CAUCASUS, CENTRAL ASIA, AND MONGOLIA
CCAMTAC REGIONAL CAPACITY DEVELOPMENT CENTER

The Eighth CAREC Think Tank Development Forum (CTTDF)

The Climate Challenge: Thinking Beyond Borders for Collective Action

Pathways to Sustainable Development: Achieving High Economic Growth While Minimizing Carbon Footprint

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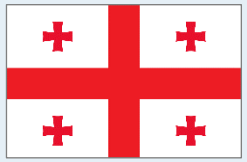
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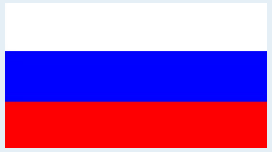
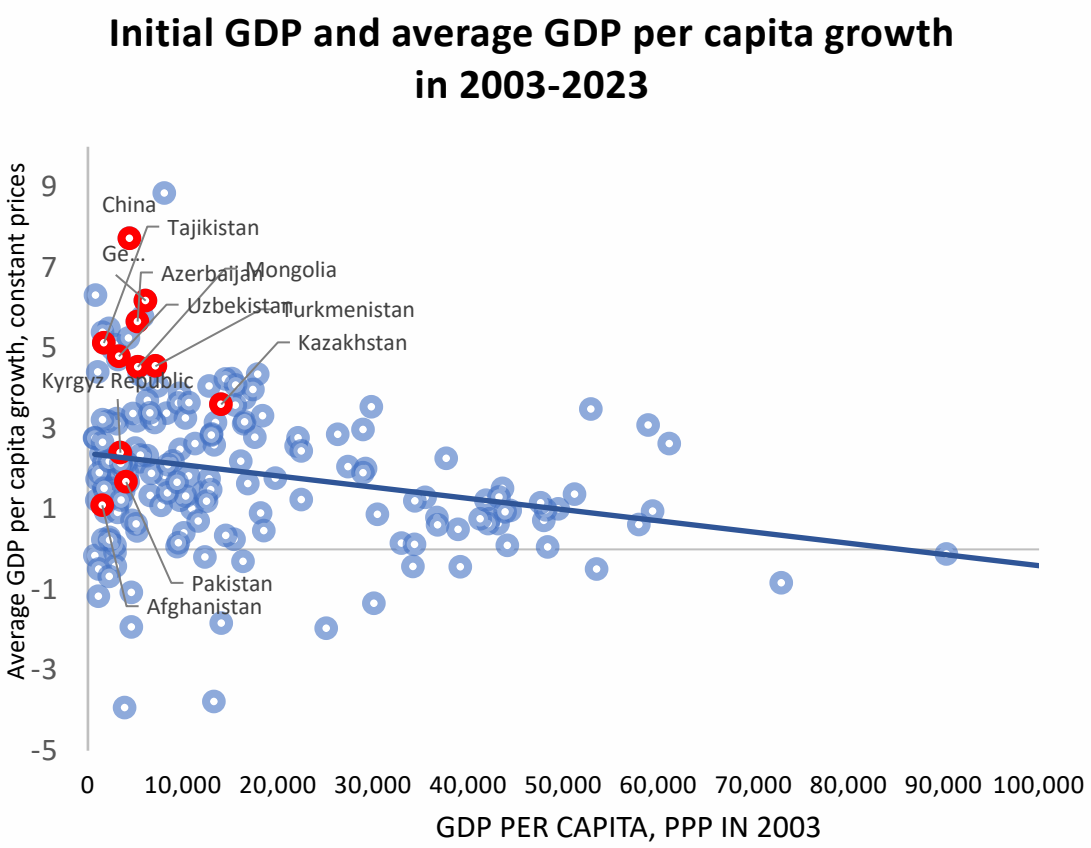



Ministry of Economy and Finance

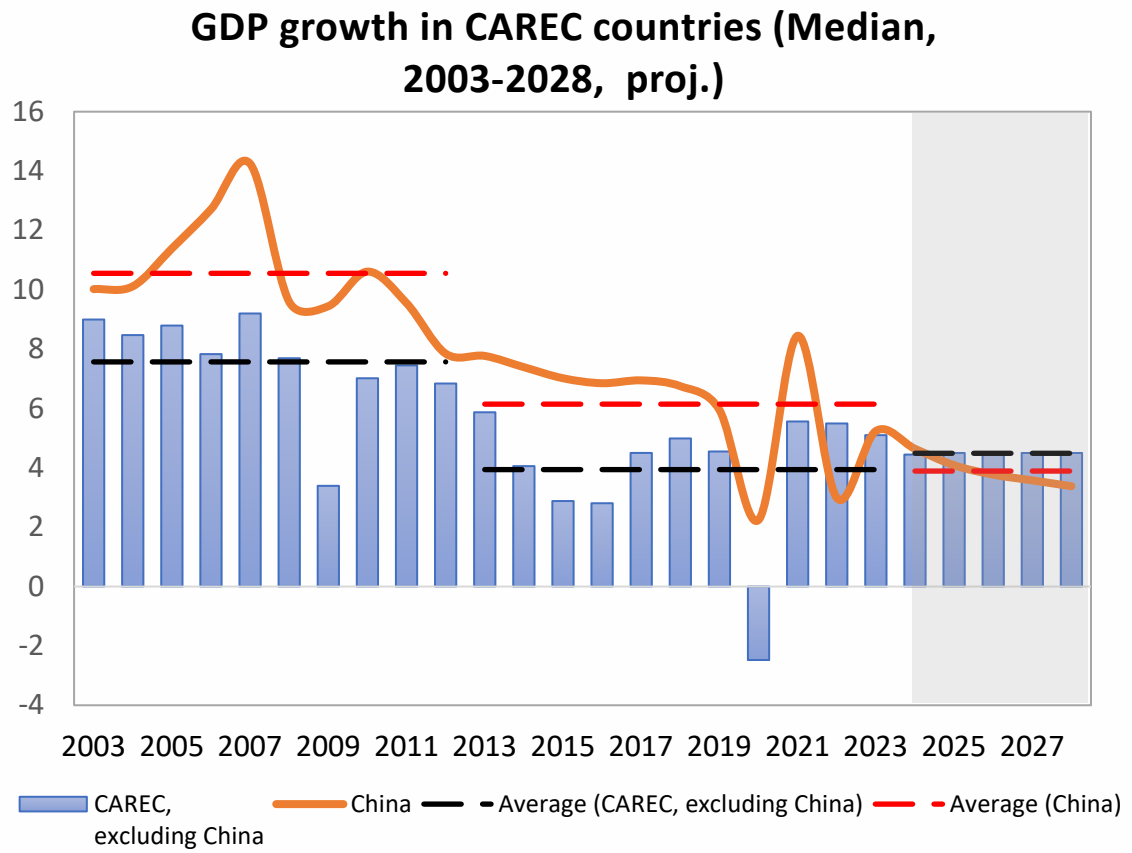
Agenda

- Growth , Outlook Without further Reforms, and Climate Indicators
- Policy Options to Mitigate, Adapt and Transition
- Indicative Scenarios
- Complementary Reforms and Conclusions

Following strong growth in the past, average growth in the CAREC region has been declining



Source: IMF World Economic Outlook

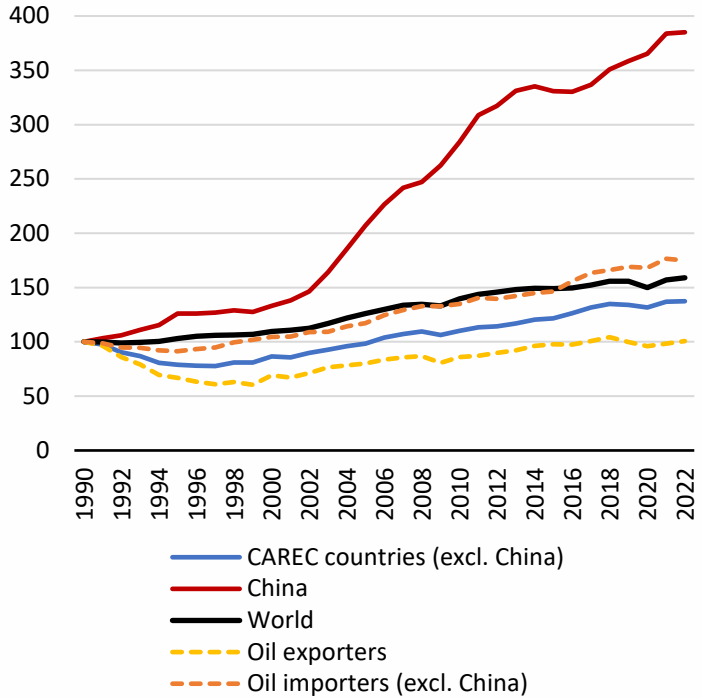


Source: IMF World Economic Outlook

GHG emissions have continued to rise, following a temporary decline in several CAREC countries during the early 1990s

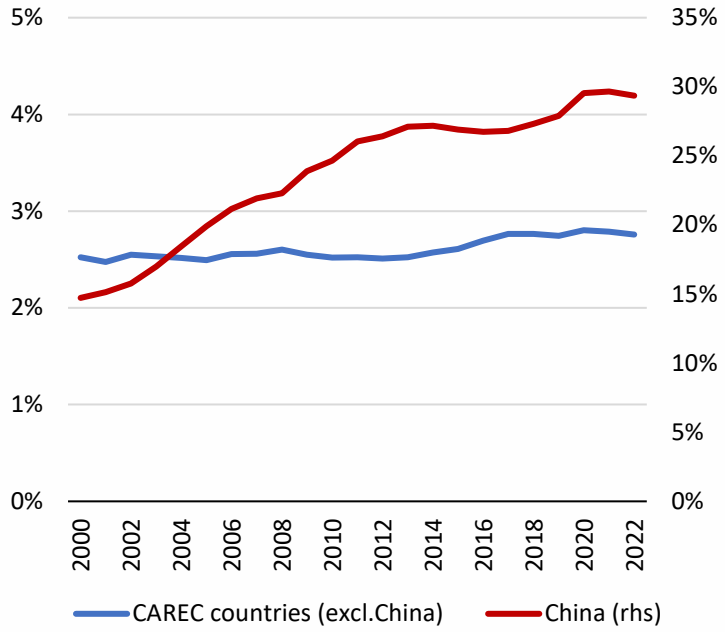
During the last two decades GHG emissions have been growing in CAREC economies

Growth of GHG emissions
(Index, 1990=100)



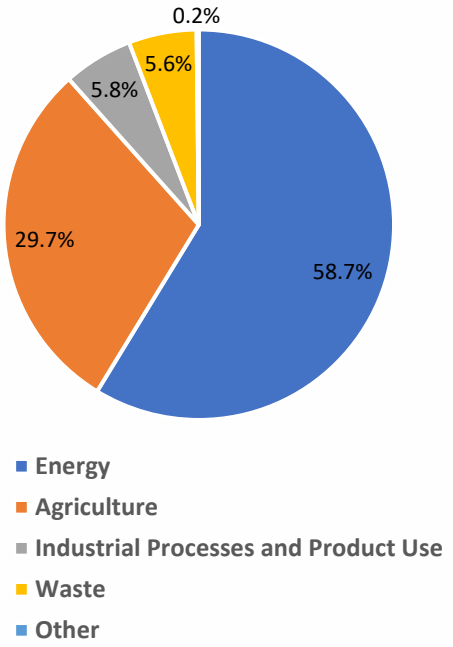
While small (excl. China), the share of GHG emissions in global emissions increased

Shares in Annual Global GHG emissions
(percent)



Energy-related activities and agriculture generate the greatest amount of GHG emissions

Contributions to GHG emissions be sector in CAREC countries
(percentage of total, excl. China)



Source: IMF Climate Change Indicators Dashboard, August 1, 2024.

What is driving GHG emissions: Relative contributions of key economic trends and drivers

Four factors:

I. Size in terms of **Population**

II. How much is produced per person - **GDP per capita**

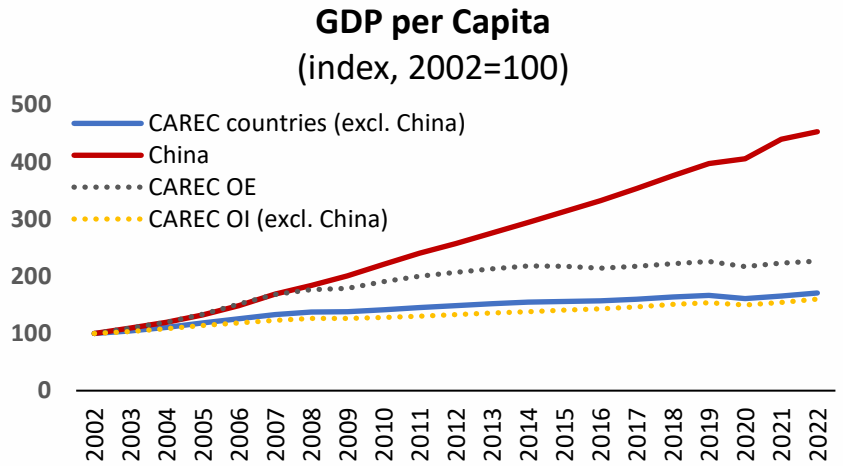
III. How energy intense is production (**Energy consumption / Real GDP**)

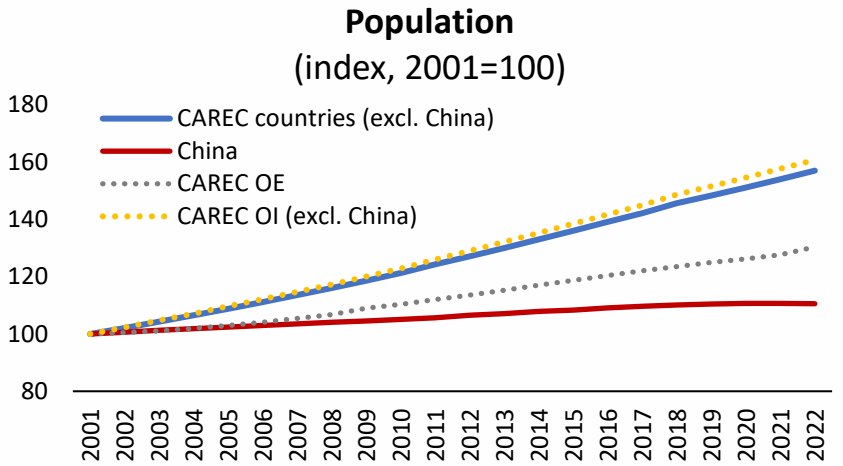
IV. How GHG intense is the energy consumption (**GHG emissions/ Energy consumption)**

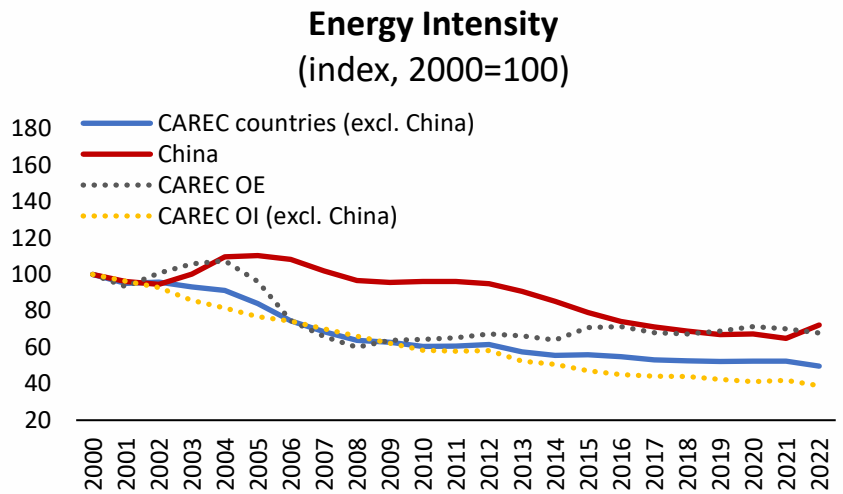
$$GHG\ Emissions = Population \times \frac{Real\ GDP}{Population} \times \frac{Energy\ Consumption}{Real\ GDP} \times \frac{GHG\ Emissions}{Energy\ Consumption}$$

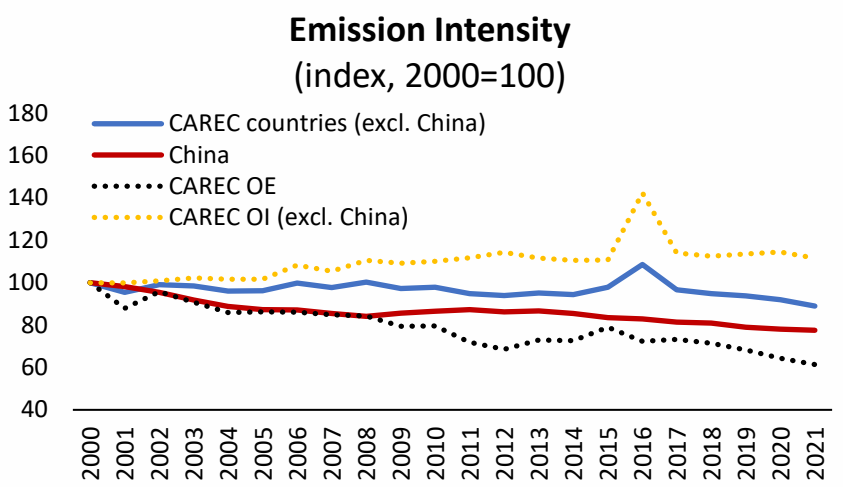
1/ Kaya identity, see Kaya and Yokobori, 1997

What is driving GHG emissions: Relative contributions of key economic trends and drivers









Selected NDC mitigation targets compared to Bau until 2030 (IMF est.)	
AZE	-38.8%
CHN	-14.7
KAZ	-8.1%
KGZ	-42.4%
MNG	-15.4
TJK	-25.6%
TKM	-20%

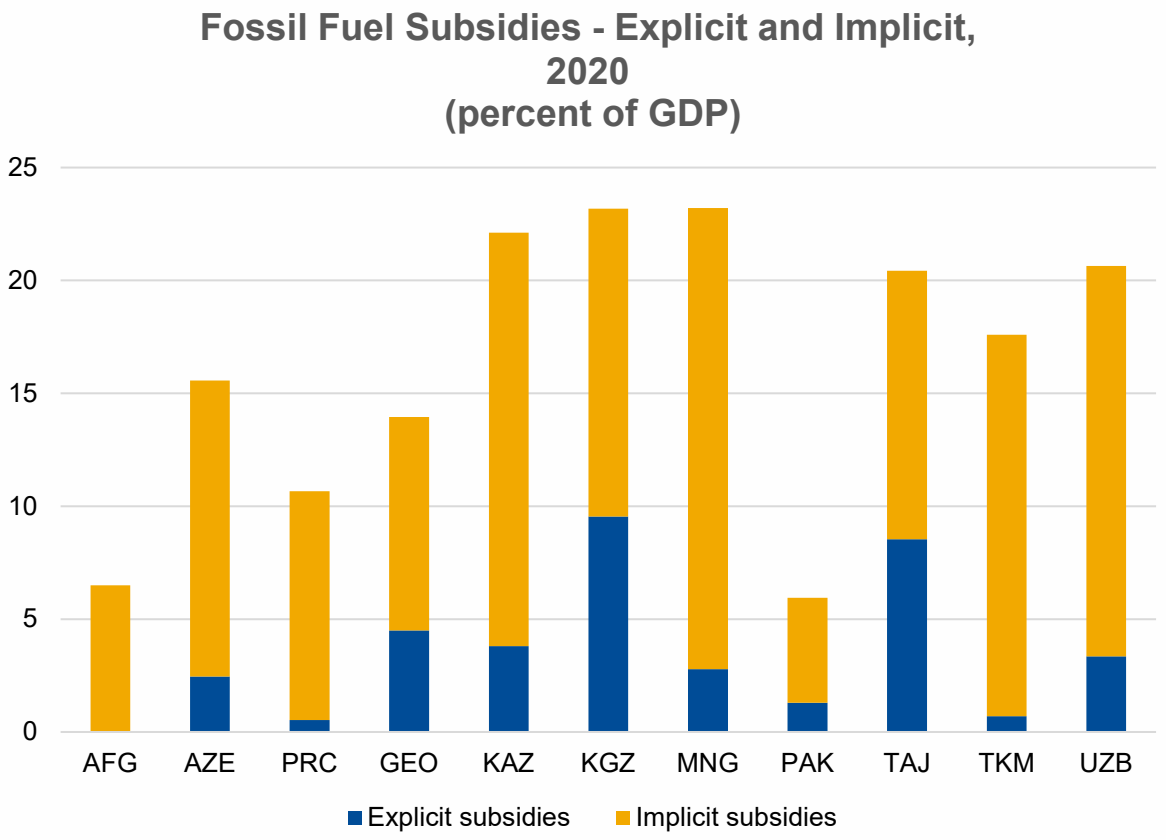
Sources: IMF World Economic Outlook, EIA, Our World in Data (Energy), Kaya and Yokobori, 1997, IMF Climate Change Indicators Dashboard, August 1, 2024, IMF staff calculations

Climate policy options need to be tailored to country circumstances

	Specific areas (Examples)	Common areas
Mitigation	• **Carbon pricing**, including carbon tax/ETS, feebates in transportation and energy • **Public investment** in green innovation and infrastructure • **Regulatory reforms** (e.g., energy efficiency regulations)	• Building **fiscal buffers**, e.g. based on fiscal risk analysis • The need for **financial and technical support** from advanced to developing economies • Strengthening **financial institutions' management** of climate risks • **Domestic resource mobilization**, including developing capital markets and blue/green finance • Improving **climate data** and standards • Strengthening **public financing management**, for example, climate budget tagging • Strengthening **social safety nets** and active labor market programs
Adaptation	• Resilient infrastructure, agriculture, and water supply	
Transition (to a low-carbon global economy)	• Developing a **medium-term fiscal framework**, accounting for the global transition to a low-carbon economy • Economic diversification away from fossil fuels	

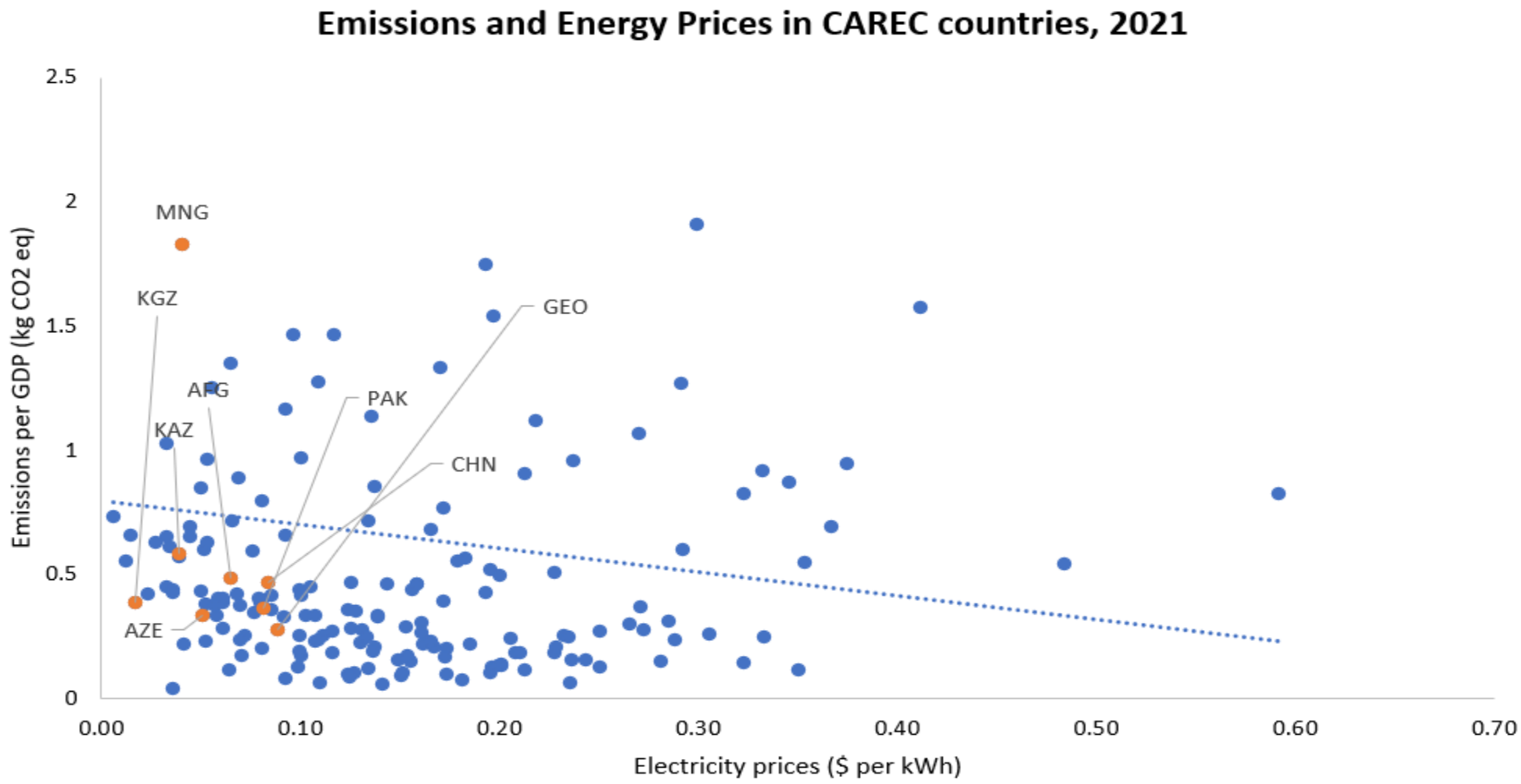
Strengthening market signals would help reduce energy intensity: Carbon pricing and reduction of fossil fuel subsidies

- **Carbon pricing**, including carbon tax/ETS, feebates in transportation and energy
- **Subsidies**
  - Explicit subsidies reflect underpricing due to supply costs being greater than prices paid by users
  - Implicit subsidies reflect the difference between supply costs and socially efficient prices (incorporating the cost of negative externalities of fossil fuel use and foregone consumption tax revenues), exclusive of any explicit subsidy



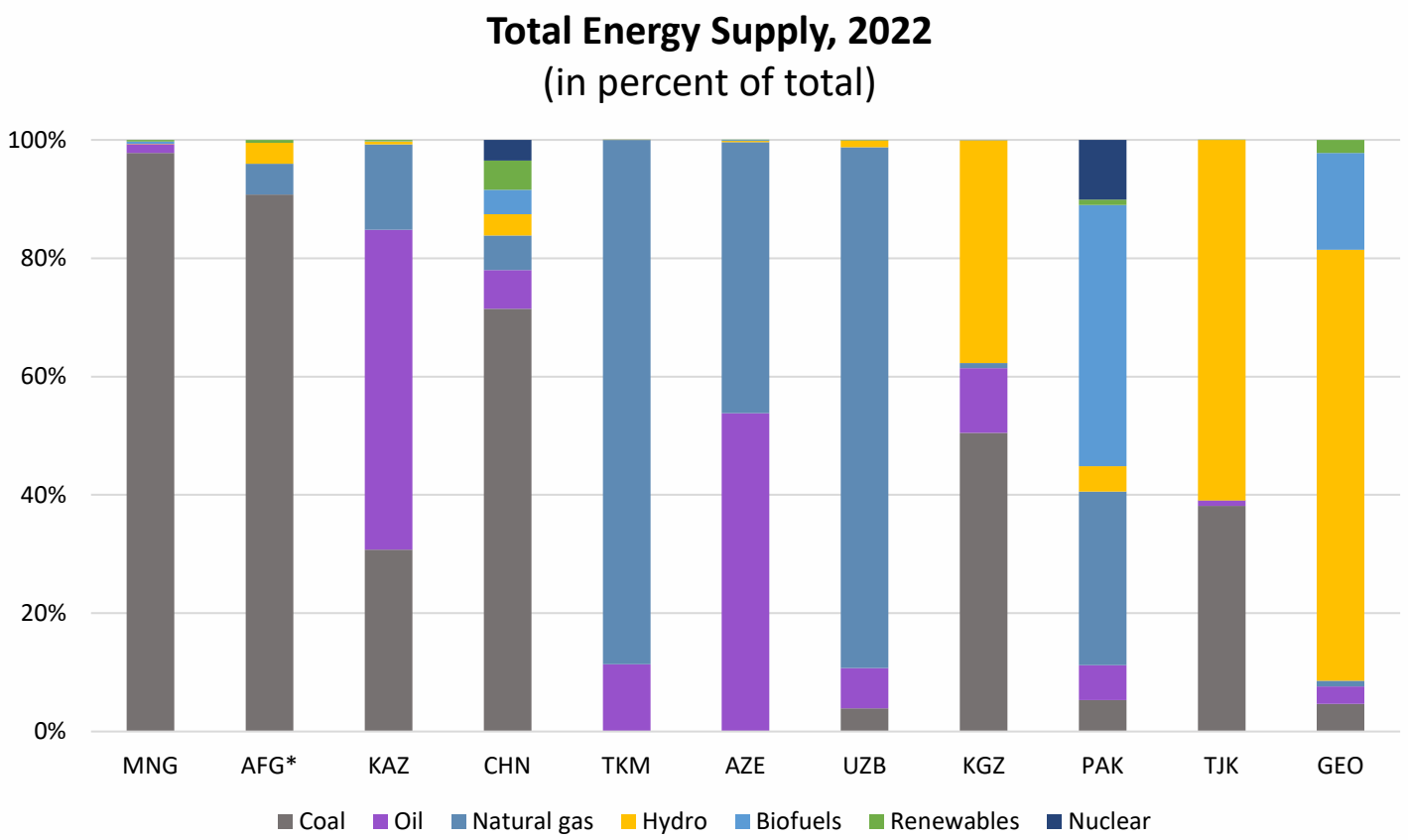
Source: International Monetary Fund. Climate Change Indicators Dashboard, August 1, 2024, https://climatedata.imf.org/pages/access-data

Higher energy prices tend to be correlated with lower emissions



Source: Climate Watch Database for the GHG emissions; IMF World Economic Outlook; Cable.co.uk

A cleaner energy mix could help reduce emission intensity



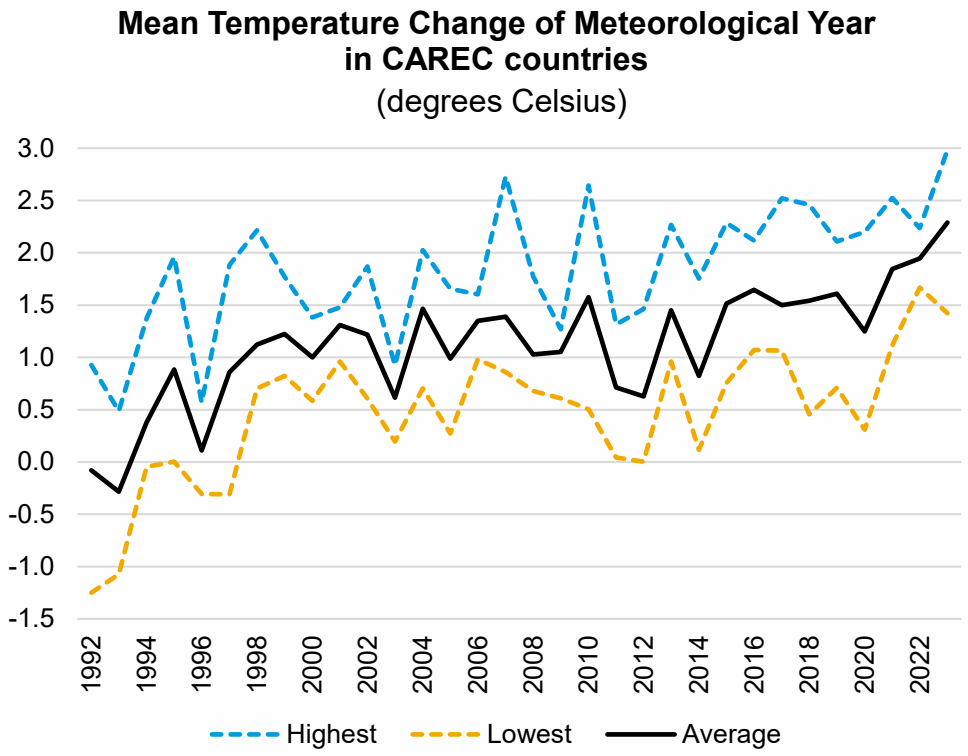
Note: Total energy supply in Afghanistan in 2021
Sources: IEA, EIA, and IMF staff calculations

Mitigation – emission intensity

- Development of renewable energy sector
- Public investment
- Regulatory reforms (e.g., energy efficiency regulations)
- In particular, for oil/gas exporters development of non-hydrocarbon industries as engine of growth

Even with strong mitigation, the anticipated global increase in temperature necessitates adaptation

Increase in mean temperature



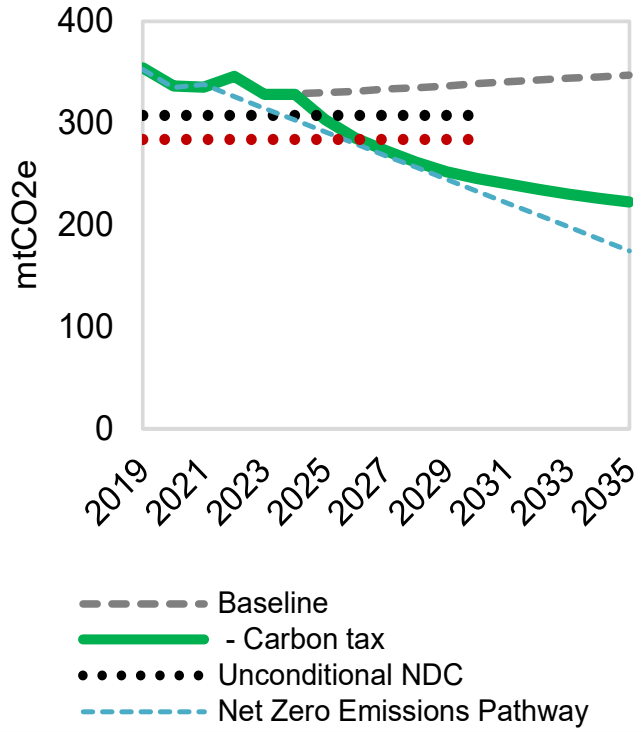
Adaptation

- Agricultural sector is especially exposed to climate related risks
- Resilient infrastructure – e.g., measures to improve irrigation and water management, expand use of climate smart technologies
- Increased support to vulnerable groups will be key
- Partnering with development partners

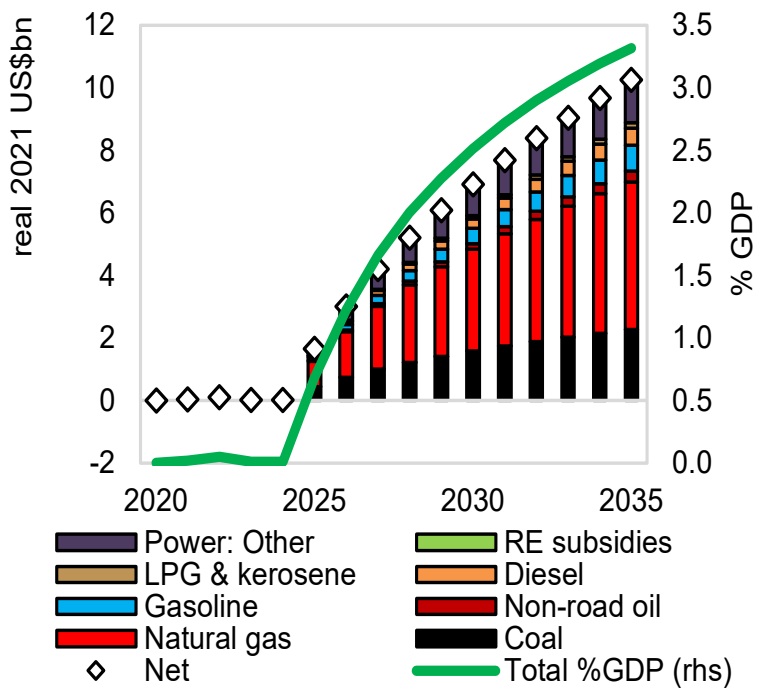
Source: IMF Climate Change Indicators Dashboard. August 2024. Temperature change is reported with respect to a baseline climatology corresponding to the period 1951-1980.

Scenario analysis (illustrative): (1) Gradual introduction of a carbon tax

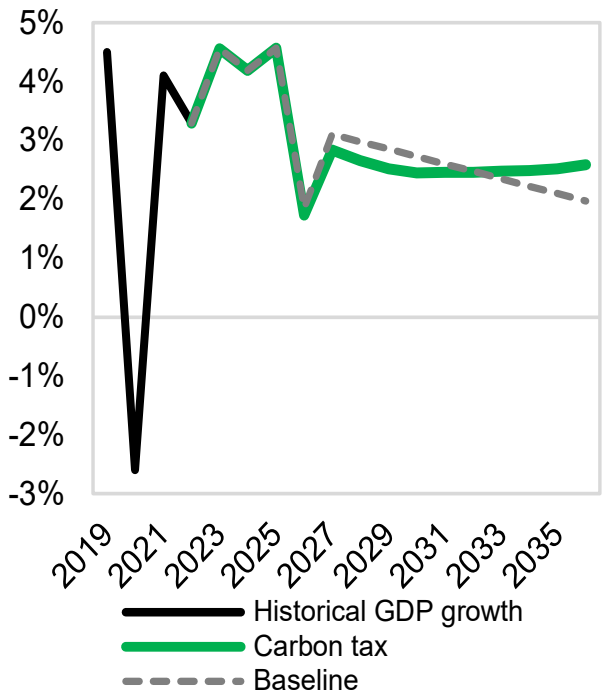
GHG Emissions



Revenue Impact



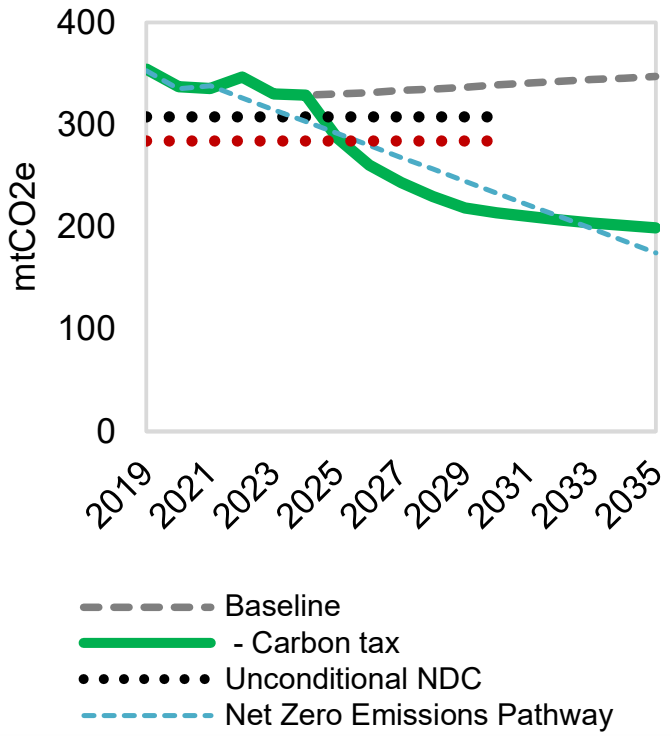
Growth Impact



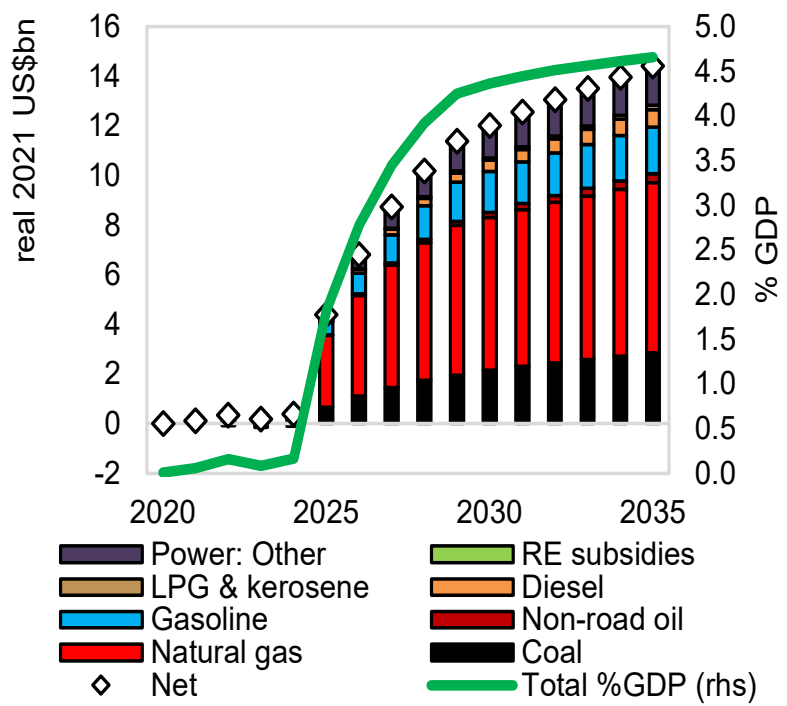
Sources: IMF World Bank: Climate Policy Assessment Tool, See also IMF working paper WP/23/128 and here

Scenario analysis (Illustrative): (2) gradual introduction of a carbon tax and gradual phasing out of fossil fuel subsidies, exemptions, price controls

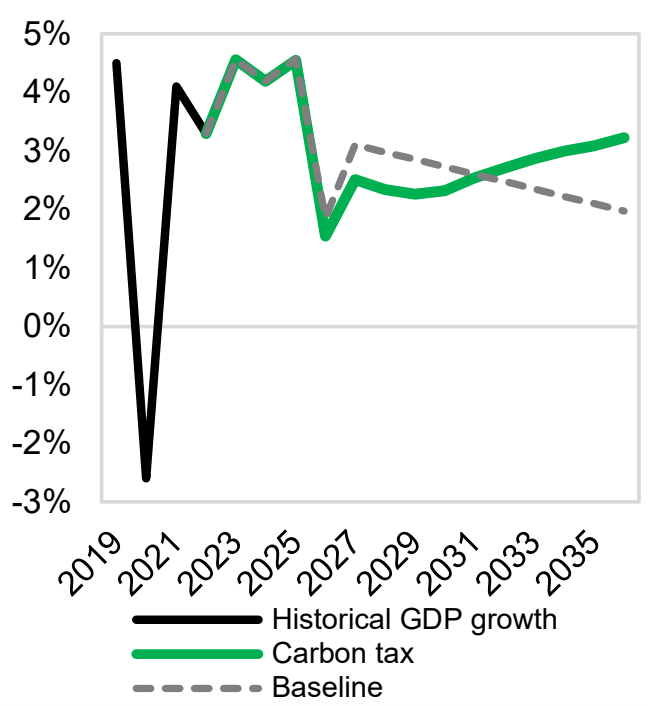
GHG Emissions



Revenue Impact

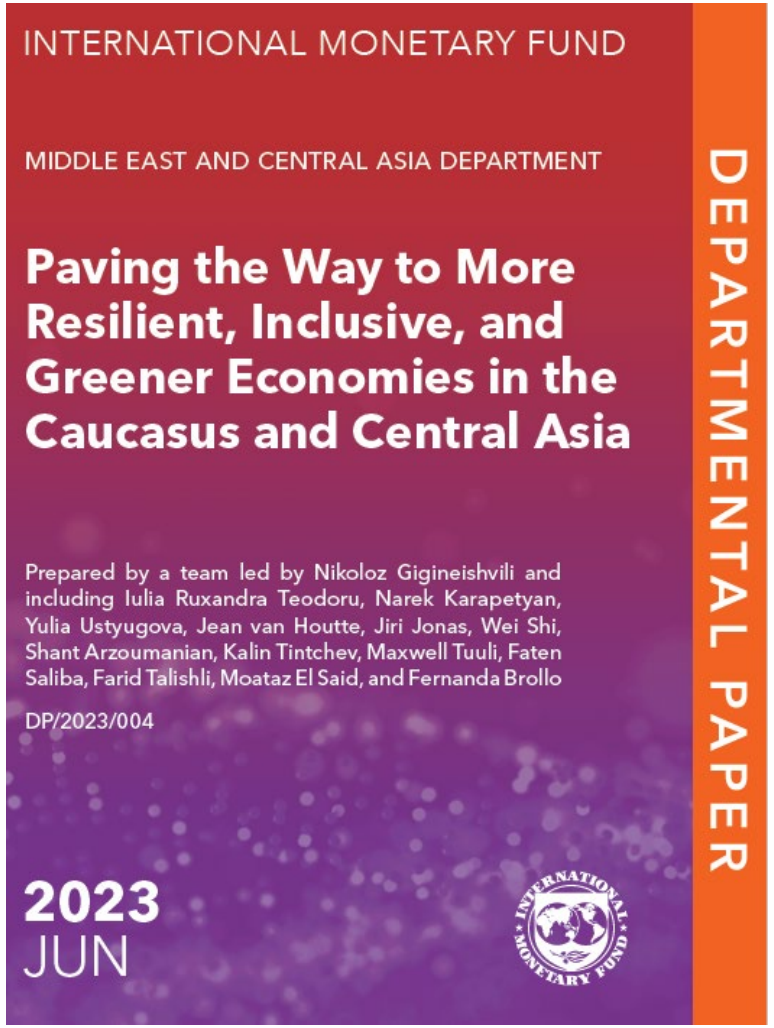


Growth Impact



Sources: IMF World Bank: Climate Policy Assessment Tool, See also IMF working paper WP/23/128 and here

Payoff of additional structural reforms



The diagnostics of structural determinants of growth for the CCA suggest that:

- governance and regulatory reforms,
- reducing state ownership in the corporate sector,
- liberalization of product, labor and financial markets and current account transactions, and
- easing of trade and foreign exchange restrictions could raise CCA output by 5–7 percent in the medium-term
- countries with better governance could derive greater payoffs from other reforms.

Supporting the transition: A holistic View of green PFM practices

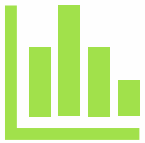
Legal framework	Are Green PFM practices underpinned by an adequate legal framework?	Climate act, PFM act
Strategic Planning / Fiscal Framework	Do strategic planning tools include green concerns?	Development plan, MTBT and MTEF
Budget Preparation	Are tools in place to integrate climate concerns into budget preparation and allocation?	Ex-ante impact assessment, fiscal risks, budget circular
Budget Execution & Accounting	Is the PFM system able to track and monitor outcomes of green expenditures?	Expenditure tagging, tracking & monitoring
Control and Audit	Are oversight institutions equipped to analyze and hold to account climate-related expenditures and outcomes?	Audit institutions, Climate councils
Public Investment Management	Are all projects, planning and fund allocation, and implementation informed by present and future climate change policies and risks?	PIM rules and handbooks, CBA requirements
Fiscal Transparency	Are efforts being made to ensure transparency and accountability for green aspects across the budget cycle?	Green budget reports
Coordination with SNGs and SOEs	Do PFM practices ensure that all fiscal actors play a role in the achievement of green goals?	Coordination mechanism, reporting, aggregate analysis

Source: Green PFM, Tjeerd Tim, IMF Fiscal Affairs Department, CCAMTAC webinar, February 2022

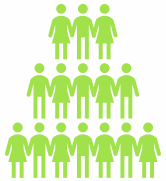
Four Main pillars of the Fund's climate strategy

Climate Strategy (2021) goal: "*provide high quality, granular, and tailored advice to the membership on macroeconomic and financial policy challenges related to climate change*"

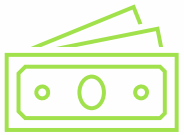
Integration of climate change into the core IMF's activities and strong cooperation with partners



Surveillance & Analytical Work



Capacity Development & Data



Lending

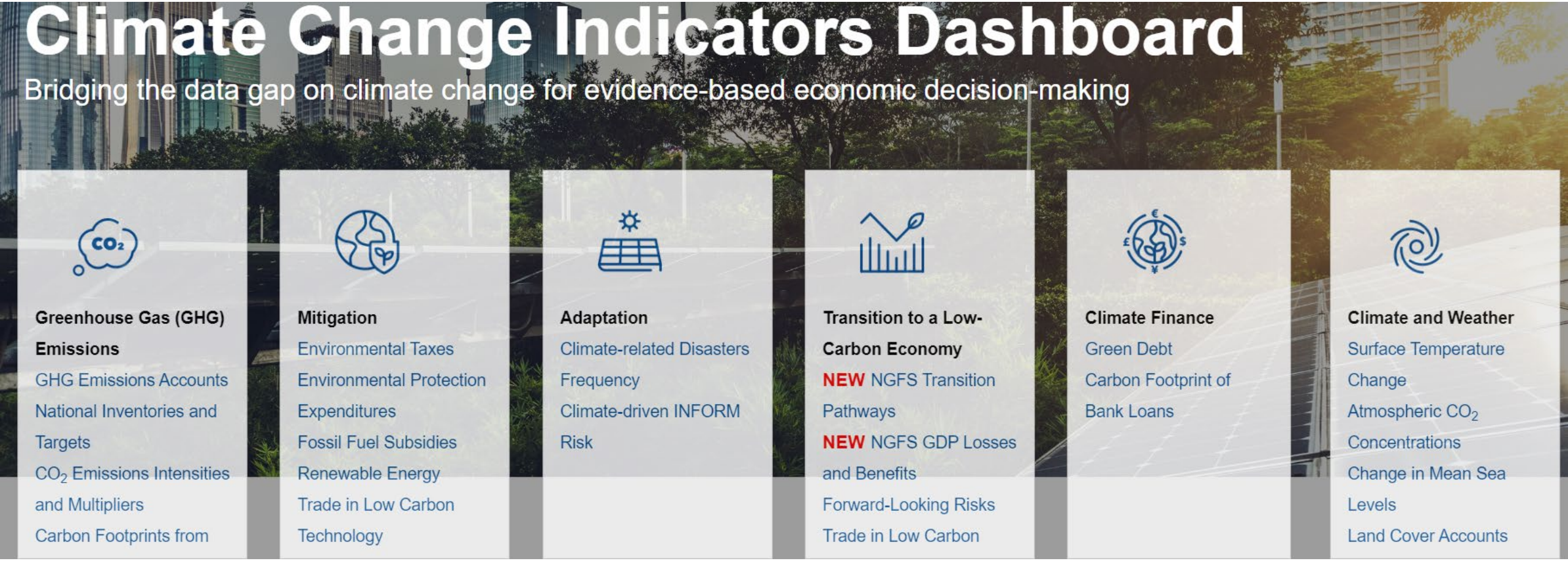
NEW

Cooperation & Coordination

Conclusion

- Economic growth will need to be decoupled from emissions.
- Current geo-economic and climate challenges provide an opportunity to make growth more resilient, sustainable, and inclusive in the long-term. Delaying reforms make them more costly.
- Climate-related reforms will need to be embedded in broader structural reforms aimed a reducing the footprint of the state, encouraging private-sector led growth, and diversification.
- The mix of policy instruments to reduce energy intensity and emission intensity is country-specific. In many cases it will need to include a combination of carbon pricing, fossil fuel subsidy reform, energy market reform, investment in renewable energy, regulations, and other innovations. This involves a delicate balance between reforms and political economy considerations.
- Experience points to the importance of (i) engaging proactively, (ii) depoliticizing the process (e.g., rules-based system), and (iii) strengthening fiscal governance, including transparency.

Good data is a precondition



https://climatedata.imf.org/

IMF-Middle East and Central Asia Department recent climate-related analytical work on the region