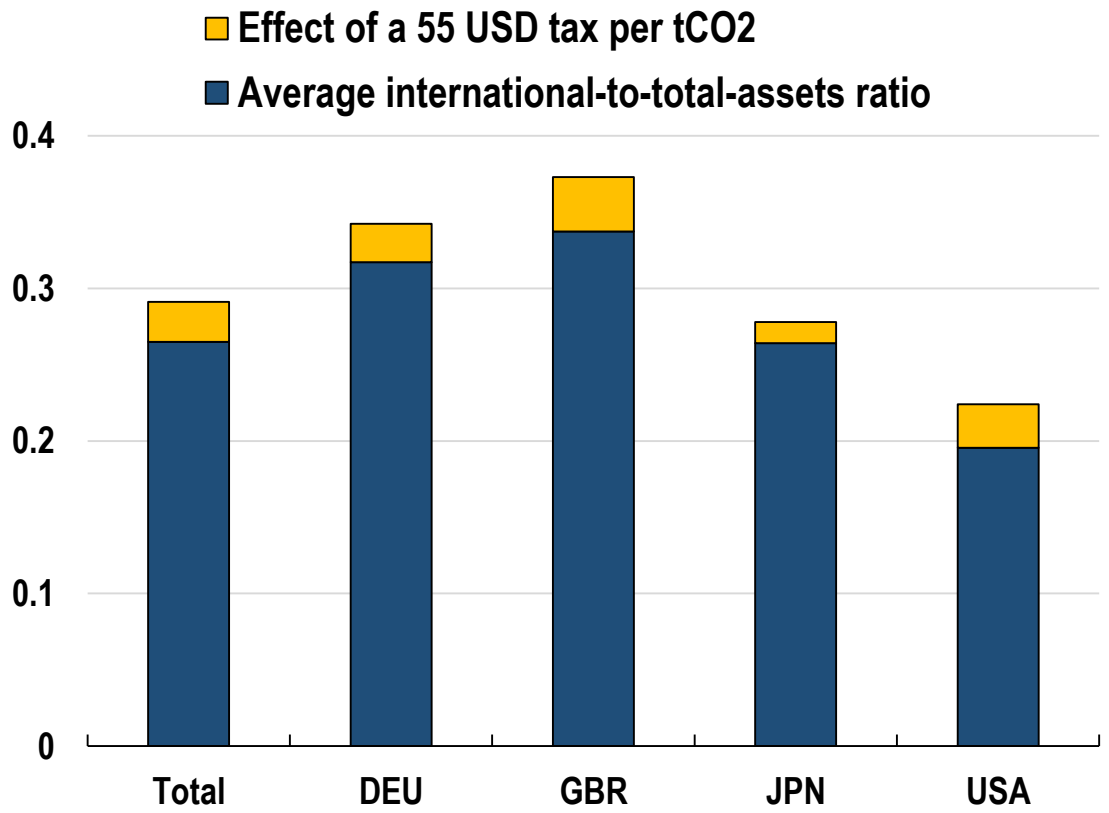
Trade/Exports

Increase in exports from most environmentally stringent countries to BRIICS 1995 to 2008, domestic VA component in exports, 1995 = 100



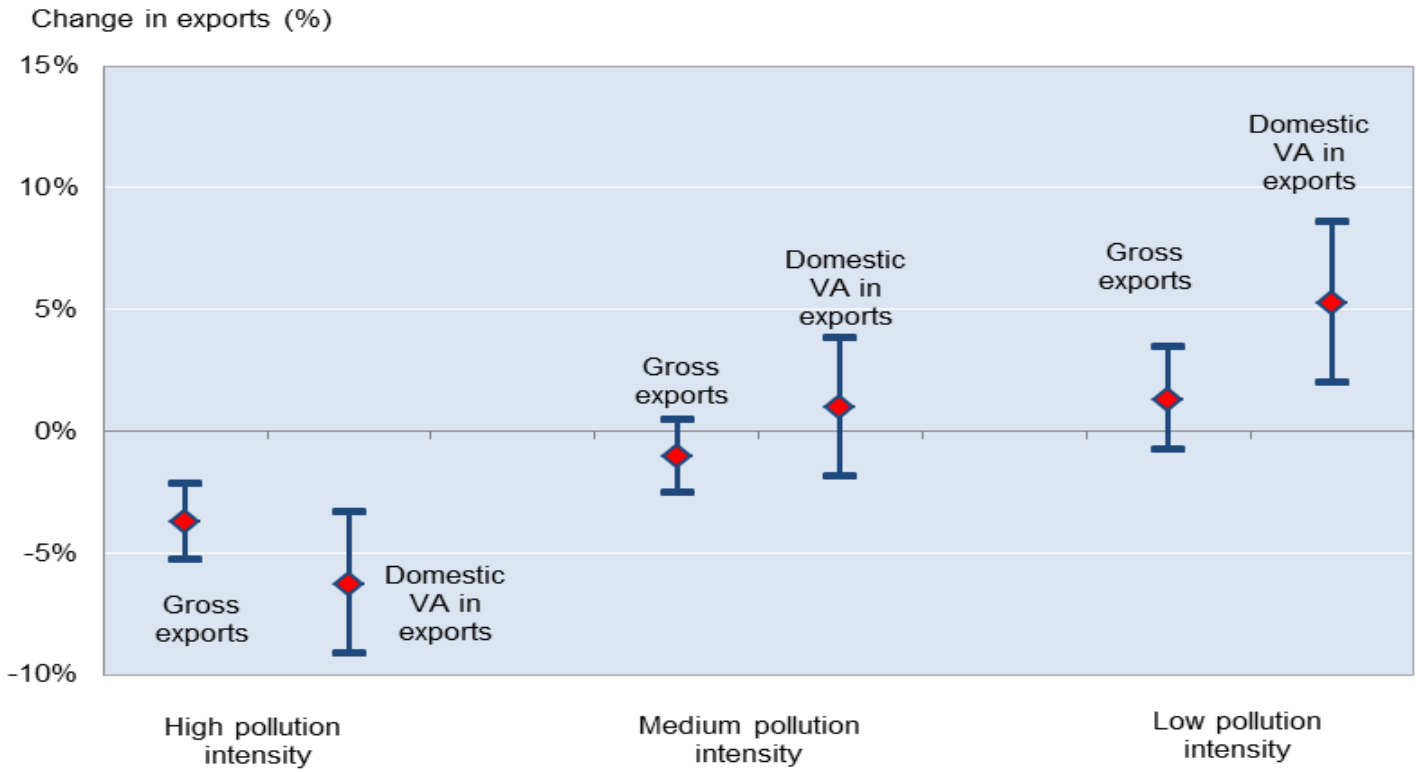
Outward FDI

Simulated effect of unilateral USD 55 carbon tax on outward FDI % points



Note: LHS: The figure shows the export increase from 1995 to 2008, between high EPS countries and BRIICS countries (typically with low EPS scores) in high- and low- pollution-intensity sectors. The green rectangles indicate increase in exports caused by differences in environmental policy stringency. The red indicates lost export due to differences in environmental policies. The dark blue parts show the effect of tariff liberalisations and the light blue shows other effects. RHS: These figures report simulated effects of the introduction of a carbon tax on the FDI ratio of listed firms.
Source: Kozluk and Timiliotis, (2016)

… but average effects mask heterogeneity across sectors and firms



=> A widening gap in environmental policy stringency across countries affects firms differently according to how polluting they are.

Source: Koźluk, T. and C. Timiliotis (2016), "Do Environmental Policies affect Global Value Chains? A new perspective on the pollution haven hypothesis", Economics Department Working Papers, https://doi.org/10.1787/5jm2hh7nf3wd-en

Since the onset of the war in Ukraine, fossil fuel prices have risen and become more volatile

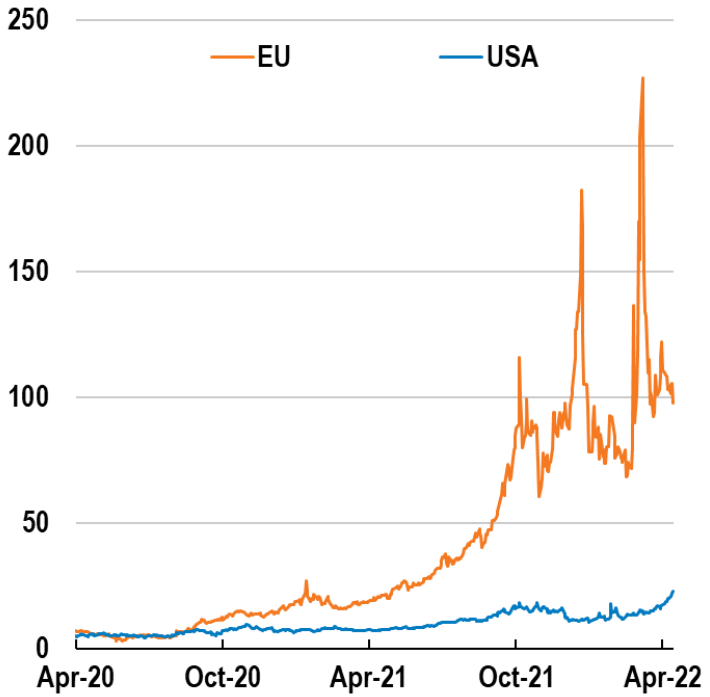
Oil

Brent, USD/barrel

Note: Latest data 14 April 2022.
Source: Refinitiv.

Gas

EUR/MWh



Note: Shows the evolution of TTF Neutral Gas Price for Europe and Henry Hub for the United States. Latest data 14 April 2022.
Source: Refinitiv; and OECD calculations.

Coal

Newcastle (fob), USD/Mt

Note: 6000 kcal/kg coal. Newcastle refers to Newcastle, Australia. Latest data 1 April 2022.
Source: Refinitiv; and OECD calculations.

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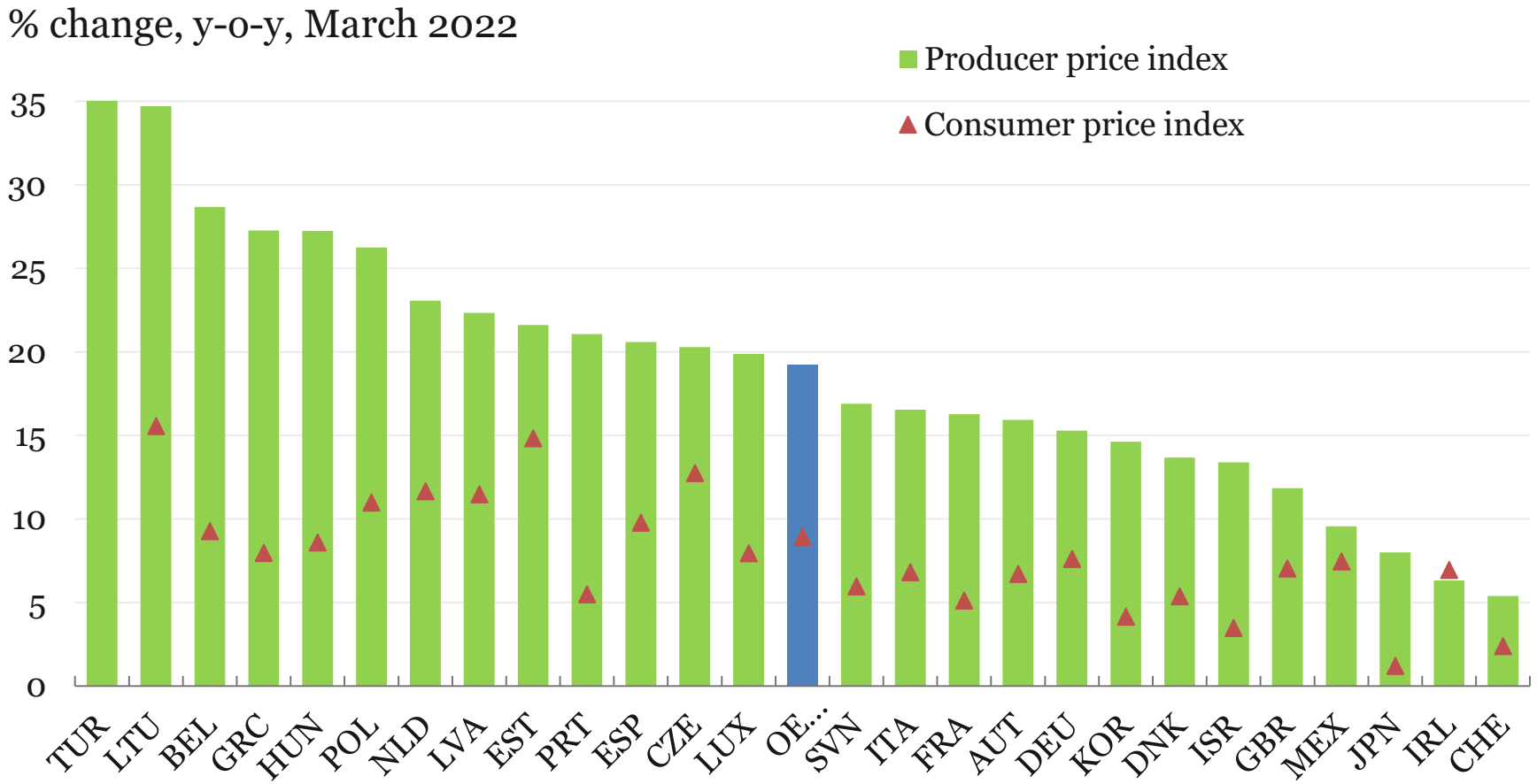
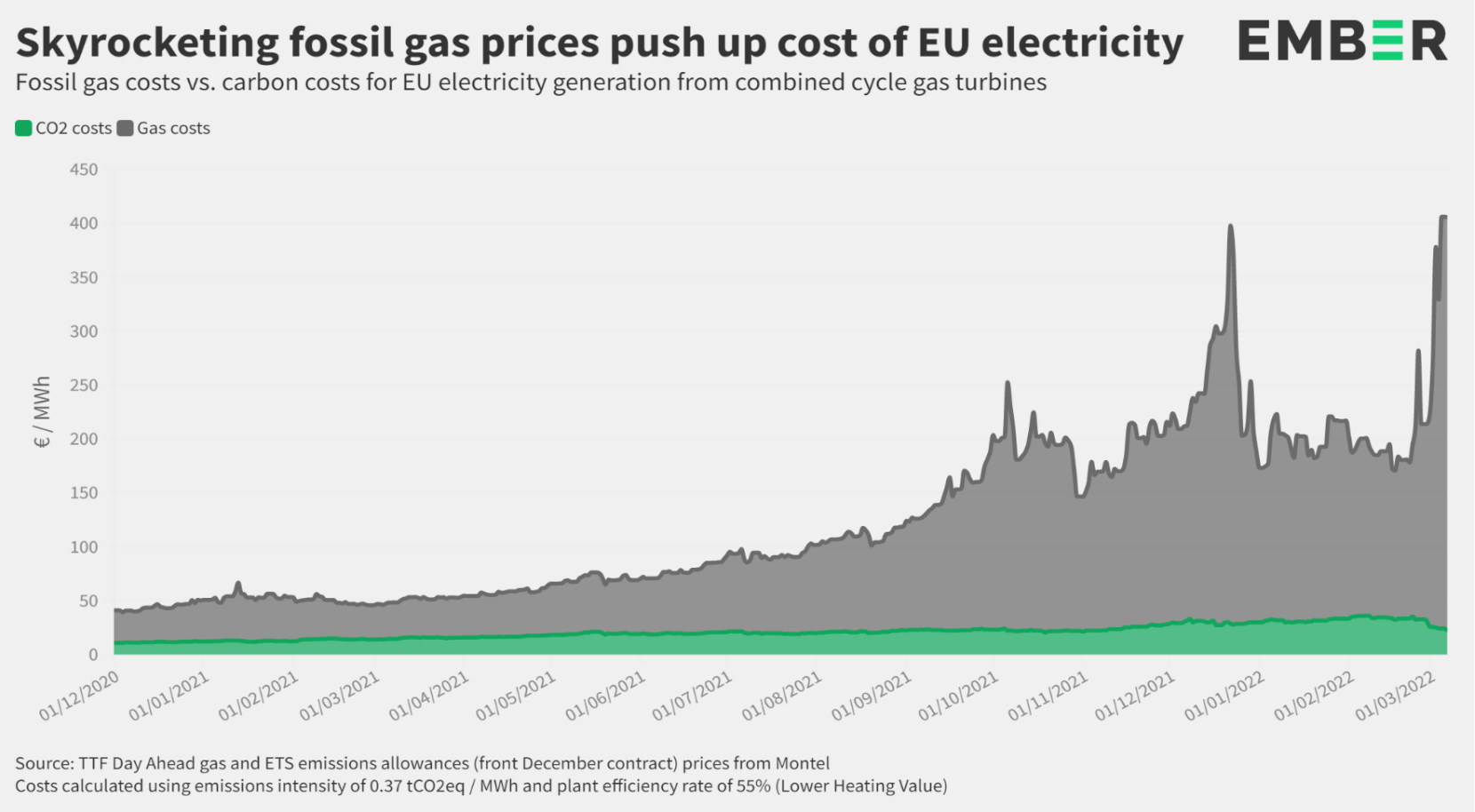
As a result, producer prices have risen more sharply than consumer prices



Note: Producer price index represents manufacturing in domestic markets. Consumer price index for euro countries and the euro area refers to harmonised price indices.
Source: OECD Prices database; and OECD calculations.

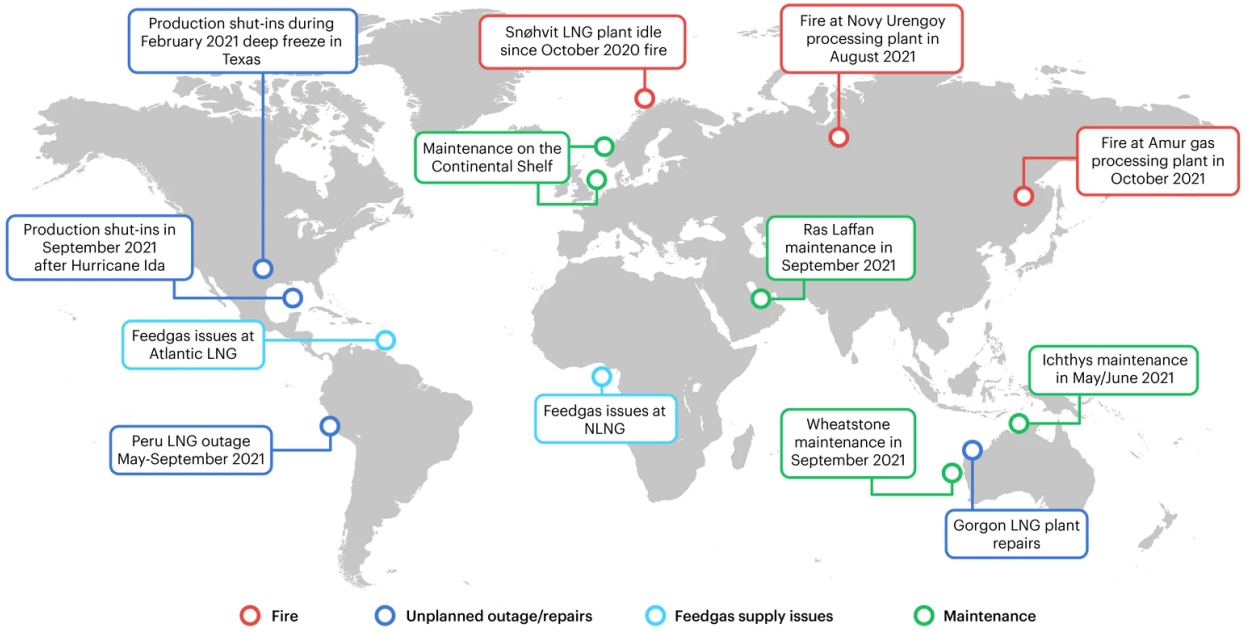
Carbon prices account for a small increase in prices, …



…. supply and demand factors play an important role

- Strong demand rebound from the pandemic.
- Decline in fossil fuel energy investments and insufficient scale-up in clean energy sources over the past years.
- Unforeseen maintenance and repair works at LNG plants.
- Weather-related factors (e.g. lower-than-average wind generation in Europe).
- Low-levels of gas storage and lower supply from Russia.

Key maintenance works and unplanned outages at gas plants in 2021



Source: [IEA, 2021]

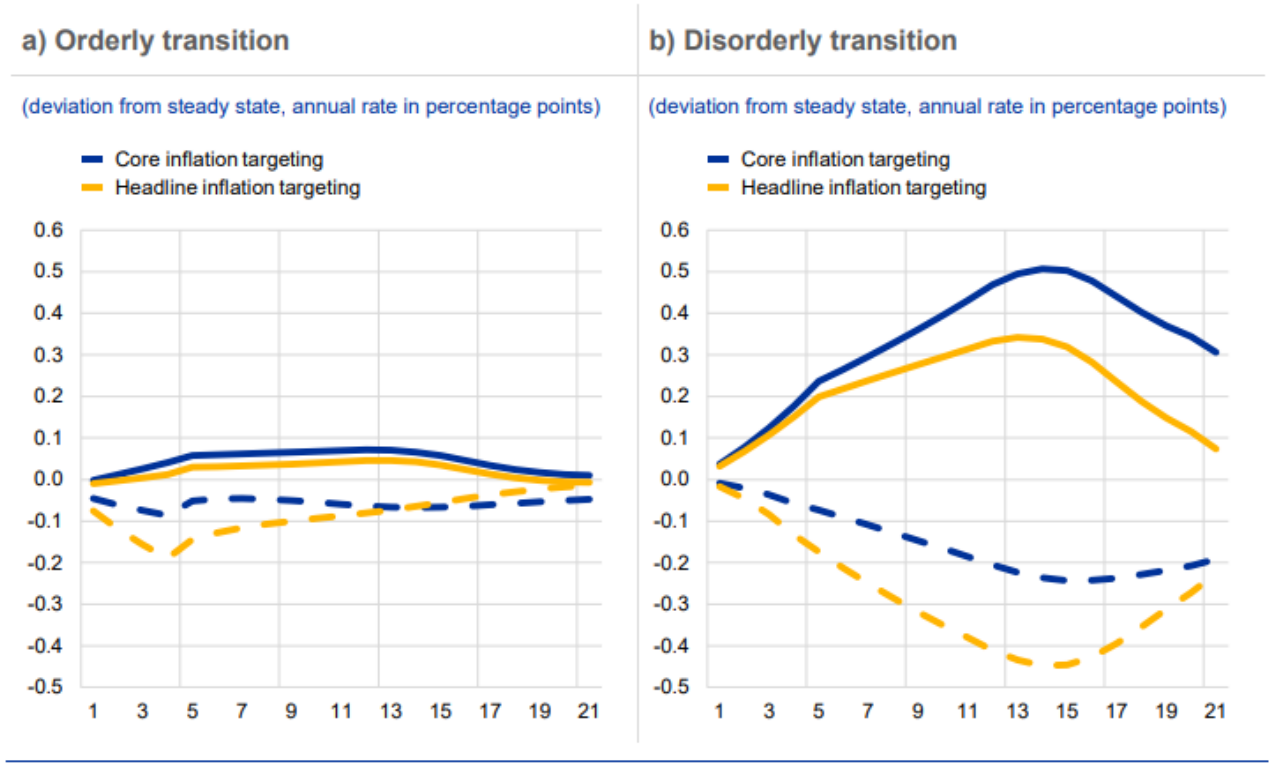
In the longer run, the green transition can affect prices via supply and demand factors

- During the transition, inflationary pressure can come from:
  - Capital: brown technologies (e.g., coal powered plants) are substituted with new green ones (e.g., wind farms). There can be frictions in global value chains.
  - Labour: There can be shortages of green skills and workers relocation frictions

- Once achieved, a successful transition can lead to:
  - Lower energy prices
  - Lower energy demand (because of efficiency gains)
  - More resilient energy supply chains (if RES intermittency is taken care of)
  - Fewer (less intense) climate-related shocks (e.g. food shortages)

Inflationary pressures are higher in disorderly low-carbon transitions

Impact of orderly and disorderly transition on inflation and GDP growth



Source: ECB simulations based on the scenarios in Allen et al. (2020).
Note: Headline inflation shown in solid lines, GDP growth in dashed lines.

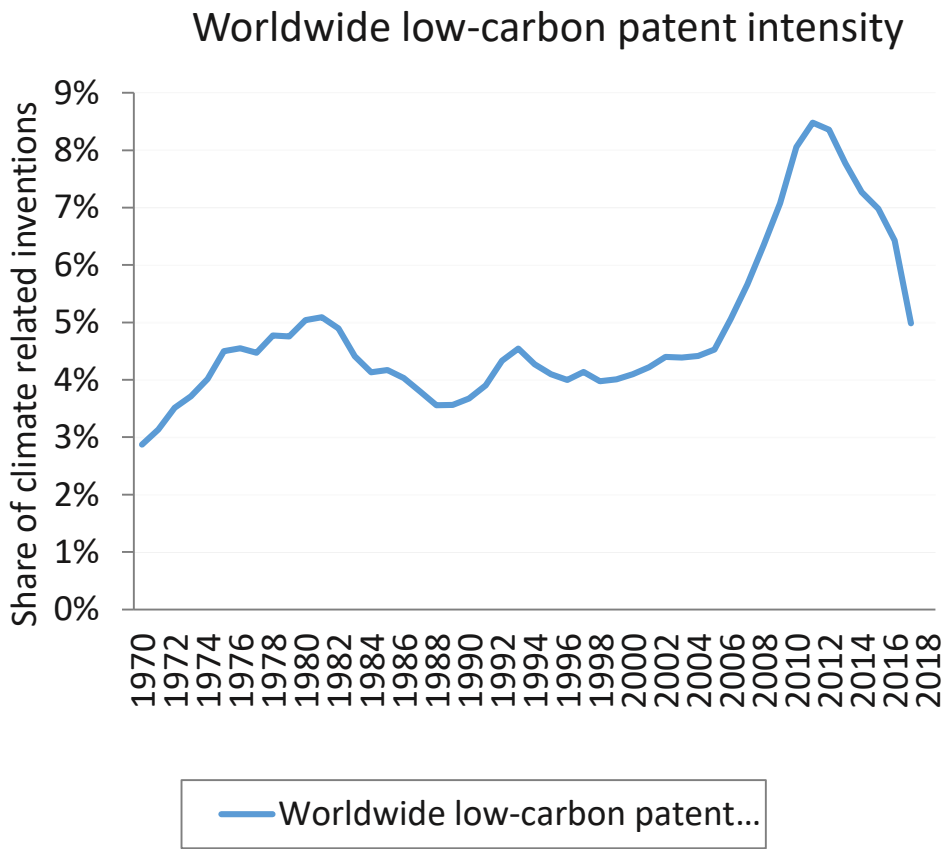
Well-designed climate policies with clear price trajectories mitigate inflationary pressures.

Source: ECB, 2021: Climate change and monetary policy in the euro area

Innovation can reduce inflationary pressures by reducing the cost of clean technologies

- Innovation in low-carbon technologies can lower the cost of green technologies (e.g. clean energy, energy efficient appliances, green hydrogen etc.).
- Reducing differences in relative prices between clean and dirty technologies, helps lower inflationary pressures from adopting new technologies.
- But patent filings in low-carbon technologies – one indicator of clean innovation activity – have declined over recent years.

→ Additional policy support may be needed to accelerate innovation in low-carbon technologies.



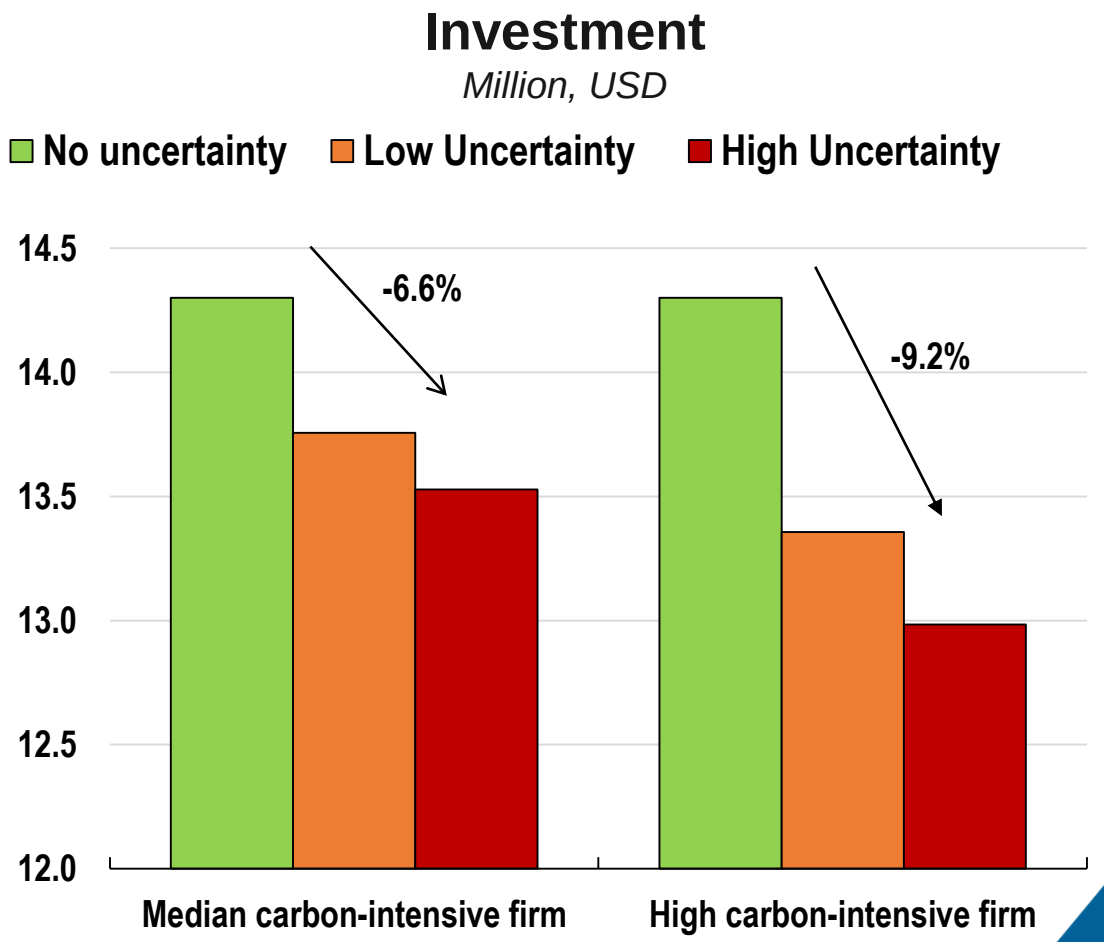
Source: Authors' calculations based on PATSTAT.

Climate policy uncertainty can lower investments – in particular for carbon-intensive industries

- Uncertainty can arise from frequent policy reversals and lower firm investments, in particular in carbon-intensive sectors.

- Investments in clean technologies can reduce price differentials between dirty and clean technologies.

→ Clear policy trajectories are needed to provide longer-term investment horizons to firms to shift to clean technologies.



Source: Dechezleprêtre, A., T. Kruse, and C. Berestycki (2022). Measuring and Assessing the Effect of Environmental Policy Uncertainty, Economics Department Working Paper, (forthcoming).

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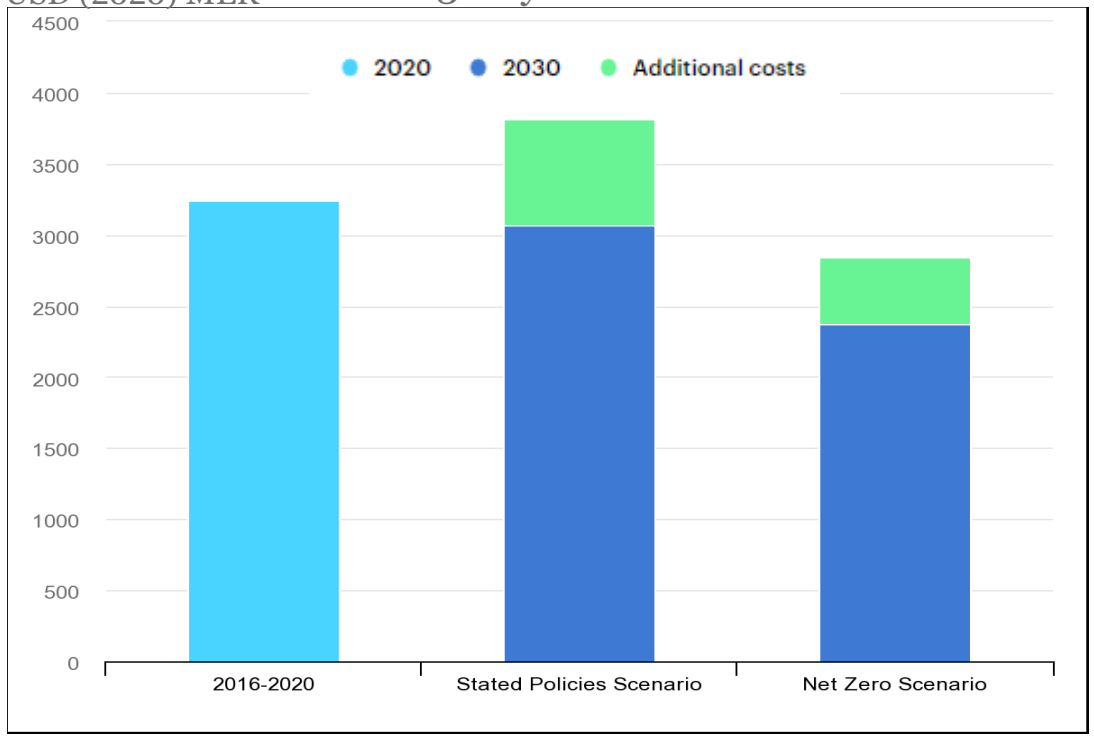
A well-managed clean energy transition can help reduce exposure to fossil fuel prices and market volatility

- Electrifying residential heating and cooling.
- Accelerating the switch towards electric vehicles.
- Improvements in energy efficiency.
- Increasing investments in low-carbon energy and improving grid flexibility.
- Accelerate deployment and uptake of low-carbon technologies.
- Support measures households to cope with high up-front costs of low-carbon technologies

Impact of a commodity price shock on average household energy bills in advanced economies in 2030 by scenario

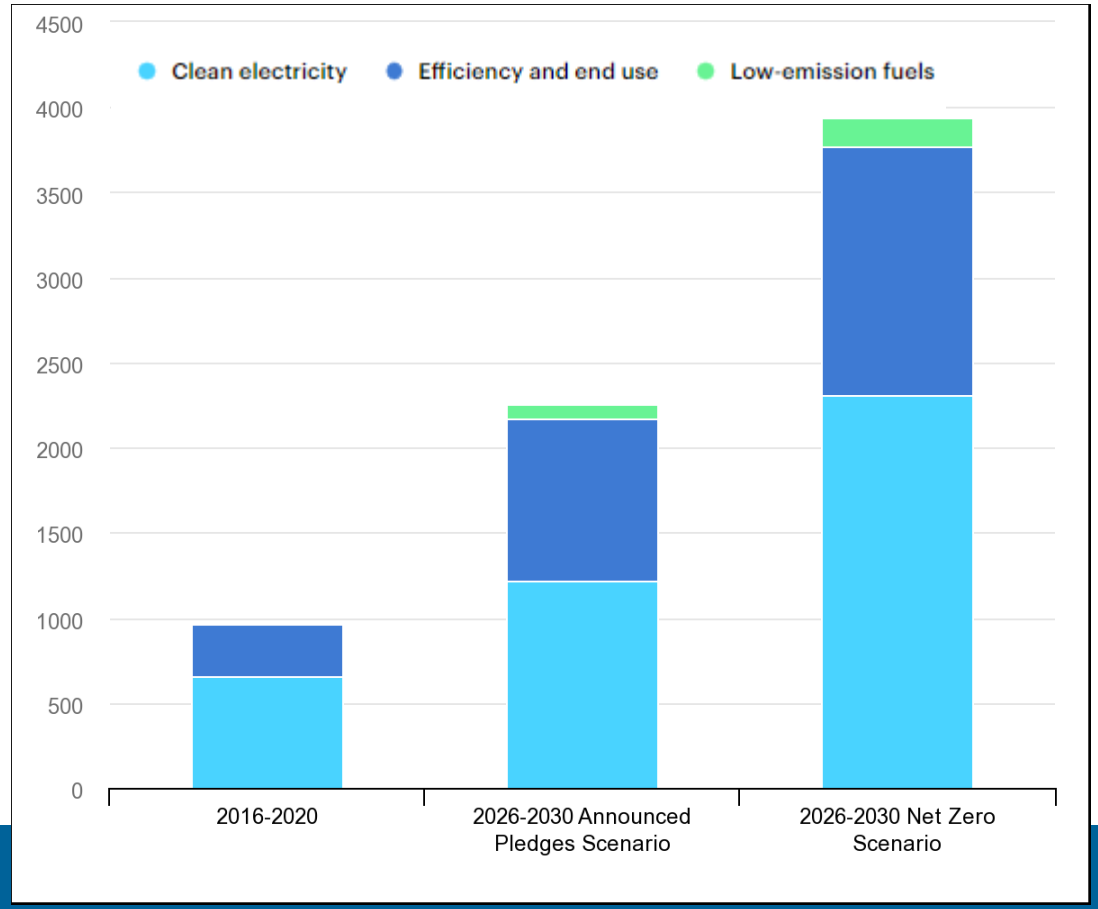


Source: IEA, 2021

Accelerated low-carbon energy investments reduce the exposure to fossil fuel prices and market volatility

- Much stronger and accelerated investment in low-carbon energy technologies is needed to reduce dependency on fuel market prices and volatility.
- To get the world on track for net zero emissions by mid-century clean energy investments need to increase more than 3-fold to reach USD 4 trillion annually by 2030.
- Energy efficiency is a powerful tool to reduce exposure to fuel market volatility and enhance resilience.

Annual average clean energy investments by technology and scenario



Source: IEA, 2021