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Foresight: Multilevel Climate Policy in 2030

Miranda Böttcher, Ole Adolphsen, Oliver Geden, Jule Könneke, Felix Schenuit, Sonja Thielges

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Introduction

Background on Climate Policy

Climate policy is a multifaceted field characterized by the intricate interplay between domestic, supranational/regional, and international dynamics. Thinking through the possible future complexities of climate policy requires a comprehensive approach that considers the interconnections and synergies across these different levels.

At the domestic level, climate policy is shaped by competing interest groups' priorities, existing legal and regulatory landscapes, and socio-economic conditions. Domestic climate policy decision makers must balance environmental goals with economic competitiveness, social equity and other policy objectives, addressing the needs and concerns of various stakeholders, including industry, civil society, and local governments.

Within the European Union (EU), climate policy is governed by collective strategies and legislation aimed at achieving abatement targets. Member states' national policies are influenced by and contribute to these broader EU objectives.

Internationally, climate policy is guided by the Paris Agreement (PA), under the United Nations Framework Convention on Climate change (UNFCCC), which sets out a collective goal to limit global warming to well below 2 degrees Celsius above pre-industrial levels. Global climate governance mechanisms are intended to facilitate coordination and accountability, ensuring that countries work together towards common climate objectives. However, differences in climate policy priorities and capacities often hinder international coordination and cooperation.

As climate policy emerges and evolves within a complex interplay of domestic priorities, supranational/regional regulations, and international commitments, a holistic approach is essential when exploring how these complex interdependencies may interact in plausible future scenarios.

- Climate policy emerges and evolves within a complex interplay of domestic priorities, supranational/regional regulations, and international commitments
- Thinking through possible climate policy futures requires a comprehensive approach that considers the interconnections across these different levels

Workshop aims: Developing qualitative scenarios to explore climate policy futures

In order to enable such future thinking, two foresight workshops were carried out as part of an internal process within the SWP's Research Cluster on Climate Policy and Politics. The work of the cluster entails not only analysing current German, EU and international climate policy developments, but also anticipating plausible future developments with the potential for significant impact on (national, EU, international) climate policy.

One of the proven methods for systemically exploring plausible futures is the development of qualitative foresight scenarios. Two 1.5-day foresight workshops were therefore held January 10–11 and April 3–4, 2024 to enable the members of the SWP Climate Cluster to engage in a structured, exploratory process to identify the various interlinked factors that could have a significant impact on (national, EU, international) climate policy by 2030.

These workshops aimed to switch the mode of thinking about the future of climate policy from predictive to anticipatory: a reorientation from "navigating 'what will be'" to "thinking through alternative 'what ifs?'" (Boettcher et al. 2016). The workshop organiser aimed to encourage the participants to engage experimentally with conceptions of the future. Additionally, the workshops were designed to help the participants explore recommendations for various policy responses to deal with threats and opportunities across a range of plausible futures.

The events were designed to apply a **participatory foresight method** – namely, the construction of qualitative scenarios – to enable structured thinking about complex systems and possible futures containing many unknown unknowns, and to provide an initial framework for a future-

oriented discussion of policy recommendations in the face of these plausible futures. The workshops furthermore made use of **explorative** scenarios, which focus on the broader context of a topic in order to explore alternative future environments. These lie in contrast to strategic policy planning scenarios, which are designed to plot alternative courses of action and their consequences. Explorative scenarios trace the complex interactions of a broad range of political, economic, technological, and social factors in a variety of hypothetical futures. They act as thought experiments that deal with alternative assumptions about a wide range of developments in the future. Thus, they are context-dependent, subjective and **do not predict probable or desirable futures** (Gabriel 2014).

Qualitative scenario development processes are designed to draw upon inputs from multiple disciplinary perspectives, as well as alternative assumptions, expectations, and worldviews. As individual biases can lead to one-sided or linear-extrapolative thinking, such scenarios are best constructed in a participatory process of group communication. A methodologically sound process for participatory scenario construction promotes critical reflection of the scenario development process, and allows for intersubjectivity, contributing to shared meanings and understandings and thus widening the range of plausibly imaginable futures. Participatory scenario construction thus provides a platform for structured communication that facilitates inter- or transdisciplinary thinking about possible futures. (Gabriel 2014: 5 – 7).

The qualitative foresight process applied in these workshops was conceptualised and facilitated to provide a platform for structured communication about a range of **logically consistent** and **plausible** futures.[1] A consistent scenario is composed of logically coherent **factor projections** (see section

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[1] The methodology applied in this workshop is adapted from that developed by the organisational consultancy © Foresight Intelligence.

2.3) that, taken together, describe a future situation. A plausible scenario also provides a credible and comprehensive illustrative trajectory that leads to a consistent future situation, exemplifying the changes necessary to end up in a certain future situation. So, a qualitative scenario is not only a **picture of the future**, but it also includes a rich **"history" of the future** – a pathway which describes how to get to that imagined future (Gabriel 2014: 3).

The workshop facilitator set **two broad guiding conditions** for the participants. The first was the **scope** of the climate policy futures being discussed, which was set to focus on **the German context**, but taking wider the EU climate policy landscape into account. This choice was made as German climate policymaking is highly embedded in and dependent on EU climate policymaking (Knodt et al. 2020)[2]. Secondly, the **timeframe** for the scenarios was set to the year **2030**. This choice was made based on the current expected timelines for German and wider EU climate policy, which stipulate that Germany should reach net-zero greenhouse gas emissions by 2045 and net negative emissions in 2050 (Presse- und Informationsamt der Bundesregierung 2023). Therefore, the assumption put forward by the organiser was that key climate decision-making processes on climate policy would be initiated before 2030.

The following sections outline the participatory scenario development process, provide detailed descriptions of the resulting scenarios, and detail comparative reflections on all scenarios developed, before drawing conclusions about the workshop process and insights developed during it.

[2] Despite this focus on the German/EU context, linking to the wider context of global emissions scenarios and international climate targets was unavoidable. The group was encouraged to also consider future external influences on EU and German climate policy ambitions.

Participatory scenario development process

Exploring the broader context

The first step of the scenario development process was an "environment scanning". The participants were asked to identify a broad range of geopolitical, economic, social, technological, environmental, and other factors (they could name as many as they liked) that could shape climate policy development in the next 5 – 6 years. The resulting collection of factors where then clustered by the participants into **larger sets of factors** for the next step of the process (see Figure 1 below).

Narrowing down to key uncertainties

Following the first expansive compilation of factors, the participants conducted a simplified uncertainty-impact analysis to reduce complexity and select "key uncertainties". This process is designed to identify factors that (in the participants' collective estimation) have a **very high potential impact** on the future of climate policy, and whose plausible future outcomes have a significant range or spread, meaning their outcomes are **very uncertain**. Using different coloured stickers, the participants were asked indicate which of the clustered sets of factors gathered during the initial environment scanning they considered **both highly impactful and highly uncertain**. Following several rounds of discussions, the participants then **agreed upon seven highly ranked "key uncertainties"** to continue to work with (see Table 1 below).
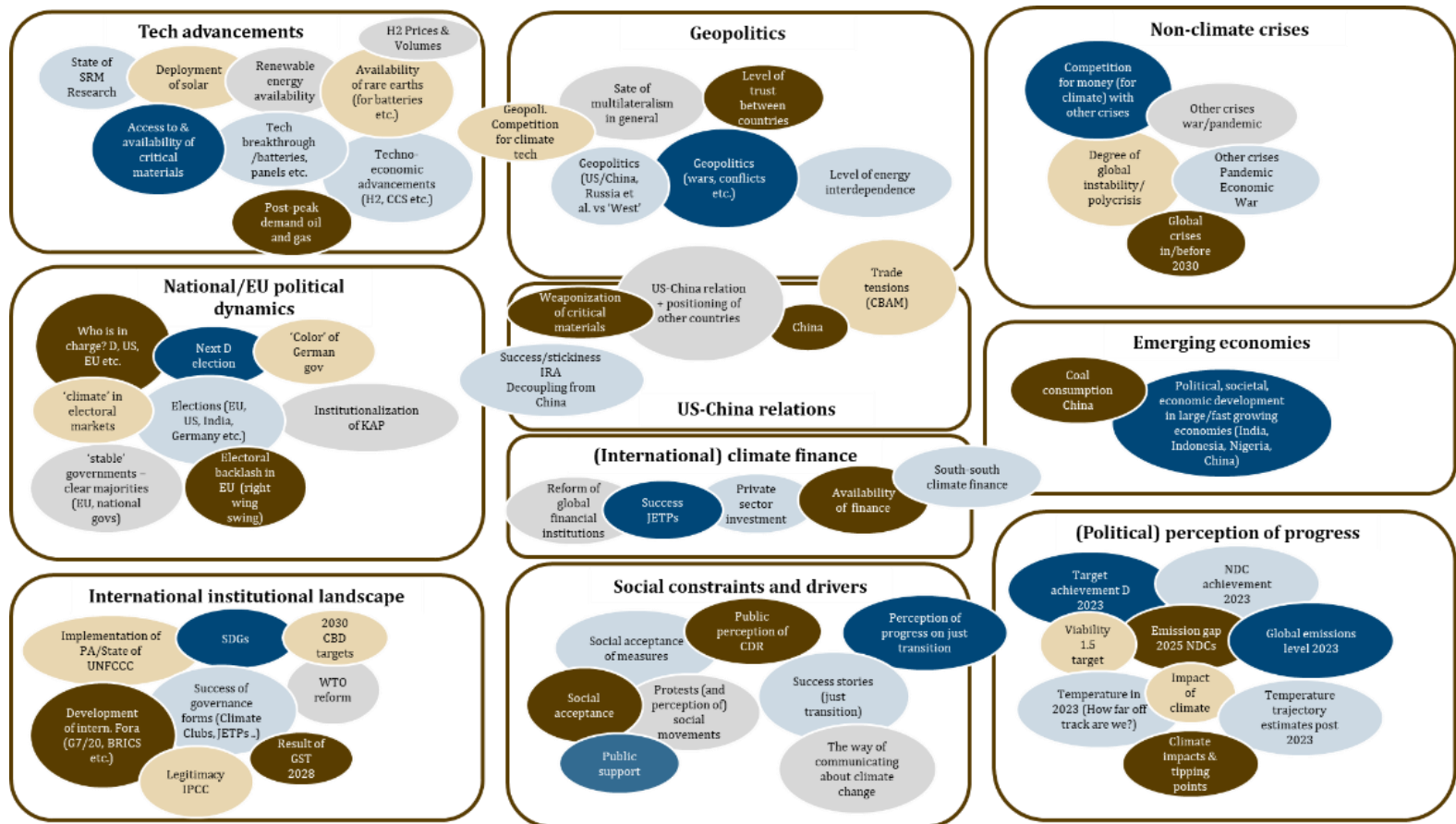
Figure 1: Results of environment scan & clustering

	Title/Description
KU 1	Who's in charge (national political dynamics, electoral dynamics)
KU 2	Techno-economic advancements (H2, CCS, CDR, renewables)
KU 3	Non-climate crises (pandemic, economic)
KU 4	Geopolitical rivalries and alliances (US/China, Russia et al./"The West")
KU 5	International climate governance mechanisms (does the Paris Agreement work as intended and guides national policymaking)
KU 6	Private sector investment/availability of climate finance
KU 7	Political perception of progress on climate (how far off track are we, emissions trajectories, climate impacts)

Table 1: Key uncertainties

Creating projections for key uncertainties

The participants then jointly developed at least **three distinct outcomes** for each key uncertainty in 2030 – a set of "projections" intended to cover the full spectrum of alternative plausible future states of a given key uncertainty. For this activity, the participants were asked to focus on each key uncertainty in isolation from all other factors, and try to imagine (at least) three possible outcomes of that factor in 2030 that were mutually exclusive, comprehensively exhaustive (MECE). Rather than thinking about likely future states of their factor, the participants were asked were to come up with a wide range of plausible future states of their respective factor, and reminded that a **plausible** future state is not to be confused with **probable** future state. The resulting sets of factor projections are outlined in Table 2 below.

	Description	Projection A (BC)	Projection B (WC)	Projection C (BAU)
KU 1	Who's in charge (national political dynamics, electoral dynamics)	Only pro-climate parties (the good guys) rule	Only anti-climate parties (the bad guys) rule	A colourful mixture of pro and anti-climate parties in power, with a slight pro-climate improvement over time.
KU 2	Techno-economic advancements (H2, CCS, CDR, renewables)	Breakthroughs and rapid upscaling of all climate relevant tech	Stagnation of all climate relevant tech (i.e. due to increase in cost)	Incremental but differentiated progress across different techs
KU 3	Non-climate crises (pandemic, economic)	Stability, no crises	Global, systemic instability, multiple ongoing global crises	Regional, sporadic, time-bound crises
KU 4	Geopolitical rivalries	Rivalries drive competitive action and alignments (race to the top)	Dysfunctional rivalries block action and alignments (race to the bottom)	Dynamic fragmentation, with some alignment differentiated by policy fields
KU 5	International climate governance mechanisms (does the PA work as intended and guides national policymaking)	PA fully guides ambitious national climate policy in line with targets & burden sharing (CBDR-RC)	PA is considered irrelevant, key (high emitting) countries drop out	Fragmented, key decisions taken outside PA, claiming & shining (promissory words with limited action). Thin layer of universal implementation (NDCs)
KU 6	Availability of public financing for climate, and private sector green investment	Public financing aligned with climate targets; green investment becomes a business model globally	Public and private financing for climate declining	Very limited private sector green investment, greenwashing
KU 7	Political perception of progress on climate (how far off track are we, emissions trajectories, climate impacts)	Step change: Perception of major progress in most countries on emissions reductions, climate impacts deemed low.	Too little, too late: Emissions still rising, climate impacts deemed very serious globally, perception of climate 'failure' (primarily mitigation failure & adaptation is not perceived as sufficient yet)	Incrementalism: Some progress, but perceived (by some) as not enough to achieve climate goals/prevent climate impacts (mitigation, adaptation etc.)

Table 2: Factor projections (BC = Best case, WC = Worst case, BAU = Business as usual)

Creating raw scenario frameworks

Participants then created a set of three raw scenario frameworks. Each scenario framework included one projection from each of the key uncertainties. Even with only three projections for each key uncertainty, there were a huge range of possible scenario frameworks. However, not all of them are conceptually consistent; certain projections could be mutually antagonistic. Consequently, the aim was to identify **logically consistent scenario frameworks**. Given the relatively small size of the group and the number of projections involved, this was done via group discussion in plenary. To begin constructing each scenario framework, one participant was selected to pick a projection to start from in the above factor projection table. The moderator then went around the room allowing others to volunteer to pick the subsequent projections from different factors in turn, always having to explain why and how their choice was consistent with the previously selected factor projections. If others in group disagreed with the consistency of the selected factor projection with those previously included in the framework, they were given the chance to suggest an alternative. However, if the participant who had originally selected the factor was not convinced by these arguments, s*he was free to stick with the original choice – provided s*he could justify the decision. Only one projection per factor was allowed to be used in each scenario framework. Once a factor projection had been used in one scenario framework, it could not be reused in another framework. Each participant was only allowed to pick one projection per scenario framework. Thus, each raw scenario framework was developed in as part of a participatory and communicative process. This process led to the addition of several more factor projections to ensure that the sets were comprehensively exhaustive. The factor projections that were grouped together to form the resulting three raw scenario frameworks (blue, yellow and red) are colour coded in Table 3 below.

	Description	Projection A (BC)	Projection B (WC)	Projection C (BAU)	Projection D
KU 1	Who's in charge (national political dynamics, electoral dynamics)	Only pro-climate parties (the good guys) rule	Only anti-climate parties (the bad guys) rule	A colourful mixture of pro and anti-climate parties in power, with a slight pro-climate improvement over time.	Only climate-agnostic parties rule
KU 2	Techno-economic advancements (H2, CCS, CDR, renewables)	Breakthroughs and rapid upscaling of all climate relevant tech	Stagnation of all climate relevant tech (i.e. due to increase in cost)	Incremental but differentiated progress across different techs	
KU 3	Non-climate crises (pandemic, economic)	Stability, no crises	Global, systemic instability, multiple ongoing global crises	Regional, sporadic, time-bound crises	
KU 4	Geopolitical rivalries	Rivalries drive competitive action and alignments (race to the top)	Dysfunctional rivalries block action and alignments (race to the bottom)	Dynamic fragmentation, with some alignment differentiated by policy fields	
KU 5	International climate governance mechanisms (does the PA work as intended and guides national policymaking)	PA fully guides ambitious national climate policy in line with targets & burden sharing (CBDR-RC)	PA is considered irrelevant, key (high emitting) countries drop out	Fragmented, key decisions taken outside PA, claiming & shining (promissory words with limited action). Thin layer of universal implementation (NDCs)	Only carbon market mechanisms implemented, economic optimisation, market-based governance
KU 6	Availability of public financing for climate, and private sector green investment	Public financing aligned with climate targets; green investment becomes a business model globally	Public and private financing for climate declining	Very limited private sector, some public green investment, greenwashing	No public financing, private only
KU 7	Political perception of progress on climate (how far off track are we, emissions trajectories, climate impacts)	Step change: Perception of major progress in most countries on emissions reductions, climate impacts deemed low	Too little, too late: Emissions still rising, climate impacts deemed very serious globally, perception of climate 'failure' (primarily mitigation failure & adaptation is not perceived as sufficient yet)	Incrementalism: Some progress, but perceived (by some) as not enough to achieve climate goals/prevent climate impacts (mitigation, adaptation etc.)	Stagnation: no progress, but also no perceived negative climate impacts

Table 3: Three raw scenario frameworks (Blue, yellow & red). BC = Best Case, WC = Worst case, BAU = Business as Usual

Creating pictures and histories of the future

In smaller groups, the participants then fleshed out these scenario frameworks between the two workshops. They first described a coherent descriptive "picture" of the future, based on the projections in their respective scenario frameworks. They then created a corresponding narrative "history", or trajectory that could plausibly lead to the situations they described. They did this by conducting a backcasting exercise and creating timelines of key events that lead to their described pictures of the future. The result of such a process was thus a set of qualitative scenarios that not only provided a range of detailed pictures of the future, but also included a rich "history" of each future – a pathway which describes the key technological, economic, political and social changes that would have to happen between today and that imagined future.

Reporting back and group feedback

At the second workshop, each group was then asked to present their coherent descriptive "picture" of the future and the corresponding narrative "history", or timeline of events that could plausibly lead to the situations they described. In addition to asking questions to better understand the future worlds presented, the audience was invited to provide feedback on two sets of questions; (1) *What would you like to hear more about? How could this scenario be made more plausible?* and; (2) *Where were there strategic decision points in the scenario pathway? What types of decisions could (have) be(en) made to address the opportunities and risks presented in the scenario?*

Scenario descriptions

The following section contains details of the three scenarios developed at the workshops. The material presented for each scenario includes: (1) the raw scenario frameworks each breakout group used, (2) a set of "headlines" they developed to help describe their respective "picture of the future", (3) the timelines they used to explain their imagined pathway from today to that plausible future, (4) the narrative scenario descriptions, and (5) details about the feedback provided to each group.

Blue scenario: Good guys in a bad world

	Description	Projection
KU 1	Who's in charge (national political dynamics, electoral dynamics)	Only pro-climate parties (the good guys) rule
KU 2	Techno-economic advancements (H2, CCS, CDR, renewables)	Stagnation of all climate relevant tech (i.e. due to increase in cost)
KU 3	Non-climate crises (pandemic, economic)	Global, systemic instability, multiple ongoing global crises
KU 4	Geopolitical rivalries	Dysfunctional rivalries block action and alignments (race to the bottom)
KU 5	International climate governance mechanisms (does the PA work as intended and guides national policymaking)	Fragmented, key decisions taken outside PA, claiming & shining (promissory words with limited action). Thin layer of universal implementation (NDCs)
KU 6	Availability of public financing for climate, and private sector green investment	Very limited private sector, some public green investment, greenwashing
KU 7	Political perception of progress on climate (how far off track are we, emissions trajectories, climate impacts)	Too little, too late: Emissions still rising, climate impacts deemed very serious globally, perception of climate 'failure' (primarily mitigation failure & adaptation is not perceived as sufficient yet)

Table 4: Blue raw scenario framework

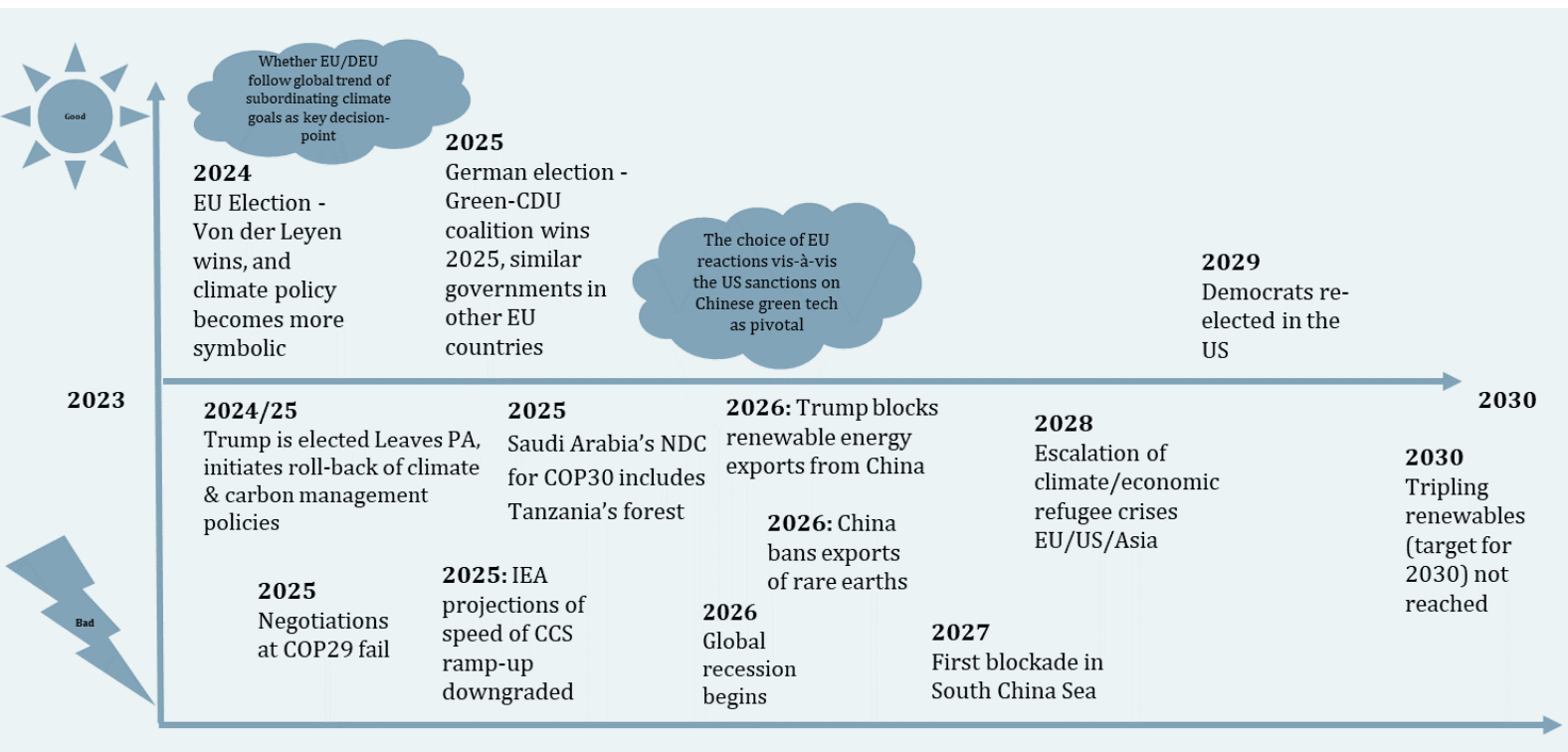| Global polycrisis hamstrings Greens' ambitions |
|---|
| How green-tech lost its shine |
| Economic progress stalled globally: Planetary polycrisis paralyses global trade |
| A slippery slope into de-globalisation? The return of the mercantile state |
| International climate politics at a stalemate: All hot air and little action |
| The price is not right: the private sector turns away from greentech |
| Too little, too late: recent survey shows public belief in mitigation at all-time low |

Table 5: Blue scenario headlines

Figure 2: Blue scenario timeline (clouds indicate critical decision points).

Blue scenario description: Good guys in a bad world

Global polycrisis hamstrings Greens' ambitions

In 2030, the electoral landscape has improved relative to the 2020s, and climate progressive parties are in power in almost all relevant democracies. In some countries, notably the US, this comes on the back of a legislature that saw strong anti-climate policies: Trump's election in 2024 led to concerted effort to dismantle the Inflation Reduction Act (IRA) and other subsidy programs aimed at facilitating the green transition (i.e. by incentivising nascent sectors like carbon management and hydrogen). Conservatives managed to channel the American cultural backlash against 'left wing climate politics' to deter private investment in greentech.

In other countries, there has been a continuation of climate-friendly parties in power. In Germany, a conservative-green (Christian Democratic Union/Green Party)

coalition formed after the 2025 elections, marking the start of a wave of similar coalitions coming into power across Europe. This 'dark green wave', however, lacks teeth, and has become hamstrung by fiscal restraints, stagnating economies and public investment, as funding is being redirected towards crisis management and national security. Green coalition participation has become compatible with a surge in nationalism in the Global North, directed against perceived economic stagnation, feelings of dislocation and in particular waves of (partly climate induced) migration.

In the European Union, von der Leyen won re-election in 2024, albeit based on a more right-leaning coalition in the European Parliament than during her previous term. In the European Commission, the Directorate-General for Climate Action (DG CLIMA) ceded competencies to the Directorate-General for Energy (DG ENER) at the beginning of the following legislative period. The implementation of the EU Green Deal continued post 2024, but climate policy has become more symbolic and in 2030 it occupies a less central role than it did 10 years ago. Up until and including 2030, attempts by pro-climate forces to push for more ambitious climate policy have regularly been hampered by agricultural interests throughout Europe. Pro-climate majorities in the EU Parliament and the Council remain fragile.

The EU is divided, often unable to act coherently, and consumed by the security crisis on its Eastern border. After Trump withdrew from NATO in 2026, the Ukraine war demanded ever greater resources from European countries, while the conflict in Gaza became regional in scope and rendered passage through the Red Sea impossible for Europe-bound shipping.

Geopolitical crises, fragile supply chains, stagnating industry and the election of Trump contributed to an economic crisis that turned into a global recession from 2026. Globally, the military and national security sectors require ever more financial and political resources that severely restrict investments for other political priorities. Conditions in Sub-Saharan Africa and parts of Middle-America have deteriorated further, and political instability and climate impacts have led to large numbers of refugees leaving towards Europe or the US' southern border. Amidst rising nationalist sentiment, both have introduced even more restrictive migration policies.

Internationally, global economic and geopolitical crises and the surge in nationalism means that even when pro-climate parties are in power, their interests have become disparate and the polarisation of climate politics has extended to the international level. In 2030, the new US administration is focusing heavily on protectionist reshoring and developing domestic green industry. Trump's second administration escalated the decoupling effort against China, with little regard for international concerns. Negative domestic effects like general price increases were made politically palatable by introducing additional subsidies for fossil fuels and cultural mobilisation against 'the left' and 'globalist elites'. Transatlantic trade talks broke down quickly, although the extent of cooperation with Trump marked a split between conservative and left leaning parties in Europe.

The US used its financial sanctioning regime to compel European allies and other countries to implement trade restrictions against China. The Trump administration identified Chinese industrial overcapacity, in particular in the solar sector, as the regime's central vulnerability and systematically restricted the export of solar components in 2026. US - China tensions escalated when China used a pretext to temporarily blockade Taiwan and the South China Sea in response to US trade restrictions. China also retaliated in the rare earth and minerals sector, severely restricting exports to the West.

Although the Democrats regained power in 2029, they have so far been unable (and partly unwilling) to reverse most of these policies for political reasons: There is still a strong pro-Trump/anti-left movement and

overturning all Trump's legislation threatens to further polarise the country. Although the new government is attempting to mitigate the worst effects of deglobalisation, they are also investing heavily in re-onshoring and green industrial policy to pacify pro-Trump nationalists. The EU's Carbon Border Adjustment Mechanism (CBAM), a continuous point of contention in transatlantic relations, has become a major roadblock in renewed US-EU trade-talks.

How green-tech lost its shine: Tech-optimism might not save us from climate change after all?

In 2030, promises about the potential of hydrogen (H2) as an alternative energy carrier have failed to eventuate. Lack of infrastructure (pipeline network, transportation etc.) continues to be a problem in many countries, while supply remains small. International H2 (component) trade is hampered by increasing nationalism and economic problems, while disagreements about which 'colours' of H2 are compatible with climate goals persist, especially within the EU. France hopes to establish pink H2, Germany insists on green H2. Rising (relative) prizes of renewables have made domestic production of H2 more expensive.

Carbon capture and storage (CCS), especially with direct air capture (DACCS) is an investment graveyard: Installing CCS infrastructure on many industrial and fossil fuel power plants around the world has proven even more expensive and time consuming than projected, as many plants remain half-built with investors suing to reclaim their sunk costs. Those plants that are operational are expensive to run and relatively inefficient at capturing carbon. In 2025, the IEA significantly downgraded its projections on CCS, which had the effect of further spooking already wary investors.

Geopolitical tensions (especially in the North Sea and South China Sea) have made transboundary (maritime) transportation of CO2 for storage dangerous and increasingly expensive. There are ongoing political conflicts within the EU between those who want to use limited transport infrastructure and geological storage capacity for CO2 from industry and the atmosphere, and those who want to use it primarily for CO2 from H2 creation.

Offshore wind parks are still extremely controversial among environmental organisations and fisheries groups, and in some areas (North Sea, South China Sea), they are also increasingly the target of sabotage. NIMBYism continues to be an issue in many countries, restricting the acceptance of onshore wind parks, especially as public belief in the ability of mitigation to address the climate crisis declines. Different energy sources are increasingly politicised and have become markers of identity, owing at least partly to successful lobbying by nuclear and natural gas groups.

International climate politics at a stalemate: All hot air and little action.

International climate politics in 2030 are characterised by a ballooning implementation gap. While national leaders try to outshine each other with promises, including ambitious Nationally determined contributions (NDCs) that still present a veneer of legitimacy, international climate politics has become ever more performative. Saudi-Arabia's new NDC, submitted before COP30 in Brazil, became exemplary, promising to achieve its 2060 net-zero target early by including large parts of Tanzania's forest and grassland as 'carbon removal counterbalancing'. After the US' announced withdrawal from the PA and with the debt crisis in the Global South pressing, COP29 failed to agree on a new collective quantified target for international climate finance. With the US unable to make financial promises, the EU's attempt to make 'broadening the donor base' a red line in negotiations backfired in the face of G77+China unity.

These developments are underpinned by increasingly divergent interests, as climate and energy policies of different countries often negate or hinder others. Large Global South countries like Brazil and India are combining climate politics with a heavy focus on developmentalism. OPEC+, strengthened by Brazilian membership, has become

a more unified and powerful international actor. It has managed to lower the price of oil and gas substantially, reaching price parity with renewables and increasing exports to developing countries that are unable to stem the upfront capital necessary for renewable energy. With increasing costs of renewables, EU countries periodically buy large proportions of the world market's LNG. The only country with a surge in renewables is China, albeit forced by its immense overcapacity and partial loss of access to fossil fuel imports thanks to US-led trade restrictions. In 2030, the IEA announced that COP28's target of tripling renewables has been missed.

The price is not right: the private sector turns away from greentech

Amidst geopolitical conflict, increasing cost of renewable energy, and lack of public funding to de-risk projects, the private sector has significantly decreased investments in greentech. Brazil's push to reform the international financial architecture has led nowhere as US-China disagreements on voting rights continue to dominate negotiations. Just Energy Transition Partnerships (JETPs) have also lost political momentum and failed to truly transform their respective country's energy sector. Cheap, low-

quality carbon offsets/removals have become the norm, as no internationally regulated trading and accounting rules have been agreed upon.

Too little, too late: recent survey shows public belief in mitigation at all-time low

After COP30 in Brazil, global discourse on the feasibility of the 1.5-degree target collapsed. Disillusionment with international climate efforts means that an attempt to refocus on the 2-degree target or on a 'every 10th of a degree matters' narrative failed to develop public salience. Instead, in 2030 publics believe that the time to invest in adaptation to the inevitable is more urgent. Social movements play a big role in this process, as movements in the Global North look to the Global South to learn from their efforts to push for adaptation. Social movements in the Global South are using this increased attention as leverage to call for more international financing for adaptation from the North. But funding and international cooperation for adaptation remain lacking – what little funding there is for adaptation is being deducted from mitigation funding.

Feedback

In the first round of feedback, all participants were asked:
What would you like to hear more about? How could this scenario be made more plausible?
A summary of the questions posed and the responses provided by the group is included below.

- ■ *Q: This scenario contains very little about the EU/Germany – what role might they play in this US/China relationship?*
- ■ **A:** In this scenario, it is assumed that the re-election of Trump could cause the polarisation of EU member states. This is especially as the Carbon Border Adjustment Mechanism (CBAM) is expected to remain as a huge point of contention, which could even lead to trade blockages. Also, in this scenario, it is plausible that ongoing regional conflicts would distract EU from being a major player on the global stage.

■ *Q: What could the next steps of the IRA conversely look like under Biden/the Democrats?*
■ **A:** This hugely depends on his voter base – for example, many younger people want an LNG moratorium etc, this might have an effect on Democrats' policies in the next term. But as Biden can't be elected again, perhaps he would care less about catering to voters' preferences. This is something everyone should think more about – most people are focused on what will happen to the IRA under Trump, and no thinking through what developments might happen if the Democrats win.

■ *Q: Why are emissions plateauing in this scenario?*
■ **A:** Emissions are plateauing mainly due to recessions – this is temporary or 'accidental' degrowth. The expectation in the scenario logic is that there will be a re-ramp-up of fossil fuels when geopolitical situation settles down again.

In the second round of feedback, all participants were asked to reflect upon the following questions:

Where were there strategic decision points in the scenario pathway? What types of (policy) decisions could (have) be made to address the opportunities and risks presented in the scenario?

The discussion of the first question led to the additional of critical decision points to the timeline (see Figure 2 above). The results of the discussion of the risks, opportunities presented by the scenario, and the policy responses discussed as suitable for addressing them are illustrated below (see Figure 3).
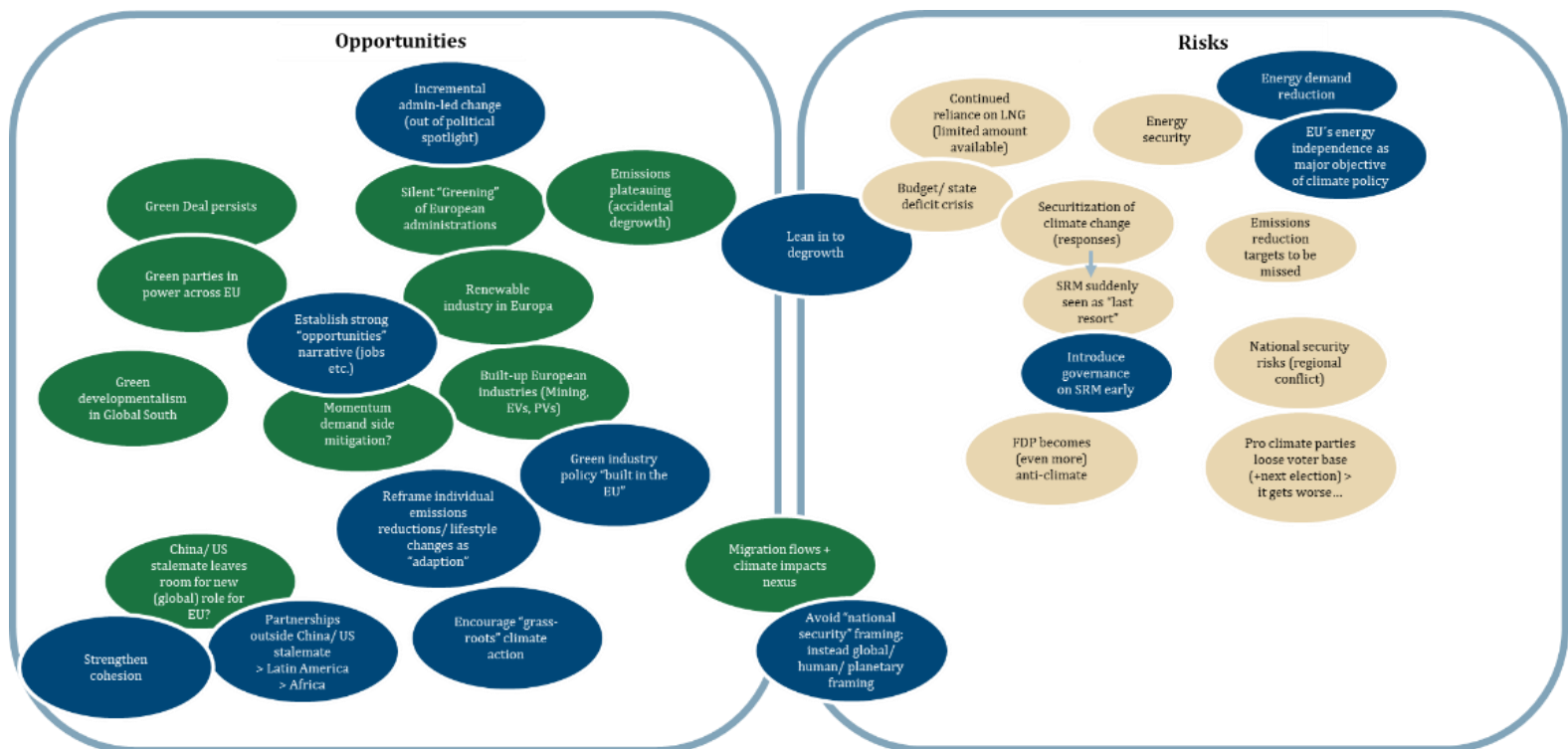

Figure 3: Blue scenario: Opportunities, risks & policy responses (green = opportunities, beige = risks, blue = policy responses

Yellow scenario: Brave new green-tech world

	Description	Projection
KU 1	Who's in charge (national political dynamics, electoral dynamics)	A colourful mixture of pro and anti-climate parties in power, with a slight pro-climate improvement over time.
KU 2	Techno-economic advancements (H2, CCS, CDR, renewables)	Breakthroughs and rapid upscaling of all climate relevant tech
KU 3	Non-climate crises (pandemic, economic)	Stability, no crises
KU 4	Geopolitical rivalries	Dynamic fragmentation, with some alignment differentiated by policy fields
KU 5	International climate governance mechanisms (does the PA work as intended and guides national policymaking)	PA is considered irrelevant, key (high emitting) countries drop out
KU 6	Availability of public financing for climate, and private sector green investment	Public financing aligned with climate targets; green investment becomes a business model globally
KU 7	Political perception of progress on climate (how far off track are we, emissions trajectories, climate impacts)	Incrementalism: Some progress, but perceived (by some) as not enough to achieve climate goals/prevent climate impacts (mitigation, adaptation etc.)

Table 6: Yellow raw scenario framework

Three wins, two losses: voters still undecided over climate
Green technologies start to dominate markets
Where have all the crises gone? 2030 to take off in stable political environment
Despite mixed climate ambitions, countries engage in green tech competition
Death knell for the Paris Agreement: India announces drop out, follows U.S. and China
With green infrastructure on the rise, investors more sceptical on future fossil fuel returns
2030 climate targets missed despite tech breakthroughs, but revived hope for next decade

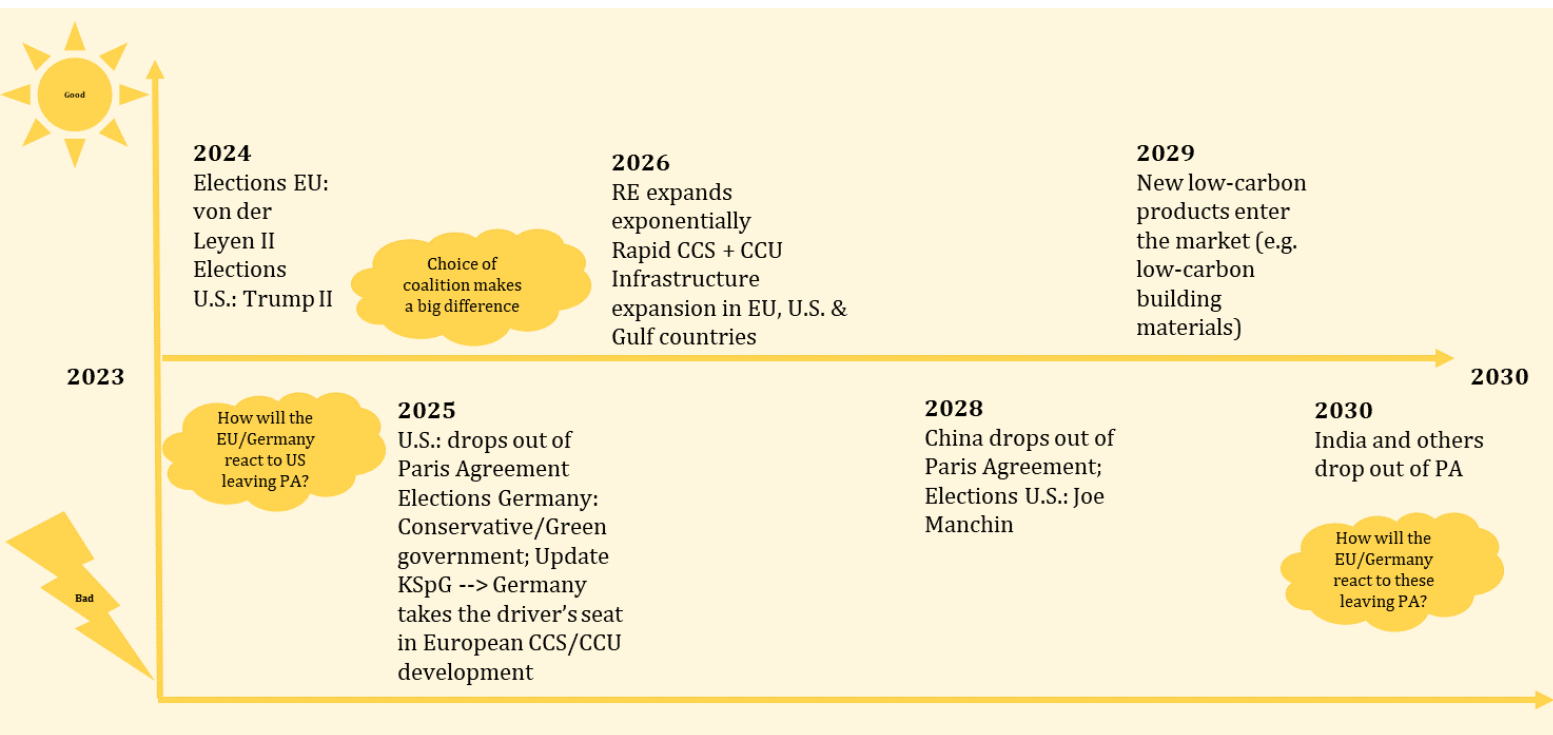**Table 7:** Yellow scenario headlines

Figure 4: Yellow scenario timeline (clouds indicate critical decision points).

Yellow scenario description: Brave new green-tech world

Super-election-year 2024 lays the groundwork for a brave new green-tech world in 2030. In the EU, Ursula von der Leyen gets re-elected as President of the European Commission. The Green Deal increasingly becomes a political mainstream project during the second half of the 2020s. The EU Commission and many EU Member States, however, no longer put the green transformation front and centre. During von der Leyen's second term, the Green Deal is now just one among many Deals, like the Industrial Deal, the Agricultural Deal or the Consumers' Deal. This trend continues after the EU elections in 2029.

In the U.S., Joe Biden wins re-election in 2024. Climate ambition continues in the White House through executive measures but no further climate legislation is passed. The Inflation Reduction Act (IRA) continues to drive private investment in green technologies through 2030. Many U.S. states now align their climate policies with the

2030 climate targets set by the Biden Administration. Clean technologies, including low-emissions hydrogen, renewable energy, CCS, CCU, CDR and others experience a boom. The same is true for the production of fossil fuels, however, which by 2030 are mostly exported to third countries. But natural gas, in particular, in combination with CCS, also remains a prominent part of the country's power mix. The U.S. misses its 2030 targets by some five percent. The U.S., moreover, continues its protectionist pathway, set by the Biden Administration's "Buy America" approach and the ensuing domestic content requirements. It further strengthens its trade restrictions in order to deter China. Responding to the EU's CBAM and the IRA, other G20 countries introduce measures to grow and protect their domestic green industries, as well. This leaves the global trading system more fragmented than at the onset of the 2020 years. In the 2025 elections in Germany, after CDU/CSU wins the most seats and ends up forming a coalition government with the Green Party, CCS and CCU gain particular prominence on the political agenda. After a

successful CO2 storage law (Kohlen-stoffdioxid-Speicherungsgesetz, KspG) reform, Germany emerges as the driver of CCS and CCU development in Europe, due to geographical location and the size of the German economy.

With Biden's re-election, EU leaders are increasingly concerned about losing industries to the U.S. Major European clean-tech firms announce investment decisions in the U.S., moving jobs abroad. Driven by competition from Washington and China, the EU puts a premium on large-scale green tech demonstration projects and infrastructure expansion, including for hydrogen, CO2 transport and storage, and EVs. The Gulf countries, based on their interest in maintaining a fossil fuel-based economic model, continue to support CCS, CCU and blue hydrogen at a large scale but also promote renewable energy and green hydrogen in parallel. Still betting heavily on global leadership in future technology markets, China continues to do all of the above. Green tech is booming, its share in energy markets is rising, but since overall demand continues to rise as well, hence absolute global emissions are only plateauing.

With many of the G20 countries increasingly channeling public finance into green technology development, private finance begins to follow, rendering finance compatible with global climate targets by 2030.

For many green technologies, the combination of early public financing, niche markets, private investment, favourable public perception (or at least permissive tolerance, in case of CCS) and growing global demand helps to spur innovation. As a result, by 2030 the costs for low-emissions H2, batteries and DAC decrease considerably. CCS and CCU are fully mainstreamed and widely adopted. Green and blue hydrogen as well as new low-carbon products begin to enter markets on a large scale. This includes low-carbon building materials which begin to replace Portland cement on a global scale as well as green steel which becomes competitive quickly due to low renewables-based electricity costs and the availability of low-cost hydrogen. Green growth models emerge as the most important mitigation dynamic next to national and subnational climate targets.

In 2028, former West Virginia Democrat Joe Manchin wins the U.S. general elections. Manchin continues the push for increased U.S. oil, coal and gas production and its "clean" use. The U.S., as most G20 governments at this point, supports green technologies through public procurement, tax incentives and subsidies. Manchin, however, decides to take the U.S. out of the Paris Agreement and begins to weaken the Biden Administration's climate regulation. Climate policy is increasingly based on the assumption that target setting follows techno-economic feasibility, not the other way around.

As a reaction to the U.S. elections in 2028, China finally decides to follow the U.S. by dropping out of the Paris Agreement in 2029. Unsurprisingly, India follows in 2030 as the next big emitter. Both major emitters are no longer ready to commit publicly to specific emission reduction targets if the U.S. – as the largest historic emitter – is not part of the agreement. This renders the Paris Agreement largely irrelevant for global mitigation efforts. Within UNFCCC negotiations, adaptation as well as loss and damage take centre stage. The EU works with those G20 members and new actors such as the Gulf states to expand adaptation finance. Moreover, it pushes for the adoption of trade instruments such as low-carbon product standards to level the playing field for its green technologies internationally.

While many countries still continue to pursue the targets communicated in their updated 2025 NDCs, hoping for the major emitters to eventually return to the Paris Agreement, China and India seek to accelerate the transition to a post-Paris regime that respects Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) and equity and focuses on "well below 2C" to allow them "carbon space" in developing their economies.

Amidst a relatively stable (geo-political) environment at the beginning of the decade, 2030 therefore emerges with considerable climate mitigation success despite a lack of political ambitions. Most key emitters miss the 2030 NDC targets announced at the beginning of the 2020s but there is hope that the surge in green tech development will bend the curve before 2040 and keep the global goal of well below 2°C within reach.

Feedback
What would you like to hear more about? How could this scenario be made more plausible?

- **Question:** *Why did India have to leave the Paris Agreement (PA)?*
- **Answer:** PA is about mitigation first. India wants to focus more on adaptation, and that can be done outside of PA, within the larger UNFCCC framework. In this scenario, India just does not want to be bound by mitigation stipulations.

- **Question:** *In 2029, there is 'surprising progress in an area were weren't focusing on' - low carbon building materials – cement – why is this surprising?*
- **Answer:** Building materials are rarely discussed in politics currently, but is a huge source of residual emissions, so even if it is not technically surprising, it is politically unexpected. After this shift, CCU & CCS infrastructure might lead to stranded assets in the cement industry, OR these infrastructures might have led to this progress/continued to be used in this process (i.e. in creating low-carbon building materials using captured carbon).

- **Question:** *Favourable political environment for tech development –what does this mean?*
- **Answer:** Little regulatory intervention, all carrots, no sticks scenario. Political and economic momentum created.

- **Question:** *Elections don't play a big role? Could have chosen a different path? The Green Party's legacy makes a big difference? If it wasn't in the new government in this scenario, maybe CCS wouldn't be so important? CCS as the Hartz IV of the Greens?*
- **Answer:** This will have to remain an open question. But there is some evidence of a more general Green party 'circular carbon economy' discourse emerging vs. the more industrial policy CCU discourse within the current debate.

- **Question:** *Why are countries leaving the PA in this scenario, when the costs of staying (and still doing little) are low? Why take the reputational hit?*
- **Answer:** Because they want to make a point. Prolonging a discourse that emerged under Trump I – other countries don't want to take up the slack while the US is 'out of the game' for 4 years. China & India stopped caring in this scenario. They don't want to carry the torch. UNFCCC still plays a role in this scenario. But thinking of Paris just like Kyoto – it will hit a wall, and something else will emerge. This scenario happens in the transition phase.

- **Q:** *Emissions – are they going down or up?*
- **A:** Plateauing globally in this scenario.

- *Q: What is happening with adaptation (in 2030)? More financing for adaptation?*
- **A:** No money to be made with adaptation, so not very plausible Q: Is there any private capital in adaptation so far (in 2024)? A: Not a lot.

- *Open question: What if we don't think about just carbon, but about biodiversity, other SDGs? We focus on carbon emissions mitigation rather than climate policy as a whole. This is our bias? What would change in the scenarios if we broadened our perspective?*

Where were there strategic decision points in the scenario pathway? What types of (policy) decisions could (have) be made to address the opportunities and risks presented in the scenario?

The discussion of the first question led to the additional of critical decision points to the timeline (see Figure 4 above). The results of the discussion of the risks, opportunities presented by the scenario, and the policy responses discussed as suitable for addressing them are illustrated below (see Figure 5).
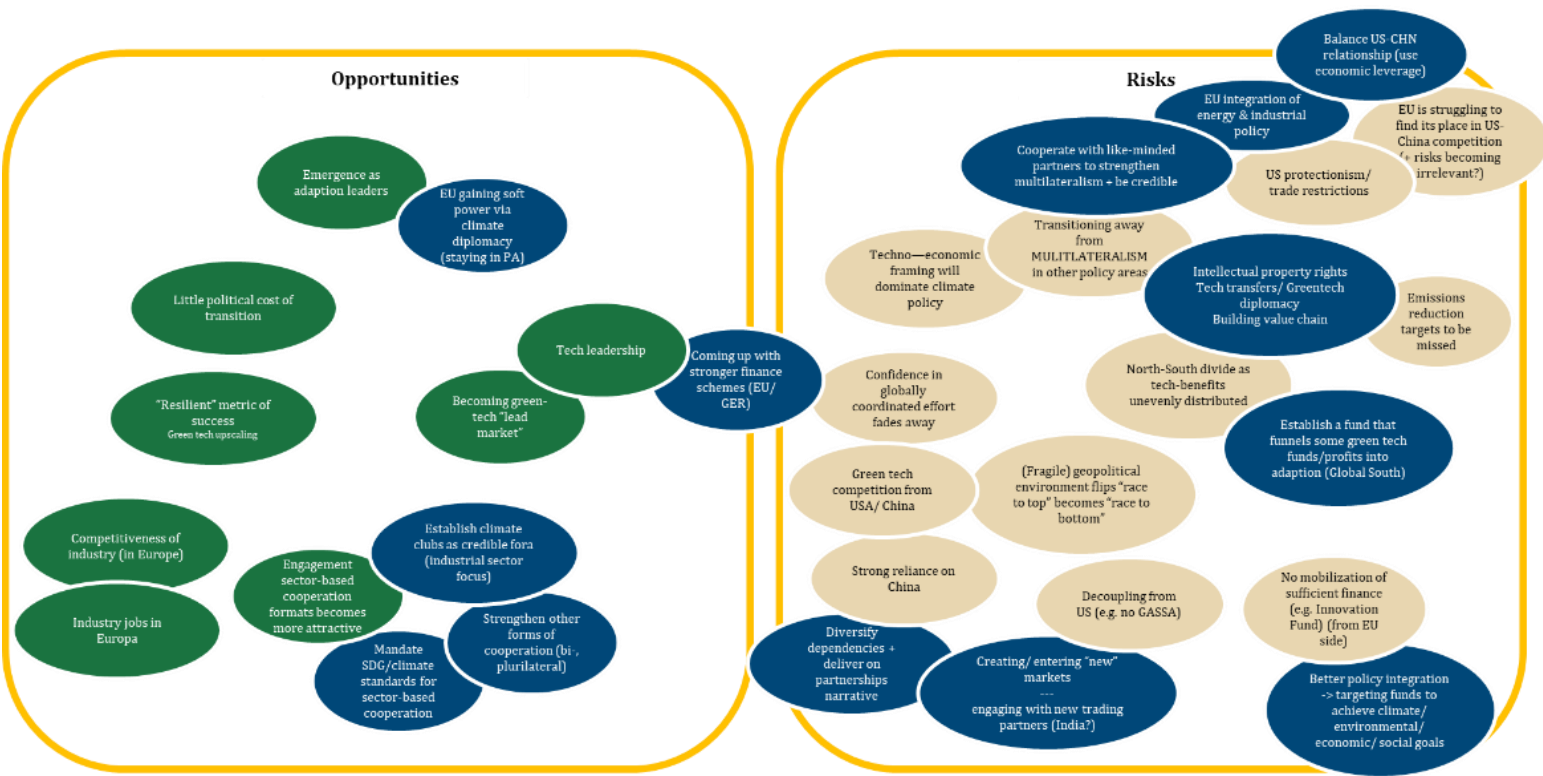

Figure 5: Yellow scenario: Opportunities, risks & policy responses (green = opportunities, beige = risks, blue = policy responses

Red scenario: Less is more: Market for climate

	Description	Projection
KU 1	Who's in charge (national political dynamics, electoral dynamics)	Only climate-agnostic parties rule
KU 2	Techno-economic advancements (H2, CCS, CDR, renewables)	Incremental but differentiated progress across different techs
KU 3	Non-climate crises (pandemic, economic)	Regional, sporadic, time-bound crises
KU 4	Geopolitical rivalries	Rivalries drive competitive action and alignments (race to the top)
KU 5	International climate governance mechanisms (does the PA work as intended and guides national policymaking)	Only carbon market mechanisms implemented, economic optimisation, market-based governance.
KU 6	Availability of public financing for climate, and private sector green investment	No public financing, private only
KU 7	Political perception of progress on climate (how far off track are we, emissions trajectories, climate impacts)	Stagnation: no progress, but also no perceived negative climate impacts

Table 8: Red raw scenario framework

| "Less is more": The new right-wing EU Commission is placing the "rightsizing" of climate policy at the centre of its political priorities. |
|---|
| Shattered dreams: How green hydrogen and CDR failed during the 'critical decade' |
| Prepping for new crises: Why we need multi-dimensional resilience |
| Climate superpowers: China and the US are competing for a green future |
| The good, the bad, the ugly: market instruments, the new heart of international climate negotiations and national climate policy |
| Green Growth for the win: climate policy relies increasingly on private investments |
| Hyperbole around climate change: The planet is going to be fine |

Table 9: Red scenario headlines
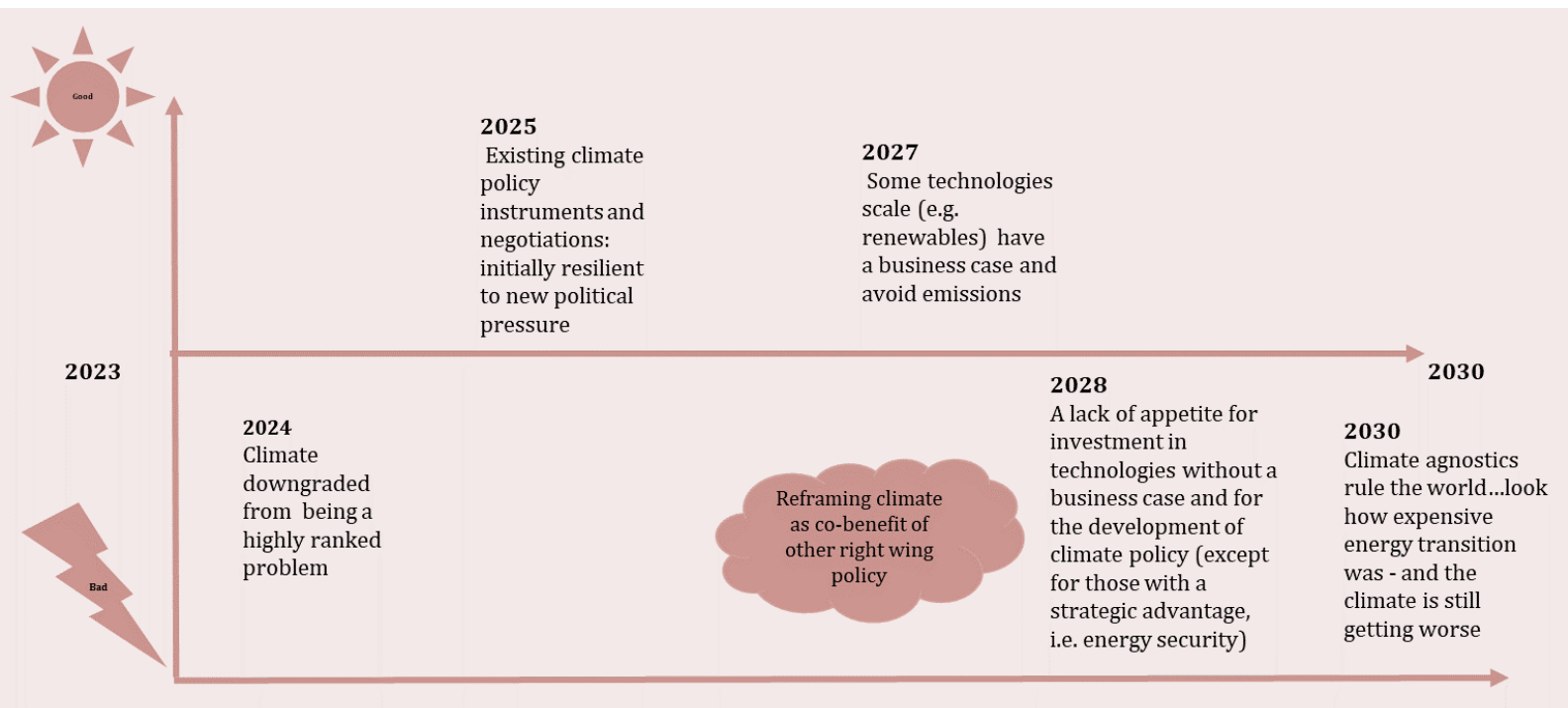
Figure 6: Red scenario timeline (clouds indicate critical decision points).

Red scenario description: Less is more: Market for climate

With regard to ambitious climate policy the electoral landscape has deteriorated in 2030 compared to the 2020s and climate agnostic parties are in power in almost all relevant democracies. After the European elections in 2024, climate was downgraded from a top priority to a lower priority. The primary driver for this was the newly formed right-wing EU Commission which has made the "rightsizing" of climate policy one of its political priorities.

The emergence of other, non-climate-related crises has also contributed to this development: The new crises are regional, sporadic, and temporal in nature, but collectively they have a strong impact on Germany's and the EU's prosperity. As a result, the attention of both policy makers and the general public is increasingly shifting away from the climate crisis. The competitiveness and resilience of European industry and other sectors such as agriculture receive considerably more attention from policymakers at all political levels.

On a global level, a competitive dynamic for clean technologies has developed. As major global economic powers, the US and China are both investing heavily in clean technologies through major industrial policy programs with strong emphasis on domestic manufacturing. Their competition is leading to rapid progress and cost reductions in these technologies. These developments provide a degree of, albeit small, resilience against the failure of the UNFCCC negotiations. At the same time, however, the US and China link their investments into clean technologies to high and rigid tariffs, leading to increasing trade conflicts between them and their allies.

The EU is consumed by this multiple crisis context and divided over the right response. Member states are often unable to act coherently and the attention of decision-makers is fully focussed on internal challenges. As a result, the EU's ambitions to use its instruments and institutions as a global actor to assert its interests and those of its citizens on the world stage have failed. The image of the EU as a "normative power" in world politics has been severely damaged and has led to a fundamental loss

of prestige in international relations. The multitude of crises exposed vulnerabilities in global supply chains as well as the new conflictual dynamics in the trade regime led the EU and member states to reconsider their reliance on international trade for critical goods and services. A new appetite for protectionism is emerging under the mantle of a "resilient" industry. Protectionist policies are being justified as necessary for protecting domestic industries from foreign competition and making them capable of withstanding the various global shocks and uncertainties that shape the 2030s.

Even more than in the mid-2020s, the climate crisis is seen as just one challenge in a mosaic of crises. However, as former governments have done a good job of translating the European Green Deal into solid legislation running until 2030, accompanied by functioning social compensation systems, the existing climate instruments were initially largely resilient to the new pressure from the right after the 2024 European elections. Now, during the (next) critical decade between 2030 and 2040, however, no majorities can be found for ambitious follow-up legislation.

While the EU is focussing on strategic autonomy and protectionism in its global trade policy in view of the difficult global economic and geopolitical situation, its domestic climate policy is fully market-based. But market-based instruments have fallen short of their promise. Due to political interventions in times of economic and other crises, the EU's Emissions Trading System (EU ETS) increasingly suffers from a surplus of emission allowances which leads to prices hitting an all-time low. The fall in carbon prices is diminishing the incentive for industries to invest in cleaner technologies and hurting funding for EU level schemes such as the Modernisation Fund as well as funding for national budgets. Lower carbon prices mean reduced funding for urgently needed climate action. As a result, the mitigation investment gap is widening.

Overall, the EU's market-based domestic climate policy is full of loopholes. Justifications such as "resilient industry" and "just transition" have turned out to be empty arguments for delay. Broad and ambiguous definitions of "hard to abate emissions" allow industry to significantly delay its decarbonization efforts. While carbon markets are still in place and basically the only continuing climate policy, exemptions for industry and the lack of pricing for agricultural emissions put emissions reductions on pathways inconsistent with net-zero greenhouse gas emissions in 2050. These developments are accompanied by a decline in private finance for climate policy. The German debt brake is not reformed, and tax breaks lead to a decline in government budgets. A severe crisis in the EU budget, caused by the need to repay the NextGenerationEU funds used during the Corona pandemic, diverts funds further away from climate-related financing mechanisms such as the Innovation Fund. Financial flows are being channelled into building up the police apparatus and border control. Ultimately, there is no public funding for climate, and climate policy relies solely on private investment.

Government intervention in the market economy is rejected. However, since some clean technologies are scalable and have a business case, especially thanks to the positive competition between the US and China (race to the top), they are widely used in Germany and the EU. The European market benefits from the advancements and competitive pricing resulting from this global rivalry, facilitating the integration of clean technologies into their energy sector. This is leading to declining emissions in the energy sector, where the long-awaited "green growth" can be claimed.

Overall, however, the EU is lagging behind in the development of clean technologies due to a lack of the right incentives and funding. The industry, transport and agriculture sectors do not show significant emission reductions. A new narrative fuels the agenda of the climate agnostics: they add up the funds

channelled into the energy transition between the years 2010 and 2030 and the fact that the climate is still getting worse. Although clean technology innovation in China and the United States is helping to reduce emissions in some sectors, emissions from agriculture and transportation are increasing. The global goal of net-zero CO_2 emissions by mid-century is out of reach. Both in Europe and in other parts of the world, a renewed push for international carbon markets is gaining traction as a key next step in climate policy. A weak agreement on Art. 6 – full of loopholes and double counting – in the late 2020s is the basis for this new initiative to establish an international carbon market. Instead of avoiding "hard-to-abate" emissions, these measures are intended to incentivize mitigation in other countries. By blurring removals and low MRV standards for all mitigation actions, this new reliance on carbon markets will not help achieve climate goals – in Europe or elsewhere in the world.

Feedback
What would you like to hear more about? How could this scenario be made more plausible?

- **Q:** *International dimension – what is happening on this level?*
- **A:** In this scenario it is assumed there is some talk about linking market schemes, but it doesn't work. There is no other EU ETS to link to, and UNFCCC Article 6 developments are deadlocked. You can buy carbon credits elsewhere. Because of the legacy of existing policies and instruments, things go well for a while but because there is no follow up, things will get worse over time.

- **Q:** *Protectionism and liberal market mechanisms – how does this work together?*
- **A:** Domestically based market mechanisms work, but internationally no joint market exists, and countries fall back on protectionism.

- **Comment:** Spelling out the loopholes and resilience argument a bit more would help with the narrative.
- **Comment:** Some green techs are scalable, some aren't. Is it really plausible that any of these technologies are scalable within this timeline? Building out this argument a little would help to make it a little bit more plausible. Solar and wind as plausibly scalable by 2030, others less so?
- **Comment:** 'We spent a lot of money, it didn't work, let's do something else' narrative is emerging in this scenario.

Where were there strategic decision points in the scenario pathways? What types of (policy) decisions could (have) be made to address the opportunities and risks presented in the scenario?
The discussion of the first question led to the additional of critical decision points to the timeline (see Figure 6 above). The results of the discussion of the risks, opportunities presented by the scenario, and the policy responses discussed as suitable for addressing them are illustrated below (see Figure 7).
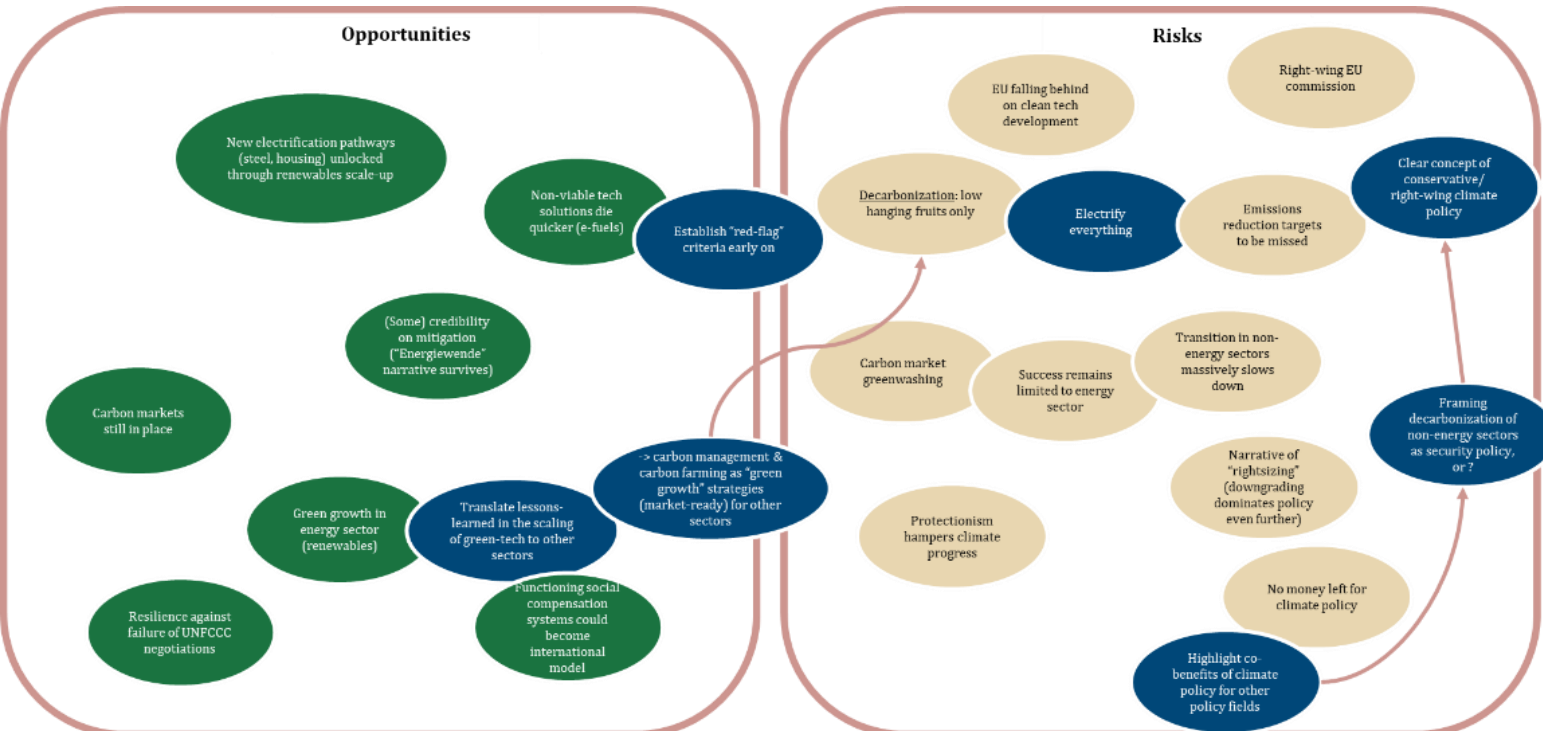
Figure 7: Red scenario: Opportunities, risks & policy responses (green = opportunities, beige = risks, blue = policy responses

Comparative reflections & conclusions

This section documents the final step of the second scenario workshop, in which the participants engaged in a comparative reflection process designed to broaden the analytical lens to include all the scenarios. They were asked to reflect upon and discuss two questions: (1) *What are key context conditions driving (policy) developments across all scenarios?* and (2) *What types of policy developments could help address opportunities and risks presented across (all) the scenarios?* Their discussions are summarized below, followed by a brief reflection on the effects the project aims, design, and group composition may have had on the workshops' process and outcomes.

Key context conditions driving (policy) developments across all scenarios

When comparing across the scenarios, there are several points that stand out as common drivers:

The German elections in 2025 and the process of forming a new coalition government will play a key role for both national and EU climate policy. With the CDU leading in all current polls at the time of the workshops, participants discussed the potential impact of a change of government after the 2025 elections. In the blue and yellow scenarios, the CDU and the Greens form a joint coalition. However, depending on the election results, a coalition between CDU and SPD or a tripartite alliance are also plausible scenarios. While the German Climate Change Act and the embedding in EU climate policy instruments and targets provide a framework for future climate policy in Germany, the recent polarization in some areas (heating, transport) could lead to significant readjustments, depending on the coalition. Key issues for future discussion include: What would the climate policy debate look like in Germany with the Green Party in the opposition? What would happen if there was no possibility of a coalition being formed? There is a need to concretely think through alternatives under these differing assumptions about coalition formation.

After the 2024 elections, the EU Commission and many EU Member States no longer put the green transformation front and centre (in all three scenarios). All the scenarios have von der Leyen winning, because it was seen as highly plausible at the time of the workshops, but does it make a huge difference to the narratives? Given that at the time of the workshops (January & April 2024), projections of election results indicated that the Green Deal majority would remain intact after the European Elections in June 2024, the assumption that climate policy might continue largely BAU until 2030 given the robustness of existing EU climate policy shaped the conversations. However, there was a longer discussion of what could change if there were more of a right-wing swing in the European Parliament. In the red scenario, for example, the Green Deal persists, but becomes increasingly symbolic. It is resilient for a while, but is hollowed out over time. These discussions show that there is a need to think more concretely about what sort of right-wing

coalition might emerge, and how the dismantling of EU climate policy could unfold in practice. There may be too many checks and balances within the EU system for rapid change in the near term, even if a right-wing coalition should wish to do so. The discussions highlighted that the EU bureaucratic apparatus and legislative process is part of the resilience, adding an additional layer of complexity to anticipating future developments in EU climate policy. In addition, they showed that the composition and leadership of the EU Commission was not a key driver in the scenarios, but rather an enabling condition compatible with various climate policy pathways.

International climate governance and negotiations fail to drive global mitigation efforts (all three scenarios): In none of the three scenarios does the multilateral framework of the Paris Agreement meaningfully contribute to emissions reductions, as states turn to other cooperation formats and competition between energy transition models takes over. Its long-term temperature goal is largely seen as irrelevant while conflicts between developing and industrialized countries block progress on mitigation. NDCs are still in place in the yellow scenario, but serve largely to legitimize insufficient domestic policies, as Art. 6 does in the red scenario. The possibility of adaptation becoming an additional central focus of climate policy was mentioned repeatedly and should be thought through further.

Recommendations which could address opportunities and risks in (all) scenarios

Quite often, the call for more European integration is the first recommendation for strengthening future climate policy. However, our anticipatory foresight exercise showed how the different political levels are inextricably linked – sometimes directly, sometimes indirectly. One of the key challenges for future climate policy will therefore be managing the interfaces and overlaps of climate policy and governance across different levels.

Explicitly addressing these interconnections could enhance the effectiveness of climate policy in a range of plausible futures by fostering greater coordination, resource sharing, and policy coherence among EU member states. It would enable the harmonization and reduce friction of regulatory frameworks and standards, which reduces fragmentation and ensures more consistent and comprehensive implementation of climate policies across the EU. Furthermore, managing interfaces proactively would strengthen the EU's collective bargaining power in international climate negotiations, enabling the bloc to advocate more effectively for ambitious global climate action, which would be all the more important in the face of the election of climate agnostic or anti-climate parties in other major countries.

Work out the (climate policy) role of the EU in the China/US relationship: In the scenarios outlined here, the EU was assumed to be a relatively weak actor on the international (climate policy) stage. But it was also plausible that EU climate diplomacy could profit from the others dropping out of the PA. There was a need to think through how the EU could step into this leadership void in international climate policy, and in particular how the EU could gain credibility by managing the competition between the US and China. Strengthening the external dimension of the European Green Deal, for example by better listening to and responding to the concerns of the partners impacted by its legislation, was identified as key. The role of Germany within this dynamic was also discussed, and whether it made more strategic sense to focus on establishing ad-hoc, interest-based climate partnerships, or to focus on value-based climate diplomacy. As such, a key recommendation was the clarification of the respective roles of the EU and Germany within the dynamic international climate policy space – often seen as being structured by the US/China relationship.

Develop EU Green-tech diplomacy: European green industry/green industrial policy development (shielding EU business from international developments, creating new narratives around the Green Deal, establishing tech transfer partnerships with emerging economies etc.) was seen as a promising way to position the EU in a range of plausible futures. Conversely, industrial policy might create new conflicts with key allies, and the EU would face expectations of reacting to the recent surge of green industrial policy in the US and China, among other countries.

Emphasise co-benefits narratives: The scenarios highlighted that the urgency of climate action is not enough to move policy forward. Rather, climate policy has to be expressly linked to other policy issues (industry, jobs, economic opportunities, security). It was clear in all the scenarios that communication/narratives and framing of climate policy have performative effects on the implementation of policies– e.g., national security vs. international (human/planetary) security framing.

Adaptation discussion needs to be further developed in Germany/ EU/globally. The scenarios highlighted that there is somewhat of a 'adaptation blind-spot' in many climate policy discussions in the EU. Questions that should be more clearly explored include: What would coalitions/cleavages look like under an 'adaptation first' pathway? How would international partnerships and multilateral negotiations change? The assumption is that states would have a typology of more or less 'appropriate' adaptation approaches that would be used to direct partnerships. What would EU/German adaption policy interests be? What are the practical elements/pragmatic elements driving EU/German support of adaptation policy? Would the focus be on developing bigger partnership packages (not necessarily primarily climate related)? Climate security as adaptation support? How would a potential conservative chancellor talk about global adaptation efforts? There is a clear need to delve deeper into the potential political dynamics of adaptation, both within Germany, on the EU level, and internationally.

Consider emerging economies as climate actors: The scenario development and reflection process highlighted that there is often too much focus on China/US relations, and how the EU should act within this landscape. There is a gap on emerging economies (Brazil, India etc.), and what role they might play as active climate policy/politics actors (rather than the larger international context within which climate policy plays out). More effort should be put into understanding the interests and roles of emerging economies as climate actors vis-à-vis Germany and the EU.

Understand the politics of linking climate with other policy domains: There is a need to think more concretely about links between various wider policy fields and climate policy; e.g. agricultural, industrial, marine and energy policy. Key questions for further reflection include: What does it really mean to think these policy fields together? What are the politics of always asking for more links, and making a complex problem more complex? This is often seen as an attempt to create more venues for action, and get climate onto different stages. However, there often seems to be the assumption that the other side wants what 'we' want in terms of climate. This is not always true, there is often a push back against the 'climatization' of different policy fields. And by expressly linking climate to other policy debates, there is a risk of 'spill over of politics' – as exemplified by the agriculture lobby striving for more influence on climate policy decisions in the EU Parliament. Therefore, key questions to investigate include: What are the politics of the climatization of other policy fields? The politics of including other political objectives in climate policy? The effects of inventing new elements of climate policy (carbon farming) to deal with issues in other policy fields (i.e., agriculture)?

- **Work out the (climate policy) role of the EU in the China/US relationship**
- **Develop EU Green-tech diplomacy**
- **Emphasise co-benefits narratives**
- **Further develop the adaptation discussion in Germany/EU/globally**
- **Recognize emerging economies as climate actors**
- **Understand the politics of linking climate with other policy domains**

Reflections on project aims, design, and group composition

There is an inherent balancing act involved in organising such a participatory foresight process – balancing between providing a structured approach to enable a consistent, robust scenario development process and the need to allow for creativity within that structure. The workshop organiser attempted to maintain this balance by providing a guided, step-by-step process, but at the same time encouraging participants to step outside the bounds of that process – i.e. by adding new factors that had not appeared in the initial horizon scanning exercise, encouraging the workshop participants to define their own key uncertainties and to expand their number of factor projections beyond the originally suggested set.

Another related limiting factor was, as always, **time** – there is never enough time! Participatory foresight processes are collective learning and communication processes, and as such there is always more to say, more to ask, more to debate. Ideally such processes would stretch over several meetings to build shared understandings of the topic, and enable ongoing discussions of contentious issues. The organiser endeavoured to create this environment to the extent possible within the limited time frame, but recognises that more time would have been helpful.

Scenarios developed in participatory foresight processes such as this one are only as diverse as the people in the room. All participants of this scenario development process work at the same institution, and have a background in international climate politics, political science or related fields. The specific composition of the group is assumed to have shaped details of the resulting scenarios, but as section two outlines, the participatory scenario development methodology was designed so that the underlying frameworks themselves were jointly produced by the larger group, and each final scenario was also subject to feedback and revision in plenary – both mechanisms for ensuring diverse perspectives were included. That non-withstanding, it cannot be ruled out that institutional culture, gender, seniority and power dynamics played a role in the development of the scenarios presented here.

The reflection process highlighted that we, as a group, should be more aware of 'group think', as well as the way our training, the context within which we work and operate, and our own positionality shape our assumptions about climate policy futures. Some of the key points that this more introspective reflection process raised were:

US/China relationship hardwired into all scenarios: The US/China conflict/relationship might be the most relevant for climate policy developments – it turns up all the time. This assumption acts as a kind of joker that makes us stop thinking outside the box. We could ask instead: What could happen if communist rule breaks down in China? What could

happen if there is a complete breakdown of the political order in the US (see e.g., contributions to Brozus 2016; 2018 & Böttcher & Brozus 2024)? We all assume that the China/US relationship will be relevant for all future climate policy developments. We are somewhat trapped within the abstract but linear understanding of current geopolitical developments.

The role of non-political crises as potential 'wildcards' was not addressed: We were all somewhat reluctant to include another pandemic or extreme climate events or other unexpected non-political crises, as we felt that this would have shifted the focus away from political dynamics as drivers of change. This seems like something of a blind spot, given the plausibility of future unexpected crises, and the need for climate policy to remain robust in the face of them.

Societal dynamics were never a key driver, but rather mostly a mediating factor in all scenarios. A different group could have a very different take on the agency of social movements. We seemingly all have a quite state-centred way of thinking about how political change happens.

Stickiness of the Green Deal – we all believe in this. Why? Others are more pessimistic, see the risk of roll-back. Is this just because we have a detailed understanding of how hard it is to undo EU policies, or is there another reason? Are we all (too) optimistic about the future of EU climate policy?

In sum, we reflected that we all share a preference for accepting certain premises, we all have certain assumptions/hopes about climate policy futures, and that these turned up in our scenarios. To break through this dynamic, we could consider attempting to develop some 'wild card' scenarios, and/or inviting external participants to our horizon scanning processes to help us think outside the box.

Conclusions

This report has detailed the process and reflected upon some of the insights from **one** participatory foresight process. It must be stressed that the scenarios developed were explorative thought experiments designed to provoke structured communication on **plausible** climate policy futures, and they were produced within the bounds of one foresight methodology by a specific group of participants. The resulting scenarios are context-dependent, and **do not predict probable or desirable climate policy futures**. The insights gleaned from this process should therefore not be taken as generalizable. Rather, they form the basis for further future-facing discussion, and demonstrate the utility of such methodologies for exploring complex climate policy futures.

The foresight methodology detailed here could be used in follow-up processes to develop an even wider range of plausible climate futures taking different context conditions into account, and involving varied constellations of participants. It could also be repeated by the same group of participants at a later date to facilitate reflection upon stable or changing assumptions about climate policy drivers over time.

As illustrated by the reflections outlined here, exploratory, qualitative foresight processes be a useful tool to help: (1) widen understandings of plausible climate policy developments, (2) increase critical reflection about assumptions that underpin the anticipation of climate policy developments within the SWP Research Cluster on Climate Policy and Politics and (3) identify policy recommendations which may be robust across a wide range of plausible climate policy futures.

References

Boettcher, M. & Brozus, L. (eds.) (2024): Weltpolitische Unwägbarkeiten: Erkundungen der Zukunft. Foresight-Beiträge 2024, SWP-Studie 2024/S 14, 07.05.2024. doi:10.18449/2024S14

Boettcher, M.; Gabriel, J., & Low, S. (2016): Solar Radiation Management: Foresight for Governance. Project Report. *IASS Working Paper*, April 2016. DOI: http://doi.org/10.2312/iass.2016.007

Brozus, L. (ed.) (2018): While We Were Planning Unexpected Developments in International Politics. Foresight Contributions 2018, SWP-Studie 2018/S 05

Brozus, L. (ed.) (2016) Unexpected, Unforeseen, Unplanned: Scenarios of International Foreign and Security Policy. Foresight Contributions 2015, SWP-Studie 2016/RP 01.

Gabriel, J. (2014): A Scientific Enquiry into the Future, *European Journal of Futures Research*, 15:31.

Knodt, M., Schoenefeld, J.J. (2020) Harder soft governance in European climate and energy policy: exploring a new trend in public policy, *Journal of Environmental Policy and Planning*, 22: 761–773. https://doi.org/10.1080/1523908X.2020.1832885.

IPCC (2022): Summary for Policymakers, Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001

Presse- und Informationsamt der Bundesregierung (2023). Climate Change Act 2021 Intergenerational contract for the climate. Online: https://www.bundesregierung.de/breg-de/themen/klimaschutz/climate-change-act-2021-1936846. Last accessed 22.07.2024.

Miranda Böttcher, Ole Adolphsen, Oliver Geden, Jule Könneke, Felix Schenuit and Sonja Thielges are members of the SWP Research Cluster Climate Policy and Politics.