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WORLD ECONOMIC FORUM

What Future for Climate and Trade? Scenarios and Strategies for Carbon Competitiveness

WHITE PAPER

JUNE 2023

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Foreword

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Governments and businesses worldwide are stepping up their efforts to achieve a net-zero economy. The Boston Consulting Group (BCG), part of the Alliance of CEO Climate Leaders, and the World Economic Forum are committed to playing their part in this. However, speed is now essential. On a positive note, supported by strong policies, climate action technologies are spreading, new innovations are surfacing and a global market for green goods and services is growing fast. Yet we are also seeing tensions emerge as a consequence of government intervention, including in relation to trade competitiveness.

Climate change and global trade are intrinsically linked. This means that countries and companies alike must work together to achieve net zero. The goal is what we call “carbon competitiveness” – this encompasses positive interactions among the many efforts to reduce emissions and support sustainability; how those efforts affect, and are affected by, the trillions of dollars of products and services traded in the global economy; and the understandable desire of governments to support domestic economic growth and jobs.

A high degree of carbon competitiveness is by no means assured. To highlight how the interaction between climate action, global trade and economic growth might affect efforts to meet global net-zero goals, the World Economic Forum and BCG recently came together to conduct a scenario-planning exercise. In the most optimistic outlook, called climate on track, strong international cooperation ensures that we are within the Paris Agreement goals and growth worldwide is advanced. It is a rosy picture – and not yet out of reach.

It is our hope that the implications of these scenarios, and our recommendations for how nations and business can boost carbon competitiveness, will provide a valuable framework for improving global collaboration in the ongoing fight against climate change.

Executive summary

As countries and companies strengthen their efforts to slow the process of climate change, the relationship between emissions-mitigation measures and global trade will grow closer and become more complex. Given the interconnectedness of international trade, climate measures will have an effect far beyond the borders of the jurisdictions implementing them, shaping the way companies and countries compete in global supply chains.

The interaction between climate measures and their impact on traded products and services in the global economy is what the authors term "carbon competitiveness". The relative degree of carbon competitiveness countries and businesses can achieve in the next decade will in large part determine how successful efforts are in slowing climate change.

To assess how carbon competitiveness could affect the risks and trade-offs inherent in the effort to meet global net-zero goals, this paper details four scenarios outlining how emissions-mitigation measures might interact with trade flows and trade policy cooperation. The goal: to stimulate thinking about each scenario's strategic implications, and the planning and potential actions needed by businesses and government, no matter which future unfolds.

The scenarios are determined by the interaction of two key variables: the degree of trade-related collaboration among countries; and the extent to which countries' climate mitigation measures are in line with the Paris Agreement and accompanied by adequate adaptation measures.

- **Climate on track.** International cooperation on climate measures and trade competitiveness topics has avoided destructive disputes. This has facilitated the trade in green goods and services, and sustainable critical minerals supply chains are open. Development banks have teamed up with corporate alliances to improve supply-chain decarbonization. Global emissions have declined by 43% by 2030 from 2019 levels.

- **Fractured effort.** Protectionism is rising as countries seek to shield domestic companies from carbon leakage – where production moves to countries with less strict emissions policies. Non-inclusive climate clubs have been deployed, creating a complex landscape for business to navigate and curbing innovation spread. Relative differences in green subsidies have led to unbalanced green investment, with the poorest nations suffering the consequences. Global emissions have declined by 30% by 2030 from 2019 levels.

- **Exponential disasters.** Increasing conflict over critical materials has slowed climate efforts and encouraged protectionism. Powerful nations seek to control the supply chains most threatened by climate change, including food, and poverty rates are on the rise. Investment has focused on adapting to climate change, pulling resources from mitigation, and global emissions have increased significantly by 2030 to 125% of 2019 levels.

- **Collective avoidance.** International talks on climate mitigation and trade competitiveness are surface level. Governments have pushed back emissions-reduction targets, and negotiations on green goods and services trade have also faltered. Efforts to deal with key supply-chain risks in the face of growing climate impacts have produced little action, and global growth has slowed. Emissions have increased by 2030 to 115% of 2019 levels.

To ensure the best possible collaboration on global trade – delivering decarbonization while supporting global carbon competitiveness – governments and businesses should consider taking the following steps.

Five recommendations for governments:

1. Align carbon accounting and reporting standards
2. Agree principles for the deployment of green subsidies and scale public procurement
3. Promote the green economy and development programmes
4. Develop climate clubs to be as inclusive as possible
5. Use international institutions coherently

Five recommendations for businesses:

1. Assess your carbon competitiveness
2. Understand your resilience
3. Take advantage of new investment opportunities
4. Work with your networks
5. Engage with policy-makers

In this way, it is possible to promote the collaboration between stakeholders needed to ensure global climate action remains on track.

1 What is carbon competitiveness?

Climate actions will shape traded products and services in the global economy. Countries and companies need to plan for opportunities, risks and trade-offs.

As countries and companies redouble their efforts to slow the process of climate change, the relationship between emissions-mitigation measures and global trade will become closer and more complex. On the one hand, trade in the products and services needed to drive decarbonization will increase, and associated production and consumption flows will shift. But on the other hand, the domestic measures that countries put in place to deliver on their net-zero goals – such as carbon pricing, subsidies, renewables mandates, energy efficiency standards and public procurement commitments – will have an impact far beyond the borders of the jurisdictions implementing them, shaping the way in which companies and countries compete in global supply chains (Box 1).

The interaction between climate efforts and their impact on traded products and services in the global economy is labelled "carbon competitiveness". To clarify how carbon competitiveness will affect the opportunities, risks and trade-offs inherent in the effort to meet net-zero goals, this paper examines four scenarios outlining the ways in which emissions-mitigation measures might interact with trade flows and trade policy cooperation. The analysis considers how countries and companies might respond to potential developments. The aim: to help all stakeholders plan their best strategies for a very uncertain but dynamic future.

BOX 1 **Measure for measure**

Recent policy developments have raised carbon competitiveness questions

- The United States' Inflation Reduction Act (IRA) has linked local content requirements (LCRs) to green subsidies, while the European Union's response, including the Green Deal Industrial Plan, the Net Zero Industry Act and the Critical Raw Materials Act are having a similar effect.
- The EU is addressing a key factor underpinning its domestic carbon competitiveness – the risk of "carbon leakage" – through its Carbon Border Adjustment Mechanism (CBAM), which for the first time plans a carbon price on certain imports into the region. Other countries are set to follow suit.
- The Group of Seven (G7) is focused on a climate club that would involve a group of nations pledging to build a common understanding of the effectiveness and economic impacts of climate policies (including carbon pricing). The EU and the US, meanwhile, are pursuing a bilateral deal on steel and aluminium to address carbon leakage and drive green industrial competitiveness.
- Export restrictions on critical raw materials have increased fivefold since data collection began in 2019, according to the Organisation for Economic Co-operation and Development (OECD), with 10% of global exports of these materials facing at least one restrictive measure.[1] Many countries are now talking about critical mineral clubs and shoring up essential supply chains, with the US actively negotiating critical minerals agreements with key partners.

2

Planning according to scenarios

Trade cooperation and climate efforts are used as two variables to create four scenarios to help strategize for carbon competitiveness.

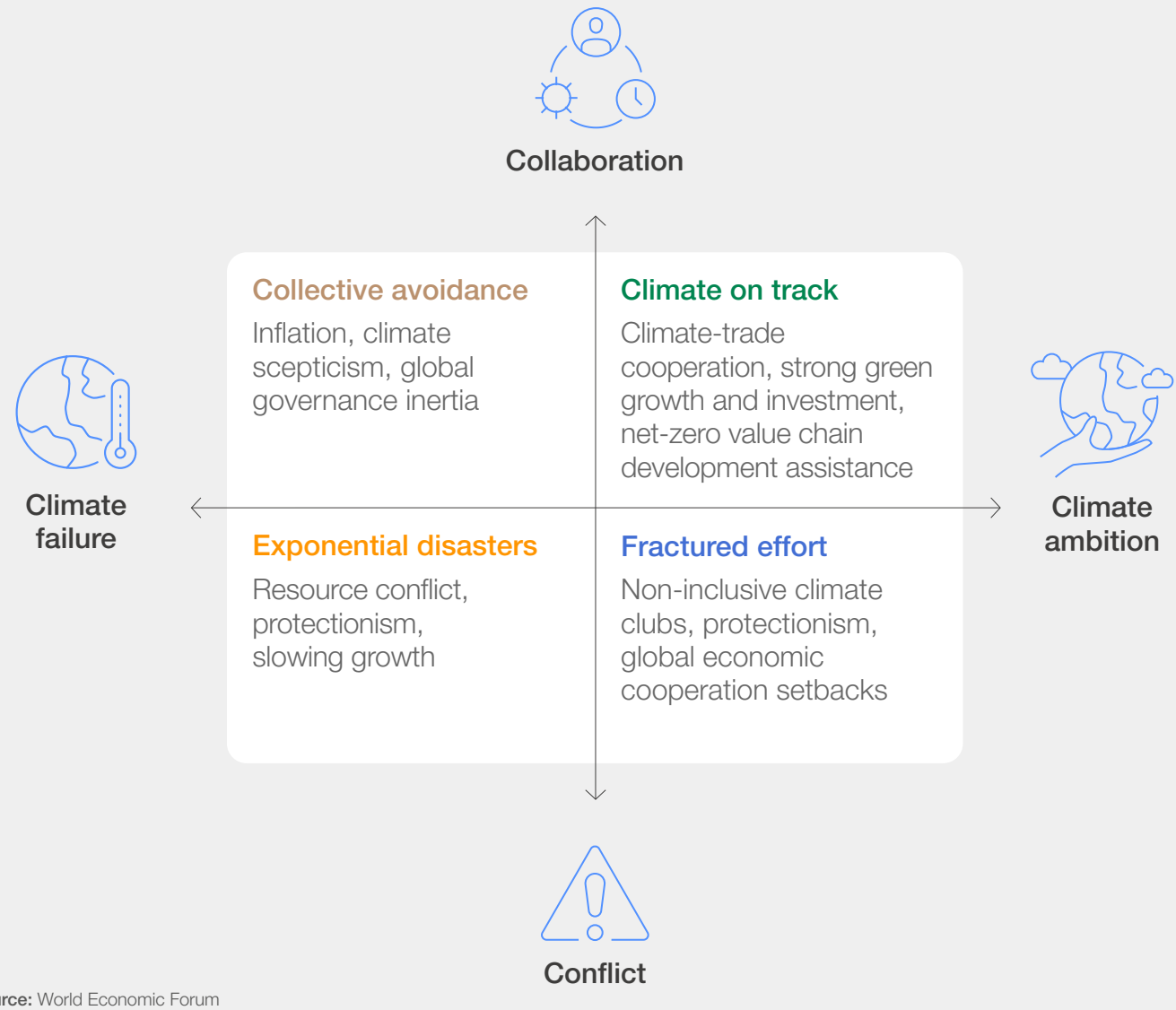
The four scenarios in this paper play out the intersection of two variables. The first is the degree of trade-related collaboration among countries; the second, whether climate mitigation measures are in line with the Paris Agreement and accompanied by sufficient adaptation measures. These scenarios were developed in workshops over the past 12 months with a range of participants, including business leaders, climate and economics experts and government officials.

The first variable is of relevance as global trade flows are underpinned by a set of rules and frameworks among governments – even if many of these have come under strain of late, and in some cases are outdated for the issues at hand. The second variable represents one of the most pressing challenges humanity has ever faced, and involves actions by both business and government. For the purpose of this publication, keeping in line with the Paris Agreement goals means continuing to work for a 1.5°C warming trajectory from pre-industrial levels, while recognizing the warning from the Intergovernmental Panel on Climate Change (IPCC) that this target is fast slipping out of reach.[2]

Each of the four scenarios – climate on track, fractured effort, exponential disasters and collective avoidance – leads to a very different future (see Figure 1). They are deliberately drawn in bold terms, and it is important to remember that none of the scenarios is likely to develop exactly as described. Still, the purpose remains the same: to stimulate thinking about their strategic implications, and the planning and potential actions needed as the future unfolds.

The paper aims to clarify the trade-offs of current interventions, while recognizing that developing scenarios is more of an art than a science and that the reality is unlikely to be so clear-cut. The coming years are essential for increasing the pace of climate action, so the time frame for the scenarios is 2023–2030, which should focus attention on the strategies different stakeholders need to take today to manage their carbon competitiveness concerns and opportunities.

FIGURE 1 **Future scenarios**



Source: World Economic Forum

In each scenario, adjusting a set of levers generates different reactions that make up the fictional future. These levers are organized into three groupings as shown in Table 1.

TABLE 1 **Scenario levers**

Scenario actions		Climate on track	Fractured effort	Exponential disasters	Collective avoidance
Climate tools	Mitigation measures	Yes	Yes	No	Limited
	Trade-related climate measures (BCAs, subsidies, etc.)	Yes, fair	Yes, trade-distorting	No	Yes, fair but ineffective
	Green incentives	Yes, fair	Yes, trade-distorting	No	No
	International standards	Yes, harmonized and with equivalence	No harmonized standards, patchwork	No	Yes
	Adaptation measures	Yes	Yes	Yes	Yes
Trade tools	Green technology and services trade	Yes, practically no barriers	Yes, but fragmented and within clubs	Limited, high barriers	Limited, even with low barriers
	Climate FDI facilitation	Yes	Limited	No	Limited, adaptation-focused
	Green Aid4Trade	Yes	Limited	No	Limited, adaptation-focused
Mechanics	Governance (trade-climate cooperation)	Yes, proactive and effective	Very limited	Non-existent	Yes, but ineffective

The scenarios exercise models several economic and emissions-mitigation parameters, as shown in Table 2. The baseline value for each parameter is extrapolated to reach the resulting projected values for 2030 in each scenario. Several of the projections are based on existing research. For example, the projections for global emissions depend on research from the IPCC, United Nations Framework Convention on Climate Change (UNFCCC) and the International Energy Agency (IEA), among others, on the amount by which emissions need to be reduced by 2030 in order to stay on target to keep global warming to a maximum of 1.5°C. The absolute projection values are illustrative, but the direction of change vis-à-vis the baseline reflects the hypotheses for each scenario. The explanatory paragraphs for the four scenarios in the following sections will dive deeper into some of these projections.

TABLE 2 **Scenario modelling**

Parameter	Baseline	Projections to 2030*			
		Climate on track	Fractured effort	Exponential disasters	Collective avoidance
Poverty rate	9% (2022, World Bank)	7%	7.3%	8.3%	7.7%
Global emissions	100 (indexing 2019 levels to 100, IPCC)	57% of 2019 levels	70% of 2019 levels	125% of 2019 levels	115% of 2019 levels
Global GDP growth rate	3.4% (2022, IMF)	4%	2.75%	2.25%	2.6%
Global trade volume growth	2.7% (2022, UNCTAD)	3.5%	2.1%	1.3%	2.4%
Environmental goods trade as a share of total manufactured goods trade	11% (2022, UNCTAD)	15%	17%	9%	7%
CO_2 emissions embodied in gross exports of final products	3.5 gigatonnes (GT) (2018, extrapolated from OECD data)	1.7 GT	2 GT	4.1 GT	3.9 GT
Total export restrictions on critical raw materials	13,102 (2020, OECD)	3,000	16,500	19,000	9,000

* Projections are based on extrapolations from similar existing research. The magnitudes are illustrative and for scenario-building purposes only.

3 Four scenarios

The four scenarios chart fictional futures, varying a set of key economic and emissions-reduction levers and suggesting drivers that might lead to one scenario rather than another.

3.1 Climate on track

Scenario drivers: climate-trade cooperation, strong green growth and investment, net-zero value chain development assistance

Key actions:

- Climate change efforts are on track and disputes about trade competitiveness linked to diverse approaches to mitigation are eased, thanks to a World Trade Organization (WTO)–UNFCCC working party, established by governments, which drafts acceptable trade policy principles for climate measures.
- The working party addresses methodologies for measuring emissions that help to reduce the risk of discriminatory trade measures. Stakeholders have reached consensus on how to implement green subsidies effectively.
- Developing economies and least developed countries (LDCs) receive significant climate finance packages combined with aid-for-trade. Development banks team up with corporate alliances to leverage supply-chain decarbonization for more green investment.

In this future, greenhouse gas (GHG) emissions externalities have been effectively internalized. China, India, the US and the EU – which would have accounted for nearly two-thirds of projected CO_2 emissions by 2030 had no new mitigation actions been taken[3] – have instituted significant climate policy packages. Global emissions have declined by 43% from 2019 levels.[4]

Electorates have maintained their appetite for climate action, especially since some of the benefits of pre-existing investments in the early 2020s have come to fruition, and global GDP growth is around 4% a year. In particular, the plight of the ocean and irreversible biodiversity loss have galvanized societies and consumers, helping businesses deploy a green premium.

Some economies are making use of border carbon adjustments (BCAs) – carbon taxes at the border – as well as green public subsidies. The initial roll-out of such measures threatened trade conflict, but a group of "middle power" nations championed the establishment of a joint WTO–UNFCCC working party. The group achieved consensus on a range of trade policy principles – including best practices for regulatory design, transparency and implementation of trade-related climate measures. Large trade powers (and emitters) came on board, recognizing the mutual benefit of reducing climate-trade conflict and because they were keen to avoid a global economic downturn.

In addition, the working party mapped gaps in international GHG accounting standards in emissions-intensive, trade-exposed sectors. Net-zero principles for emissions-measurement methodologies were established for the steel industry by the mid-2020s,[5] and similar work is now underway on aluminium, iron, cement and hydrogen, encouraging greater interoperability and convergence among various existing options. Carbon dioxide emissions embodied in gross exports of final products stand at 1.7 GT, down from 3.5 GT in 2018.

The working party also provided guidelines to ensure that green subsidies do not distort trade, as well as putting in place best practices for balancing environmental and trade considerations in subsidy design. The Group of 20 (G20) brokered a binding deal to phase out harmful fossil fuel subsidies that reinforced green investment flows.

A group of more than 100 nations negotiated an open "plurilateral" trade deal on climate goods and services. The deal cuts tariffs to zero on a set of key technologies, identifies key non-tariff barriers to work on, such as streamlining procedures for product conformity assessment procedures, facilitates trade in associated services, and sets up a process for green procurement definition alignment. Trade in environmental goods as a share of total manufactured goods trade has risen to 15%.[6]

In a novel move, participating nations also agreed to limit export restrictions in critical minerals supply chains. Developing economies that export key minerals were brought into the deal through finance

packages for sustainable mining. Export restrictions on critical raw materials have declined from more than 13,000 in 2020 to just 3,000. Overall, trade volume growth is 3.5% and the world enjoys lower levels of geopolitical risk.

Aid-for-trade programmes have been oriented to support climate-aligned development, an effort that includes identifying where trade flows can support developing countries' mitigation and adaptation efforts as well as capturing new opportunities in net-zero value chains. Development banks team up with corporate climate alliances to use supply-chain decarbonization to increase green investment. Global poverty rates fall to 7% of the global population as developing economies capture green competitive advantages.

BOX 2 **Open, green leader**

In this future, an archetype economy is committed to net zero by 2050 with a clear regulatory pathway in place to deliver this. Carbon pricing and subsidy arrangements are introduced in accordance with international methodologies. The economy has resilient supply chains with minimal localization requirements and is a member of a large and diverse carbon club. Financing mechanisms are in place to support emerging markets and LDCs with their own energy transitions.

3.2 Fractured effort

Scenario drivers: non-inclusive climate clubs, protectionism, global economic cooperation setbacks

Key actions:

- Emissions have declined, but trade wars have broken out over measures to protect domestic firms from carbon leakage. Large green subsidies are available, conditional upon LCRs. Global growth has slowed, while inflation has skyrocketed.
- Some countries have banded together in climate clubs to secure resources and align on climate measures with adverse impacts on trade competitiveness. These accelerate the divide between large markets in the Global North and the Global South, create a complex landscape for business to navigate and curb the spread of innovation.
- Green investment is pulled towards markets with generous subsidy programmes. A solidarity fund for adaptation has been set up for the poorest nations, but disbursements have stalled due to worsening global relations.

In this future, emissions have declined by 30% from 2019 levels, thanks to significant climate policy packages among major emitters such as the EU, the US and China. However, these large markets have taken very different approaches to climate measures, creating a volatile, competitive landscape that is hampering further abatement efforts. OECD economies, China and several others deploy BCAs in an attempt to level the playing field for their domestic industries. A WTO-led effort to align on principles for these measures has stalled, and since each country views every other's approach as discriminatory, retaliatory trade wars have broken out. Proliferating BCAs, definitions and standards also create significant customs clearance challenges and circumvention risks through mislabelling or standards arbitrage.

Various economies have deployed large green subsidy programmes, often with local content requirements (LCRs) to satisfy political pressures. That has led to an initial acceleration of emissions-reduction efforts, but the trend is now tailing off, as LCRs have created inefficient domestic markets and raised end prices for consumers while exacerbating trade conflicts. Green investment has been pulled towards markets with generous subsidy programmes; far smaller amounts have gone into green projects in smaller developing nations, but only where there is a clear competitive advantage (such as the availability of key minerals or green ammonia exports), or there are pre-existing trade concentration and supplier relationships (such as in agriculture exports).

Global growth has taken a hit, slowing to 2.75%, and inflation is a persistent problem. Businesses and governments alike are unclear how to further cut emissions towards net-zero goals and are starting to question the pace of change. Emissions embodied in gross exports of final products have declined to 2 GT, but significant carbon loopholes are emerging, with greenfield investment in manufacturing growing in countries with weaker climate policies.

Negotiations among more than 100 countries for a deal on climate technology trade began in the mid-2020s but stalled as trade tensions escalated. Instead, countries pursued regional and geopolitically aligned collaborations. A number of "climate trade clubs" have now formed or are in negotiation. These arrangements focus on access to strategic resources linked to green technologies, such as critical minerals, renewables and green ammonia, or on helping hard-to-abate industries such as steel, chemicals and aluminium to ring-fence decarbonization efforts. There are 16,500 export restrictions on critical materials.

Businesses have had to restructure supply chains along club lines, creating redundancies and limiting efficient distribution of the latest climate technology innovations. They must also navigate significant complexity in complying with different trade-related climate measures and are frequently caught up in the spillover trade wars. This has slowed global trade volume growth to 2.1% annually and the geopolitical landscape is fractious.

Yet around 17% of all manufactured goods traded are environmental goods, compared to 15% for the "climate on track" scenario. This is a result of the increased trade in green goods among blocs of friendly countries, even as the general protectionism and fragmentation in global trade chips away at total goods trade, thus inflating the share of green goods in total trade.

The global poverty rate stands at 7.3% as some regional trade growth drives poverty alleviation. However, many low-income and vulnerable economies are shut out of global supply chains because they lack the green investment necessary to meet supplier decarbonization targets. A global adaptation solidarity fund focuses on helping LDCs cope with climate impacts, but disbursements are being held up due to the sour geopolitical climate.

BOX 3 **Green, but me first**

In this future, an archetype economy is committed to net zero by 2050 with some measures in place to deliver on this. Regulation prioritizes domestic investment and high localization requirements over global free trade. Engagement with trade partners is fractious.

3.3 Exponential disasters

Scenario drivers: resource conflict, protectionism, slowing growth

Key actions:

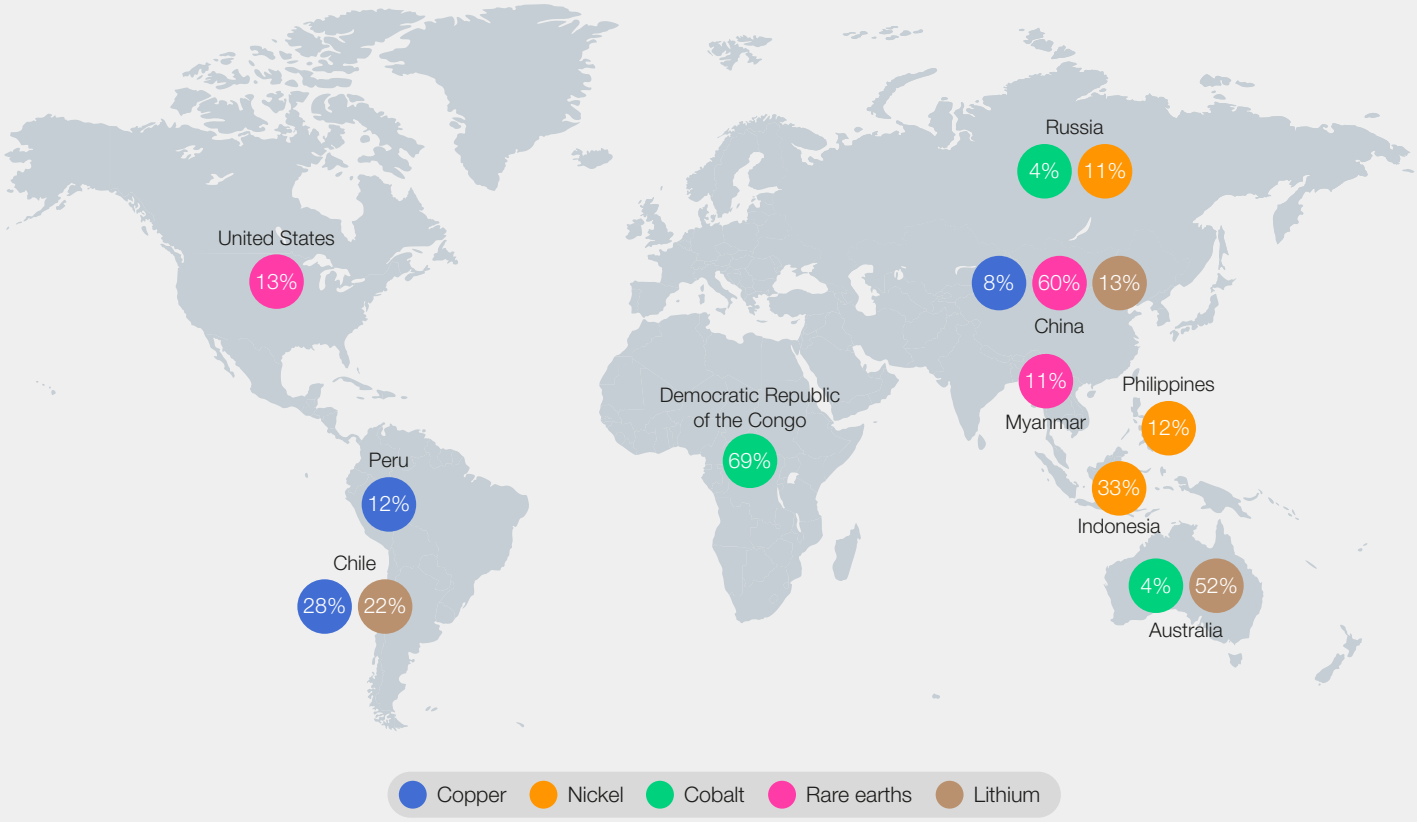
- Paris Agreement goals are now completely out of reach as mineral resource clashes have slowed green technology roll-out. Powerful nations seek to control the supply chains most threatened by climate change, including food and agriculture, as populations grow anxious about living costs.
- Some climate policies are maintained, together with trade measures to avoid carbon leakage. But their protectionist effect prompts yet more commercial conflict in the absence of significant climate efforts by the countries imposing them.
- Financial markets are volatile, with investors most interested in services and technologies related to climate adaptation, and global poverty rates are rising.

In this future, the Earth's climate has already warmed up past the goals of the Paris Agreement, and the global community's climate policies and finances are focused mainly on adaptation. A rush for critical metals in the mid-2020s combined with deep uncertainty on their supply sparked geopolitical rivalries that have proved disastrous for sustaining a globalized industry.

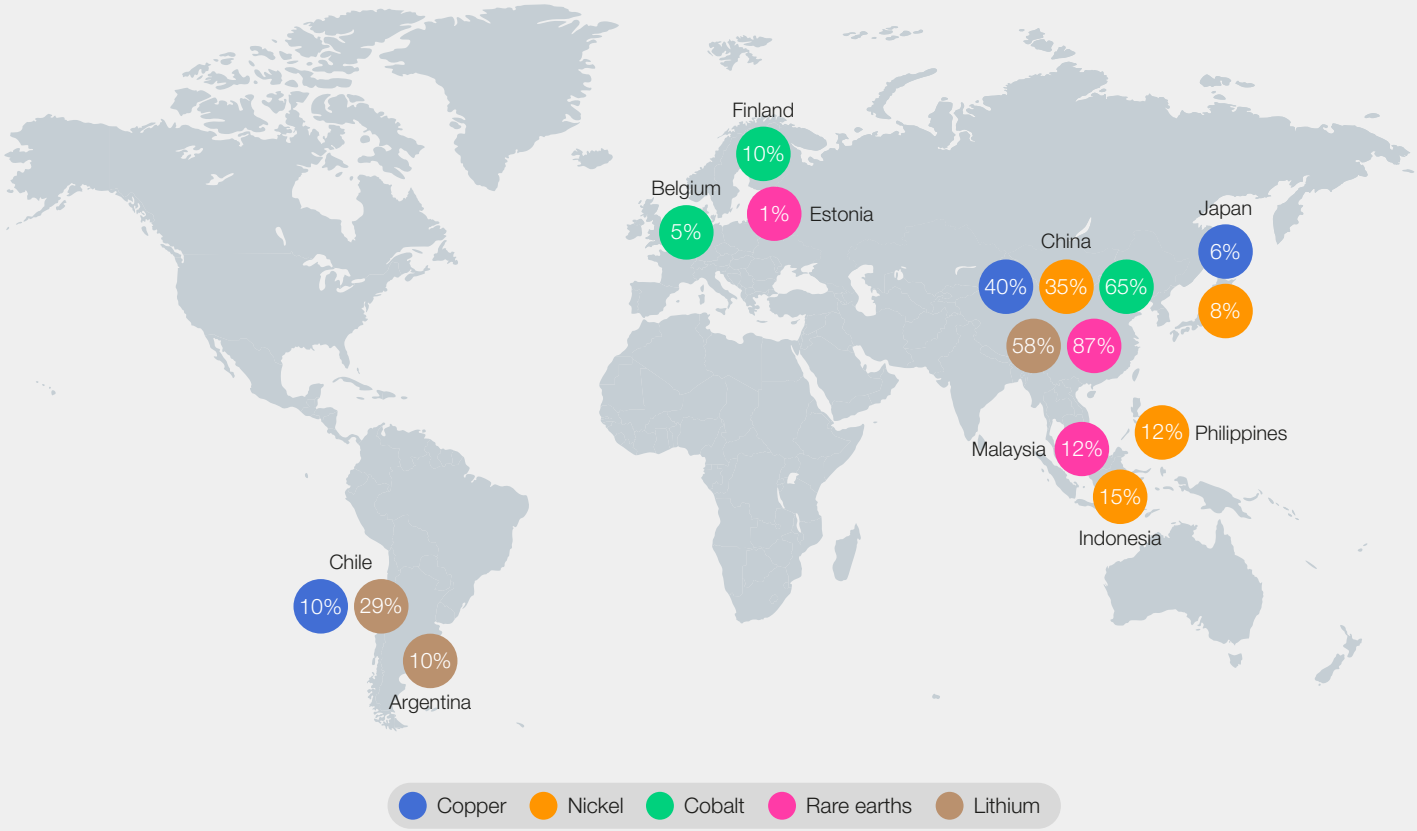
Mineral-exporting economies imposed export restrictions, which were countered by trade sanctions from major markets, though the conflicts were eventually settled by a series of bilateral arrangements. The process took too long, and the green technology roll-out slowed down, resulting in a supply crunch and higher prices. Now, at the end of the decade, there are 19,000 export restrictions on critical raw materials in place. This fragmentation has also permitted a race to the bottom in terms of environmental and social standards for new mining projects.

FIGURE 2 | **Demand for critical minerals**

As of 2019, the top three nations in extracting strategic raw materials (as identified by the proposed EU Critical Raw Materials Act) are:



As of 2019, the top three nations in processing select minerals are:



Source: IEA, The Role of Critical Minerals in Clean Energy Transitions: https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions

The EU, the US, India, Japan and others maintain some nominal decarbonization efforts, partly out of concern about the worst consequences of climate change, and partly to maintain existing growth sectors. BCAs are used to protect domestic champions, but since climate measures are weak, these are seen as protectionist and only exacerbate trade tensions. There is no consensus on methodologies for measuring emissions, which contributes significantly to greenwashing. The WTO has become a redundant body as countries mostly ignore the global rules-based system, and the international process for settling disputes no longer has meaning.

Resource-grabbing has accelerated, with richer nations controlling inputs and supply chains most threatened by climate change. Domestic green incentive programmes and subsidies are redirected to support escalating living costs. In some cases, this has created stranded green assets, as the cost curve for some new technologies fails to come down.

As a result, GHG emissions have risen by 25% from 2019 levels, with most of this growth occurring towards the end of the decade. Emissions embodied in gross exports of final products have grown to 4.1 GT, despite overall trade growth slowing down to 1.3%, since decarbonization measures have proven ineffective.

Investment in services and technologies designed to adapt to now-inevitable climate change is strong. Some nations are considering trade deals for adaptation technologies, though overall trade in environmental goods and services has slowed to 9% of overall manufactured goods trade. Financial markets are volatile, with profits to be made from supply squeezes, but losses arising from climate disasters.

In this highly uncertain environment, global growth stands at 2.25% a year. While poverty-reduction efforts over the past decade have yielded fruit, the adverse impacts of climate change now act as a counterforce. As a result, the global poverty rate is around 8.3%, marginally lower than in 2022. Green aid-for-trade programmes are modest, given the high demand for public funding in other areas. Global negotiations have started under the UNFCCC for a new resilience deal on helping countries manage the worst impacts of a world that may warm by 3–4°C or more.

BOX 4 **Growth at all costs**

In this future, an archetype economy has little or no commitment to net zero, and few decarbonization measures in place. There is a focus on GDP growth over green growth, and marginal engagement with environmental, social and governance (ESG) supply-chain measures in developed economies, in part due to the focus on trade in domestic and emerging markets with lower standards.

3.4 Collective avoidance

Scenario drivers: inflation, climate scepticism, global governance inertia

Key actions:

- Mild and ineffective climate mitigation tools mean that emissions-reduction efforts are significantly off track, while the risk of commercial conflict from diverse climate ambitions is limited. Countries maintain long-term climate goals but reduce emissions-cutting trajectories for 2030 and weaken BCA-type measures.
- A global process is set up at the WTO to deal with key supply-chain risks in the face of growing climate impacts. This proves a useful forum for the exchange of ideas, but yields limited substantive outcomes.
- Earlier talks for a trade deal to support climate action have faltered, and green investment has slowed in the face of stalled climate policies.

In this future, global economic collaboration continues in a well-intentioned manner, but is ineffective in scaling green markets. Climate mitigation tools are being deployed broadly, but are too mild to effect change, thereby limiting the risk of trade competitiveness conflict. Many countries pledged to increase climate ambition during the international 2023 Paris Agreement assessment. However, a global economic crisis triggered by high inflation, technology change and geopolitical tensions in the mid-2020s has caused populations to push back on strong climate agendas. Governments with strong green mandates have lost power. Emissions are to 115% of 2019 levels.

Some key economies such as the EU have maintained their commitment to be climate-neutral by 2050, but the bloc has moderated its ambition to cut emissions by 55% from 1990 levels by 2030. It has extended its Emissions Trading Scheme (ETS) free allowances to continue to cover around 90% of industrial emissions. Fearing too

much trade retaliation from maintaining a BCA in these circumstances, the EU has also limited the proposed expansion of its CBAM.

Faced with growing climate impacts, a global process has been set up at the WTO to deal with key supply-chain risks, an effort promoted by the G20 in 2025. The process has proved an interesting forum for exchange, but has yielded few substantive outcomes and covers up divisions between major powers such as the US, the EU and China, which simmer unaddressed. Domestic green incentive programmes are shuttered as public spending is cut, leading to a pause in disputes concerning LCRs. Global growth slows to 2.6%, and trade growth is around 2.4%, as climate-related infrastructure disasters and future uncertainty start to take their toll.

Talks among a number of countries regarding a trade deal to support climate action started in 2024 but faltered as green investment dried up in the face of the climate policy slowdown. As a result, the share of trade in environmental goods as a percentage of total manufactured goods trade has dropped to 7%, and the emissions embodied in gross exports of finished products are up to 3.9 GT, much the same as at the start of the decade. On the bright side, export restrictions on critical raw materials dropped amid positive regional trade collaboration, and now stand at around 9,000 measures.

Financial flows have shifted towards adaptation and resilience in strategic sectors such as soft commodities. Large green aid-for-trade programmes have been launched, but these have not been well coordinated with the climate community, which is in disarray over how to maintain its climate mitigation ambitions. Developing-economy suppliers in sectors such as agri-food and textiles are unable to cope with the effects of climate change. Global business, meanwhile, is struggling to maintain corporate supply-chain decarbonization amid these shifts and has started to pull back on efforts. The global poverty rate has risen to 7.7% as climate crises worsen marginal living conditions in many vulnerable economies.

BOX 5 **Disconnected, vulnerable**

In this future, an archetype economy has abandoned any commitment to achieve net zero and has few decarbonization measures in place. Trade relationships with economies still committed to climate action deteriorate, as BCAs and other trade-related measures kick in and limit access to markets. This economy becomes increasingly vulnerable and focuses on adapting to climate impacts.

4 Strategies for the future

Seven factors can help track countries' carbon competitiveness, while both governments and businesses can shape future opportunities.

In assessing the capacity of national economies and their resident companies to compete in global markets, as well as maintaining their commitments to emissions mitigation, it will be important to track seven factors:

1. The overall ability to decarbonize the economy in line with the goals of the Paris Agreement while maintaining and increasing current GDP levels
2. The relative maturity of the key regulatory measures needed to drive to net zero, such as carbon pricing, standards and financial incentives
3. The extent of diversification of the economy and export profile in relation to high-emissions sectors
4. The use of emissions-efficient energy and industrial processes across economic sectors
5. The relative reliance on imports versus domestic production for key net-zero technologies
6. The relative security of access to the critical raw materials needed to drive green manufacturing
7. The relative ability to remain competitive in global supply chains as jurisdictions place increasing emphasis on cross-border climate action

Beyond tracking, how should governments and businesses respond to ensure the best possible collaboration on global trade – delivering decarbonization while supporting global carbon competitiveness? Although it is unrealistic to expect the world to move seamlessly to a unified global effort to tackle climate change in less than a decade, there are five recommended actions that businesses and governments should take now that offer the best chance for a strong net-zero growth future.

4.1 Five recommendations for governments

1. Align carbon accounting and reporting standards. Despite significant efforts to limit their proliferation, there is a plethora of carbon accounting and reporting standards, creating an uneven landscape on which to build trade-related climate measures. Whether needed for statutory reporting purposes, carbon-pricing calculations or other reasons, different emissions-measurement approaches will invariably create complexity, risking trade conflict and making circumvention easier.

Governments engaged in international standardization discussions should begin this effort by focusing first on, carbon-intensive, heavily traded materials. Such efforts are already under way in the G7 on steel, but these discussions need to be brought into wider international forums. Confidence is vital in this space.

This is particularly true for developing countries, where knowledge-building on emissions accounting and improving compliance with emissions-reduction measures can be done in partnership with industry associations. Such industry-government partnerships can also help develop certification infrastructure in line with commonly accepted standards while building exporters' capacities in compliance and emissions reduction.

2. Agree principles for the deployment of green subsidies and scale public procurement. While the subsidies made available under programmes such as the US Inflation Reduction Act will undoubtedly boost green investment, they will also have a knock-on impact on global trade and investment flows. A subsidies race is neither practical nor affordable for many economies and could add to geopolitical tensions in the process.

Agreement on broad principles for the application of green subsidies would help promote global cooperation and ensure decarbonization happens in a mutually supportive way. Recent efforts by the World Bank, WTO and OECD to establish a subsidy transparency database are welcome in this regard.[7]

Green public procurement commitments are an effective way to mitigate business uncertainty on investments in low-carbon products and services. Public procurement can send a clear message. Regulatory cooperation among markets on green procurement definitions and transparency on standards will be important to further scale this signalling effect.

3. Promote the green economy and development programmes. "Greening" aid-for-trade must be a vital part of OECD Development Assistance Committee (DAC) economies' strategies. While the initial roll-out of the EU's CBAM affects only a handful of low-income nations, if this approach were to be expanded, it would increasingly affect countries' carbon competitiveness. It is imperative that development assistance programmes create pathways for green trade to become part of the development effort. This can involve support for low-income economies and SMEs in identifying where they can be competitive in the future global net-zero economy as well as targeted programmes to help suppliers in key value chains decarbonize.

In addition, export and investment-promotion agencies must align with national climate goals, with clear key performance indicators (KPIs) focused on mitigation and adaptation. These agencies can play a vital role in helping further economic interests within their nations, especially when in alignment with their net-zero growth and resilience agenda.

At the same time, developing countries should consider how best to engage with donors to ensure that such support is effective. Moves that prioritize short-term economic gain over effective support for decarbonization (such as taxing the revenue from carbon credits) should be discouraged.

4. Develop climate clubs to be as inclusive as possible. Climate clubs, now being promoted by the G7, can help countries cooperate on climate change-related measures that affect competitiveness. A climate club consisting solely of G7 economies, however, will not be sufficient to move the dial globally.

While climate clubs may need to start among a smaller number of countries, the goal should be to expand over time. Further, having concentrated supply chains with only a handful of partners increases the risk of exposure to shocks, which are likely to increase with climate impacts, among other factors. Pathways into climate clubs need to be outlined and support provided for low-income countries, such as technical assistance and green investment facilitation, among other things.

5. Use international institutions coherently. Governments must build bridges between international institutions focused on economic and climate policies. Since the Paris Agreement does not have a dispute settlement mechanism, and the WTO's mechanism is ailing, response measures on climate with ramifications for trade could quickly lead to commercial tensions. Dialogue can also be useful in managing tensions among different regulatory approaches, offering a route through trade conflict, before resorting to dispute settlement.

4.2 Five recommendations for businesses

1. Assess your carbon competitiveness. Increased government intervention on climate change issues is likely to continue in many countries for the foreseeable future. New regulatory measures, including carbon pricing and green subsidies, will alter your balance of competitiveness. Ensure you have identified the potential impacts across your value chain for a range of scenarios and develop a playbook of possible responses.

2. Understand your resilience. Possible futures could produce new weak points in your supply chain – in the availability of secure critical raw materials, for example. Ensure that you understand these issues and have strategies in place to manage them, considering increasing government interest in this area, such as the forthcoming EU Critical Raw Materials Act that requires transparent supply-chain reporting. Further, enabling the use of secondary raw materials should be a priority across your supply chains.

3. Take advantage of new investment opportunities. The US Inflation Reduction Act and the EU Net Zero Industry Act both provide an incentive for massive increases in green manufacturing. The need for private-sector capital and expertise has never been greater; for example, an estimated €2.5 trillion of investment will be needed to meet the EU's net-zero targets.

4. Work with your networks. All companies, large and small, must consider how their supplier and purchasing network is positioned in terms of carbon competitiveness. Multinationals can participate in a variety of initiatives, such as the First Movers Coalition,[8] to use their purchasing power to encourage the use of clean energy in their supply chains and to secure supply.

There are also initiatives to help scale supplier decarbonization, whether in general, such as the Carbon Disclosure Project (CDP), or by sector. Some estimates suggest that the market share gap between downstream players with science-based value-chain decarbonization commitments surpasses the share of upstream players that could provide green materials by more than 20 percentage points.[9] Corporate supplier capacity-building programmes are increasingly available to help reduce emissions and improve carbon competitiveness. Where these are not available, or in cases where economy-wide decarbonization is required for low-carbon growth, these needs must be highlighted through industry associations and chambers of commerce.

5. Engage with policy-makers. Every company, and particularly sector leaders, should be setting science-based targets aligned with a 1.5°C pathway. Businesses should also advocate for strong climate and environment policies to help transform green markets. Doing so will be critical even as policies raise competitiveness questions. Ambitious companies have an important role to play in articulating how climate policies can best shape a just transition towards the global net-zero economy of the future.[10]

5 Call to action

Slowing climate change requires a robust trade in green goods and services, as well as cooperation to reduce economic friction among diverse climate measures.

The paper does not take a position on which of the four scenarios, in which form, is most likely to come true. It is of course to be hoped that the future will most resemble the first scenario: climate on track. But that will depend in large part on the political will to build a robust system of global trade in green goods and services, managed through strong international agreements on trade rules and content, while reducing friction between climate measures where possible.

All stakeholders in the effort to slow climate change are encouraged to support the economic policies and transparency measures needed to achieve this all-important goal.

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Acknowledgements

The authors would like to thank Sean Doherty and Nicolai Ruge (both World Economic Forum) for their invaluable help in shaping this publication.

Thanks are also due to the Climate Trade Zero Steering Committee and the expert network consisting of more than 100 business, academia and civil society representatives for their insights in shaping this publication.

In particular, thanks are extended to the European Roundtable on Climate Change and Sustainable Transition (ERCST) and the Center for Climate and Energy Solutions (C2ES) for collaboration on dialogues, and thought leadership.

Thanks are further extended to the following people for thoughtful comments and reviews: Apoorva Arya, Chief Executive Officer, Circular Innovation Lab; Arpit Bhutani, Chief Operating Officer, Circular Innovation Lab; Sarah Hay, Climate Policy Manager, Group Sustainability, Hydro; Michele Rimini, Programme Lead, Industry and Trade, E3G, Third Generation Environmentalism; Catrina Rorke, Executive Director, Climate Leadership Council's Center for Climate and Trade; Scott Vaughan, Senior Fellow, International Institute for Sustainable Development (IISD).

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