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Welcome to the Climate Club: Prospects for Europe and East Asia

POLICY PAPER OCTOBER 2022

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There is no desire more natural than the desire for knowledge

ABOUT THE AUTHOR

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INTRODUCTION

We are facing an alarming reality. The most recent UN climate change conference in Glasgow ended with a huge credibility gap between long-term commitments and short-term pledges[1], leaving the world still unable to reach the 1.5°C target set by the Paris Agreement[2]. Compounding on this grim truth, the war in Ukraine has triggered an inconceivable reshuffling of the global energy scene, pushing for further reductions in fossil fuels consumption, but also a revival of old energy security patterns[3]. Finally, China's decision to cancel any climate policy discussions with the United States after Nancy Pelosi's August visit to Taiwan disrupts future multilateral climate achievements[4]. In this increasingly turbulent geopolitical environment, **how can countries accelerate climate policy ambition?**

Growing climate policy stringency in Europe stoked fears over the existential threat of carbon leakage[5], and thus lent critical importance to protective measures such as the future Carbon Border Adjustment Mechanism (CBAM) and the **prospect of more international cooperation with trade partners**.

Discussions are currently ongoing at the G7 level, further supported by the incumbent German presidency, about the establishment of a **climate club of countries to enhance the international race toward net zero**. The German initiative aims to couple mutually agreed incentives and enforcement measures by fostering faster climate policy integrations in matters such as carbon pricing, but also trade and industrial policy. It represents a new attempt **to overcome the free-riding risk resulting from the lack of enforcement mechanism in the Paris Agreement**.

1 Credibility gap emphasized in recent reports such as: UNEP. (2021, October). *Emissions Gap Report*. https://www.unep.org/resources/emissions-gap-report-2021; or Climate Action Tracker. (2021, November). Warming Projection Global Update. https://climateactiontracker.org/documents/997/CAT_2021-11-09_Briefing_Global-Update_Glasgow2030CredibilityGap.pdf

2 See 6th IPCC Assessment report for the physical dimension of the gap between promises and actual emissions: Masson-Delmotte, V. et al. (2021). Summary for Policymakers – Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. *Intergovernmental Panel on Climate Change* (IPCC). https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/

3 Bloomberg. (2022, January 26). China's Xi Says Climate Targets Can't Compromise Energy Security. Bloomberg. https://www.bloomberg.com/news/articles/2022-01-26/xi-jinping-says-climate-targets-can-t-compromise-energy-security#xj4y7vzkg; and Dellatte, J. (2022, April 4). Russia-Ukraine: Short-Term Energy Security Doctrines, Long-Term Climate Damage?. *Institut Montaigne*. https://www.institutmontaigne.org/en/analysis/russia-ukraine-short-term-energy-security-doctrines-long-term-climate-damage

4 See: Malapaty, S. (2022, August 11). Will a freeze in US–China climate talks threaten global action?. *Nature*, 608, Pp. 657-659. https://doi.org/10.1038/d41586-022-02169-x

5 The EU Commission defines carbon leakage as the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints.

The German government's decision to launch the discussion on a climate club **using the G7 format raises questions**. The benefit of a G7-based club could be that this format already has a governance structure in place. Also, in theory, a climate club could overcome some of the challenges a larger platform such as the UNFCCC faces. However, to be truly transformational, a climate club would probably have to be larger than the G7, which would entail significant challenges.

In this context, **the role played by Northeast Asia is central to the debate over the implementation of a climate club**. The effectiveness of transformational climate clubs to accelerate global climate ambition depends on the participation of the most polluting jurisdictions. Northeast Asia alone represents around a fourth of the present global emissions[6]. It also means establishing common rules among a significant number of different partners and enforcing them with trust and transparency. Thus the importance of the trade relationship between Europe and Northeast Asian economies cannot be ignored in the climate club debate.

This research paper intends to fill a knowledge gap about **climate club political feasibility** and contribute to the negotiation of an ever-growing international climate policy ambition through practical policy recommendations. It uses a comparative climate policy analysis perspective and builds on a two-day policy dialogue that took place in July 2022 and a survey of more than 70 stakeholders from Europe, Japan, South Korea, and China. It assesses **what a climate club might look like** based on the G7 initiative proposal, **analyzes its feasibility, and gauges political support**. It also examines pathways for the clear necessity of attracting support beyond G7 countries by analyzing South Korean and Chinese stakeholders' opinions. Finally, this publication **provides policy recommendations for the establishment of an open Climate Forum based on the G7 initiative** and analyzes the following dimensions:

- the **role achievable for carbon pricing** and **for carbon border adjustment mechanism** (CBAM) in a climate club;
- the **potential of joint industrial policies** to reach carbon neutrality;
- the **governance and structural design** of a climate club;
- and finally, **the most appropriate strategy to enhance global climate policy**.

6 ClimateWatchData.(2022). *GHG emissions Climate Watch Data Explorer* [Dataset]. https://www.climatewatchdata.org/ghg-emissions?chartType=percentage&regions=WORLD&source=CAIT

WHY FORM A CLIMATE CLUB?

1. From an alternative to multilateralism to a complementary solution

Initially theorized as a possible alternative to a global climate agreement, then to respond to the gridlocked global climate policy process under the UNFCCC, climate clubs are not a new concept[7]. A climate club involves a group of jurisdictions mutualizing their efforts to raise their climate ambitions, using incentives, compliance mechanisms, or both, to make stronger progress in climate policy. As pictured in *Table 1*, they can take different forms, from lighter normative coalitions to legally binding transformational clubs.

As displayed in *Table 1*, COP26 saw the emergence of "light" climate clubs, sharing a common weakness: they are all legally non-binding coalitions having low entry barriers and therefore gain quickly a large membership. However, the lack of binding targets or enforceable rules often leads to a low climate policy ambition. More ambitious and legally binding transformational climate clubs, on the other hand, have the potential to strengthen global ambitions. However, these kinds of clubs with legally binding elements are **politically more difficult to implement**.

Table 1. Types of climate clubs[8]

	Raise climate policy ambition	Negotiate measures and rules	Compliance mechanism	Political feasibility	Example
Normative club	Yes	No	No	Easy because non-binding	*COP26 Coal and Fossil Fuel Divestment Coalitions*
Bargaining club	Yes	Yes	No	Moderate	*Global Methane Pledge*
Transformational club	Yes	Yes	Yes	Difficult	***Never achieved***

7 Nordhaus, W. (2015). Climate Clubs: Overcoming Free-Riding in International Climate Policy. American Economic Review, 105 (4). 1339-70.

8 As theorized in: Falkner, R., Nasiritousi, N., Reischl, G. (2021). Climate clubs: politically feasible and desirable?. *Climate Policy*. DOI: 10.1080/14693062.2021.1967717.

Transformational climate clubs have gained renewed attention at the climate arena's forefront as a potential political strategy to accelerate ambition. The idea is widely supported by think tanks[9], academia, and international organizations like the OECD[10], or the IMF[11]. It aims to foster faster **climate policy integrations** in matters beyond only carbon pricing such as trade and industrial policy.

In theory, achieving a transformational climate club is the most ideal outcome. Members of such a club – such as like-minded countries or trade partners – define stringent climate policy targets and conditions for membership, i.e. carbon price levels or standards for carbon contents of goods, and outline sanctions for non-members with laxer ambition. It aims to preserve domestic economies of carbon leakage[12] and free-riding behavior[13]. In this configuration, partner countries would benefit from joining the club and implementing a more ambitious climate policy in order to **preserve trade and participate in the club's diverse decarbonization initiatives**. This strategy entails pushing laggard countries towards greater ambition while accelerating climate policy's stringency in frontrunners. Such a climate club would combine carbon pricing, trade policy, and industrial policy toward decarbonization. If achieved, this format would convey **economic repercussions for non-members, inciting them to join[14]**.

9 Examples: Vangenechten, D., Lehne, J., (2022, Feb). Can a climate club accelerate Industrial Decarbonisation towards more international cooperation in the decarbonization of heavy industry. (Briefing Paper of E3G of February 2022). https://www.e3g.org/publications/can-climate-clubs-accelerate-industrial-decarbonisation/ or Elkerbout, M., Bryhn, J., Righetti, E., Chapman, F. (2022). From carbon pricing to climate clubs: How to support global climate policy coordination towards climate neutrality (RR2022-01 CEPS Research Report) https://www.ceps.eu/ceps-publications/from-carbon-pricing-to-climate-clubs/

10 Fleming, S., Giles, C. (2021, September 13). "OECD seeks global plan for carbon prices to avoid trade wars". Financial Times. https://www.ft.com/content/334cf17a-e1f1-4837-807a-c4965fe497f3

11 Parry, I., Black, S., Roaf, J. (2021, June). Proposal for an International Carbon Price Floor Among Large Emitters. IMF. https://www.imf.org/en/Publications/staff-climate-notes/Issues/2021/06/15/Proposal-for-an-International-Carbon-Price-Floor-Among-Large-Emitters-460468

12 The EU Commission defines carbon leakage as the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints.

13 Paroussos, L., Mandel, A., Fragkiadakis, K., Fragkos, P., Hinkel, J., Vrontisi, Z. (2019). Climate clubs and the macro-economic benefits of international cooperation on climate policy. *Nature Climate Change*, 9(7). 542–546; Keohane, R. O., Victor, D. G. (2016). Cooperation and discord in global climate policy. Nature Climate Change, 6(6), 570–575.

14 Schonhardt, S. (2022, January 10). Climate clubs: Secret handshakes, CO_2 prices and exclusivity. *EE ClimateWire*. https://www.eenews.net/articles/climate-clubs-secret-handshakes-co2-prices-and-exclusivity/

2. What does the G7 climate club aim to achieve?

According to the scientific literature[15], a climate club could entail some **well-defined policy objectives** that are not exclusively achievable within the Paris Agreement framework:

1. **Align and/or harmonize carbon pricing and non-pricing methods:** address carbon leakage and incentivize mitigation by improving comparability across heterogeneous policies.
2. Facilitate cooperation on establishing **carbon standards and benchmarks to measure the carbon contents of goods**.
3. **Create green markets:** accelerate the deployment of carbon-neutral goods through shared R&D, tariff exemptions, investments, or subsidies.

The goals of a climate club are therefore to **couple mutually agreed incentives and enforcement measures** among as many partners as possible to make the club "inclusive" (the carrot and the stick approaches as advocated by experts for the G7[16]). In the initial German G7 proposal, the only reasonable attempt to discuss climate club so far, a transformational climate club thus resembles merging both an industrial protection policy and a transnational climate policy planning program[17]:

- **Limiting carbon leakage by decoupling** the increased climate policy **stringency** (rising carbon prices) from the risk of **losing economic competitiveness** on international markets.
- **Sharing the cost of decarbonization by creating synergies** between partner countries, particularly in industrial policy.
- **Promoting good-practice sharing**.
- **Facilitating** the comparability of policy measures.

From scientific theory to G7 debates[18], a transformational climate club thus embodies three types of policies that should be discussed, harmonized, and agreed upon by partners with heterogeneous interests:

15 E.g., Elkerbout et al. (2022); Tagliapietra & Wolff (2021); Vangenechten & van den Bergh (2021); Pihl, K. (2020).

16 Michaelowa, A., Censowsky, P., Peterson, S., Stua, M., Brandi, C., Nolden, C., Banning, T., Fung, M., Venzke, I. (2022, March). Towards an Inclusive climate alliance with a balance of carrots and sticks. (Policy brief of the T7 Task Force Climate and Environment). https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjL-48v7wrn5AhVNSxoKHRasBloQFnoECAoQAQ&url=https%3A%2F%2Fora.ox.ac.uk%2Fobjects%2Fuuid%3A20e37dc7-9e70-4a6e-89e2-110e19412d3a%2Ffiles%2Fs3n204027s&usg=AOvVaw1QNMWojnNGTumunzYSj5YL.

17 BMF, AA, BMWi, BMU, BMZ (2021, August). *Steps towards an alliance for climate, competitiveness and industry – building blocks of a cooperative and open climate club.* German Ministry of Finance https://www.bundesfinanzministerium.de/Content/EN/Downloads/Climate-Action/key-issues-paper-international-climate-club.pdf?__blob=publicationFile&v=4.

18 G7. (2022, May 27). G7 *Climate, Energy and Environment Ministers' Communiqué*. https://www.bundesregierung.de/resource/blob/974430/2044350/84e380088170c69e6b6ad45dbd133ef8/2022-05-27-1-climate-ministers-communique-data.pdf.

- **Carbon pricing:** each partner would implement some sort of similar price or comparable non-pricing measures on carbon emissions.
- **Trade policy and carbon border adjustment:** each partner would apply tariffs on trade in carbon-intensive goods under a common Carbon Border Adjustment Mechanism and reduce trade barriers for carbon-neutral goods.
- **Industrial policy:** partners would strengthen their cooperation by establishing common standards for decarbonization and the carbon content of goods.

Hence, **a climate club inevitably aims to send a political signal**. Accounting for the lack of an enforcement mechanism from the Paris Agreement, it intends to **create a block of countries, moving faster, and pushing others in the same direction**. This signal would be induced by common CBAM (the stick), but also by deeper industrial cooperation that would favor club members and encourage non-members to join (the carrot).

3. What strategy for the G7 climate club?

The **club's political objective reveals strategic choices** and raises crucial questions about its purpose. In the first phase, is the club's main objective to attract as many countries as possible, , which implies more flexible rules and conditions for membership? Or, on the contrary, is it to create a smaller, but more ambitious block to exert political leverage, with the risk of increasing political confrontation?

After the first draft of a "G7-level climate club", an "open and cooperative climate forum", focused on **"openness" and "inclusiveness" using an alliance-like format seems to prevail in the G7 discussions[19]**. It opens its doors to all potential members willing to commit to accelerating their climate ambitions, including developing countries (e.g., the G20), calling for cooperation with international organizations such as the IMF, the World Bank, the WTO, the IEA, and the OECD. It also implies a club willing to be expanded over time to involve as many countries as possible.

In this context, seeking to implement a climate club not only for carbon pricing but also for trade and industrial policy could help overcome traditional political obstacles. Working with a smaller group of partners first, to move faster, and then expand to willing applicants could perhaps facilitate implementation. But this will

19 G7. (2022, June 28). *G7 statement on climate club*. https://www.g7germany.de/resource/blob/974430/2057926/2a7cd9f10213a481924492942dd660a1/2022-06-28-g7-climate-club-data.pdf?download=1

not make it any less necessary that the stars are aligning in favor to find political agreement on critical issues…

4. A challenging policy instrument to design

As the literature shows, **climate clubs come with a range of risks concerning the club's impacts[20]:**

- A climate club could potentially increase **equity concerns for developing countries** that are left out of the club and behind unfair tariff barriers.
- A climate club, if not well designed, could **risk locking new developments inside the club** instead of helping to spread innovation.
- Finally, beyond the theory, such clubs are sometimes considered **unable to overcome distributional conflicts** inherent in collective mitigation action, making them impossible to implement.

A well-designed climate club must also foster cooperation within a context of **significant heterogeneities in ambition and policy instruments, which again carries risks:**

- It must find ways to overcome the current geopolitical impasse against a more ambitious cooperative climate policy while agreeing on a design that prevents the club from becoming a group of protectionist rich countries.
- Even if motivated by a desire to accelerate climate ambition, a climate club, **if misperceived**, could well have the opposite effect by **frustrating nonmembers and pushing them into a noncooperative stance**, ultimately limiting overall ambition.
- Climate clubs face a political challenge encountered by most climate policy tools: the higher the ambitions of the club, the more sophistication is needed, the more politically complex the implementation, and the more likely it is that the club will not be enforceable.

There are also **three main political challenges for the formation of a climate club:** political will, agreement-making process, and governance structure. Heterogeneities in climate policy are rooted in the bottom-up approach of the Paris Agreement. This facilitates multilateral agreements but complicates rising ambitions in the absence of compliance mechanisms. Thus, the ultimate goal of a climate club may well be the harmonization of heterogeneous climate policies, or at least to

20 E.g., Falkner et a. (2021); Elkerbout et al. (2022).

make them compatible and politically acceptable for deeper cooperation. To achieve such a goal, binding policy measures, unachievable at the multilateral level, would be necessary.

The first political obstacle is the need for **strong political will in each partner's jurisdiction, only achievable with a national political consensus**. The prospect of being excluded from the club should encourage countries to join it. However, if the club does not involve key trading partners, this argument may not support the political reality. In addition, geopolitical issues also influence the ability of partners to join forces. Now more than ever, reluctant countries may find it more difficult to commit to a club. This dimension is also influenced by public opinion on the urgency of climate change. The heterogeneity of climate awareness among potential partners will inevitably impact the willingness of governments to commit to an ambitious club.

The second political obstacle is the **lengthy diplomatic agreement-making process involved in negotiating the climate club**. Reaching a balanced agreement and proving the fairness of stringent measures like CBAM require time. The latter may be facilitated by the increased participation of potential trading partners and the effect on third parties.

The third challenge is the **governance-building process required for the club to be effective**. This would necessarily involve setting up some sort of institution or permanent dialogue between members that would have a role in trust building and compliance monitoring. This governance issue, like any other international climate governance issue, is the most difficult dimension to implement politically, as it involves shared governance and serious sovereignty questions.

This brings us back to the strategic question evoked earlier: should the club start with fewer countries and then expand to include other major players (wishing to avoid the risk of being excluded)? Or should major players be involved from the start (e.g., the G20, with China) with the risk of turning into a new multilateral system with fewer players but as many challenges? It is **impossible to answer these questions without assessing the crucial differences of opinion on forming a climate club among potential partners such as the EU and Northeast Asian countries**.

5. Key questions for Northeast Asia in a climate club

In practice, the rising carbon price in the EU ETS[21], the implementation of the European Green Deal[22] in a time of an energy crisis, and the implementation of a Carbon Border Adjustment Mechanism (CBAM), demand a **debate on the possibility of implementing a climate club between the EU and relevant high-emitting trade partners, like the US, and China[23]**. The People's Republic of China, Japan, and the Republic of Korea are industrial powerhouses whose trade interests would be partially compromised by the implementation of a stringent climate club in North America and the EU, at the G7 level, or simply by Carbon Border Adjustment Mechanisms (CBAM). Despite widely divergent political interests, they are essential partners for an effective transformational climate club.

It is therefore necessary to understand the grounds on which Europe and Northeast Asian partners can consider an ambitious and transformational climate club. This can be done:
First, by **assessing the difference in perceptions of transformational climate clubs in Northeast Asia and Europe**.
Second, by **defining a politically-feasible design framework for a climate club** encompassing issues of carbon pricing, carbon border adjustment, industrial policy, and governance for each country studied.
Finally, by **addressing the best strategy for a climate club to improve global climate policy**. Indeed, it is essential to consider what relationship could be built with big emitters like China, and how each partner would respond if excluded from the club (e.g., the G7 without China, or the US and the EU alone).

21 $90tCO$_2$e on December 31th, 2021.
22 European Commission. (2019). Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions (The European Green Deal). *COM*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN.
23 See: Tagliapietra, S. & Goldthau, A. (2022, January 11). How an open climate club can generate carbon dividends for the poor. *Bruegel*. https://www.bruegel.org/comment/how-open-climate-club-can-generate-carbon-dividends-poor or.

II

HOW TO INCLUDE CARBON PRICING IN A CLIMATE CLUB?

This section analyzes the role that carbon pricing can play in a climate club. It is based on a comparative policy approach and the analysis of stakeholders' views in Europe and Northeast Asia on the future of carbon pricing in their jurisdictions. The role of carbon pricing in a climate club is not self-evident and should be seen as a medium- to long-term cooperation goal rather than a condition for club membership.

1. Very different carbon pricing policies

Carbon pricing policies are critical to achieving decarbonization and would ideally take a central place in any transformational climate club. However, according to the World Bank, only 23% of global GHG emissions are currently covered by a carbon pricing instrument[24]. Rising carbon prices in certain jurisdictions, such as the EU, and resulting carbon leakage risk, is the reason why the climate club is currently discussed among nations.

The adoption in Glasgow (COP26) of a rulebook[25] for Article 6 of the Paris Agreement supports further international cooperation using carbon markets or non-market approaches through International Transfer of Mitigation Outcomes (ITMO)[26]. The potential cost savings[27] induced by ITMO are appealing for many countries with

24 For a report on heterogeneities of carbon price worldwide see: *World Bank*. (2022). State and Trends of Carbon Pricing. World Bank.https://openknowledge.worldbank.org/handle/10986/37455.
25 UNFCCC (2021). *Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement*. https://unfccc.int/sites/default/files/resource/cma3_auv_12a_PA_6.2.pdf.
26 A country A (often a developed country) with high emission reduction costs would achieve an emission reduction elsewhere and count that emission reduction as its own by paying GHG emission reduction credits to country B (often a developing country) with lower GHG emission reduction costs.
27 According to Edmonds et al. (2021) model, it could reduce the cost of achieving NDC goals in 2030 to all countries by $300bnYr-1 See; Edmonds, J., Yu, S., Mcjeon, H., Forrister, D., Aldy, J., Hultman, N., Cui, R., Waldhoff, S. (2021). How much could Article 6 enhance nationally determined contribution ambition toward Paris Agreement goals through economic efficiency?. *Climate Change Economics*, 12(2), https://www.worldscientific.com/doi/full/10.1142/S201000782150007X

increasingly high Marginal Abatement Cost of Carbon[28]. ITMO are also attractive for developing countries to receive extra climate finance. In this regard, a climate club could facilitate a multilateral agreement under Article 6.2, like ETS linkage[29], or other forms of cooperation under Paris Agreement Article 6[30].

However, existing **heterogeneities in the design of carbon pricing instruments make international cooperation difficult**. The EU, Japan, China, and South Korea are helpfully illustrative of carbon pricing instrument variation around the world. The **EU** and **South Korea** established functional Emissions Trading Schemes (ETS – using cap and trade) with differing carbon prices and environmental outcomes. **China** implemented pilot ETSs since 2013[31], and also launched a national ETS in 2021 that targets the carbon intensity of the power sector (no absolute emissions reduction yet). **Japan**, on the other hand, has a small carbon tax and two regional ETSs in place (Tokyo and Saitama prefectures). Japan is also in the process of establishing a carbon-credit voluntary instrument called the GX League system scheduled to launch in April 2023 at the start of the next fiscal year and is discussing the potential implementation of a national ETS afterward. These systems vary greatly in coverage, environmental ambition, and scope. Against this background, the main task of a climate club could be to foster increased understanding and much-needed harmonization of carbon pricing policies.

28 This represents the cost of reducing one unit of GHG emissions in a jurisdiction. This cost differs depending on the development, carbon emissions already abated, resources available (e.g., renewable energy potential), and technologies developed.

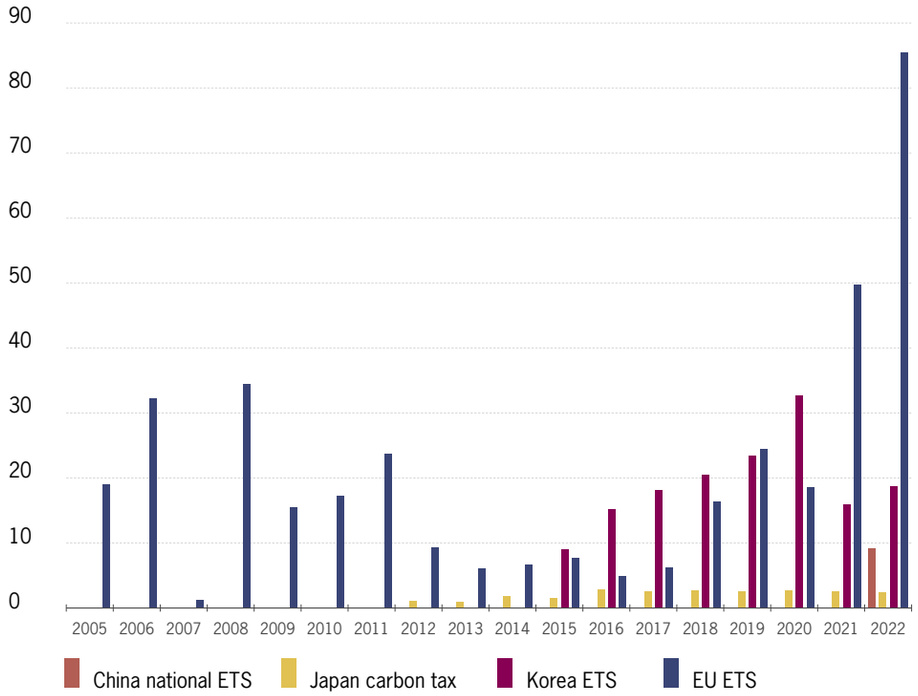
29 For ETS linkage literature see: Bodansky, D., Hoedl, S., Metcalf, G., Stavins, R.N. (2016). Facilitating linkage of climate policies through the Paris outcome. *Climate Policy*, 16(8), 956-972.

30 For the discussion on rules for Article 6: Mehling, M. (2021, October). Advancing international cooperation under the Paris Agreement: Issues and Options for Article 6 (Harvard Project on Climate Agreements discussion paper ES 21-10). https://www.belfercenter.org/publication/advancing-international-cooperation-under-paris-agreement-issues-and-options-article-6

31 For an analysis of Chinese Pilot ETS see: Deng, Z., Li, D., Pang, T., Duan, M. (2018). Effectiveness of pilot carbon emissions trading systems in China. *Climate Policy*. https://www.tandfonline.com/doi/abs/10.1080/14693062.2018.1438245.

Figure 1: Average carbon prices in the EU, China, South Korea ETSs, and Japan carbon tax[32]

($/tCO$_2$e)



2. A range of roadmaps for implementing different types of carbon pricing

The roadmap for the development of **carbon pricing measures in the EU, China, Japan, and South Korea, takes four different directions**. Two members of the G7, the EU and Japan, are figurative of this variation inside the G7 itself.

In the EU, there is an increasing stringency of the internal climate policy, with the **Fit for 55 package** reducing its ETS cap on industrial emissions by 4%, year on year[33]. The EU ETS is gradually phasing out free allowances and the price of carbon has already exceeded $100/tCO$_2$e in 2022.

32 World Bank. (2022). Carbon Pricing Dashboard. [Dataset]. https://carbonpricingdashboard.worldbank.org/map_data.

33 E uropean Council (2022, June). *Fit for 55*. EUCON. https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/.

On the other hand, **Japan**, still reluctant to have mandatory carbon pricing, will first adopt a voluntary approach through the new **GX League** credit mechanism[34]. This mechanism is not regulated by law, instead, companies can set their own targets, which they have to fulfill. After this first voluntary approach, the Japanese government stated that it will consider a proper government-ruled ETS cap-and-trade system. However, this is far from the first time Japan has attempted to implement an ETS, without much success so far. As of today, direct carbon prices in Japan do not exceed $5/tCO$_2$e and the government appears to favor non-pricing measures.

In non-G7 Northeast Asian countries, policies implemented and roadmaps for carbon pricing instruments are actually **more advanced than in Japan and other G7 countries like the United States**. Policymakers from South Korea, and especially China, are quick to **point out the significance of this fact for the climate club discussion**.

In **South Korea**, the newly-appointed government is working on improving a national ETS in place since 2015, in part by increasing the proportion of auctioned allocations, but only up to 10%[35]. **Korean ETS prices are still far from those in the EU**, recently falling to less than $15/tCO$_2$e[36]. Chinese stakeholders consider China's efforts to develop carbon markets significant although they acknowledge its limitations: the relatively low price – less than $9/tCO$_2$e for the CN ETS in 2022 – the fact that the system **does not have an absolute cap**, its limited impact on emissions, its exclusive focus on the power sector, and the repeatedly-delayed sectoral expansion. Still, Chinese stakeholders emphasize the **government's commitment to peak emissions in 2030 and, therefore, to move toward a true cap-and-trade system**.

The following table layouts the heterogeneities in the design of the main carbon pricing instruments implemented (or soon to be implemented) between the EU, Japan, South Korea, and China.

34 METI (2022, February). *GX League announcements*. METI. https://www.meti.go.jp/press/2021/02/20220201001/20220201001.html *(In Japanese)*
35 MOEK (2022, March). Carbon neutrality Framework Act. Ministry of the Environment of the Republic of Korea. https://www.law.go.kr/법령/기후위기대응을위한탄소중립ㆍ녹색성장기본법/(18469,20210924) *(In Korean)*.
36 ICAP (2022, September). ICAP ETS Prices explorer. [Dataset]. https://icapcarbonaction.com/en/ets-prices.

Table 2. Comparative design sustainability of EU, Korean, Chinese National ETS, and the future Japanese GX League

Policy design	Sustainability recommendation[37]	EU ETS[38]	SK ETS[39]	CN ETS[40]	GX League[41]
Cap	Absolute volume Cap	●	●	●	●
	Gradual cap reduction	●	●	●	●
Coverage	Mandatory participation	●	●	●	●
	All GHG	●	●	●	●
	All polluters	●	●	●	●
Allocation	100% auctioned initial allocation	●	●	●	●
	Market equally accessible to all parties	●	●	●	●
	Established secondary market	●	●	●	●
Revenue use	100% revenue recycling	●	●	●	TBD[42]
	Social climate dividend	●	●	●	TBD
Flexibility mechanism	Banking (unlimited)	●	●	●	TBD
	Borrowing prohibited	●	●	●	TBD
	Gold standard sustainable offset projects only	●	●	●	●
Price management	Price floor	●	●	●	●
	Price ceiling	●	●	●	●
Compliance	Control period max 3 years	●	●	●	●
	MRV reporting	●	●	●	TBD
	Discouraging fines for non-compliance (>P)	●	●	●	●
	Full compensation of excess emissions	●	●	●	●
Linking	Linkage-ready scheme	●	●	●	●

● Fulfill ● Does not fulfill ● Unsustainable

37 Comparative sustainability Model after Rudolph & Aydos (2021).
38 After Fit-for-55 reform: European Council (2022, June).
39 Various texts, including: MOEK (2022, March).
40 Under various texts including: NRDC (2021). The national measures for the administration and management of carbon trading. https://www.mee.gov.cn/xxgk2018/xxgk/xxgk02/202101/t20210105_816131.html *(in Chinese)*.
41 GX League is not an ETS but a voluntary credit carbon market. It is still included in this table for comparison purposes. Information extracted from text and interviews: METI (2022, February) and METI (2022, September). *GX League*. METI. https://www.meti.go.jp/press/2021/02/20220201001/20220201001.html *(In Japanese)*.
42 TBD= design feature still to be determined by the Ministry (METI).

3. Perspective variation on carbon pricing and carbon price floor in a climate club

EU policymakers recognize that a number of concerns about carbon pricing also influence the discussion on climate clubs. To begin, ETSs generate revenues, and the distribution to consumers and/or corporations is a sensitive issue. ETS, domestically, can lead to (economic) winners and losers, and the distributions of costs and benefits can be unequal: this, in turn, has serious **political implications depending on differing domestic realities**. The need to push carbon prices upwards over time as part of a more ambitious climate policy also inherently threatens to reinforce inflationary pressures. In the midst of an energy and cost-of-living crisis, it naturally becomes increasingly difficult to expand carbon pricing stringency.

Furthermore, the **measurement (MRV) and thus regulation of emission levels is itself a real technical and logistical challenge**, with its own costs and necessary international cooperation.

Finally, emissions trading systems must deal with the **threat of carbon leakage**[43]. Fundamentally, no amount of carbon leakage is fair nor acceptable, and as such, its prevention must be a primary policy objective using instruments like **CBAM** and **international cooperation** such as a climate club.

Against this backdrop, this survey shows that, in Europe, the **private sector** is not inherently opposed to carbon pricing stringency. Instead, it seeks reassurance from policymakers that a **clear and predictable path to short-term targets** exists. In a similar vein, Japanese stakeholders now emphasize **an increasing acceptance of carbon pricing by Japanese companies**, which could facilitate its expansion in the near future. In contrast, Korean companies express **anxieties over the current trajectory of emissions caps within Korean ETS**, even though most recognize that carbon neutrality is not an option but an imperative. All in all, there is an increasingly shared view of the usefulness of carbon pricing as a climate policy tool. However, this is reflected very differently in policy implementation. Therefore, would equalizing carbon prices within the framework of a climate club be a politically viable solution?

The EU supports an IMF proposal made in June 2021 that seeks to rapidly scale up global carbon pricing by creating an **international carbon floor price**, and

43 The EU Commission defines carbon leakage as the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints.

tripling the overall coverage of carbon emissions tools globally[44]. This, of course, could facilitate climate club formation. But it does not account for the **great call for policy differentiation among Northeast Asian countries**, including developed ones like Japan and South Korea, displayed by this research.

Korean policymakers also call for a global carbon price, but only in the **long run**, pointing to a **lack of reliable data to set an appropriate carbon price** across Korea and other major emitters, such as China, which has been struggling for years with data reliability[45]. Chinese experts, nevertheless, use China's commitment to turn to an absolute ETS as a **strong argument for the country to join a climate club**, especially when they compare China's achievements to the track record of some G7 members. However, Chinese stakeholders underline the need for a China-appropriate carbon price rather than an international price floor in the short-term. Japanese officials, in turn, highlight the importance of **taking into consideration non-pricing carbon intensity measures as equivalent to carbon pricing in the climate club design**.

These various perspectives complicate the inclusion of carbon pricing in a club. Answering this reality, this survey indicates that the EU commission still considers that the **correct price of carbon should be determined by the market**.

4. Justified price differentiation, or aiming for ETS linkage?

The establishment of a club-wide carbon price might thus be at odds with the **need for differentiation, at a sectoral, national, or sub-national (regional) level**. Policymakers from both South Korea and Japan strongly share these concerns, candidly **expressing hesitancy over whether a common price would be wholly appropriate at any scale**. Echoed calls for differentiation without discrimination raise another key question: is a linkage between heterogeneous emissions trading schemes, developed at different times with different characteristics, a realistic goal for a climate club?

This research survey highlights that most stakeholders in Europe and Northeast Asia share the belief that linking national ETS schemes in Europe and Northeast Asia

44 Parry et al. (2021, June).
45 For Chinese ETS struggles with data reliability: Xu, M., Stanway, D. (2022, March 15). China slams firms for falsifying carbon data. *Reuters*. https://www.reuters.com/world/china/china-slams-firms-falsifying-carbon-data-2022-03-14/.

could potentially be a tremendously valuable initiative. However, a pragmatic timeline agenda for states seeking to implement stringent carbon pricing is required: the first step remains to establish comprehensive domestic carbon trading markets, at which point **ETS linkage** can be pursued in earnest. This study suggests that ETS linkage should be seen as a tool for **nudging climate policy in the right direction, rather than as a standalone objective**.

In this regard, Japanese, Korean, and Chinese stakeholders mentioned the ongoing discussions to link ETS between the three countries[46]. Chinese representatives even strongly support ETS linkage as a policy objective but emphasize that **most countries would not be ready to link ETS in the near future for a climate club**. China highlights here Japan's lack of a national system in place as a hindrance. On the other hand, EU and Japanese policymakers emphasize that ETS linkage programs tend to be long processes[47], and as such **cannot be the sole focus of a climate club tasked with raising ambitions quickly**.

5. A climate club as a pathway to carbon pricing harmonization

In view of this reality, **working towards a common understanding of carbon pricing** (ETS/cap-and-trade vs credits mechanism) must be, in broad terms, the **initial priority of a climate club**. There is a wide consensus in Europe and Northeast Asia about the importance of using a climate club to foster carbon pricing harmonization policy and reaching joint regulation as a prerequisite for future linkage. One shared notion is the importance of using the Paris Agreement Article 6 Internationally Transferred Mitigation Outcomes (ITMO) to scale up international cooperation, with **Article 6.2 being a primary vehicle for greater cooperation in the case of a climate club**. However, if Article 6.2 provides a format for cooperation, arrangements have to be made between partners – and here lies the true complexity.

46 In 2018: MOEJ (2018, September 20). Holding of the Trilateral Carbon Pricing Mechanism Forum. *Ministry of the Environment of Japan*. https://www.env.go.jp/press/105982.html *(In Japanese)*. In 2017: CarbonPulse (2017, December 15). China, Japan, Korea carbon market links resurface as talks set for next week. CarbonPulse. http://carbon-pulse.com/44890/ For more see: Swatrz, J. (2018). *Building the foundation for regional Carbon Market Linkage in Northeast Asia. In Carbon Market Cooperation in Northeast Asia.* Asia Society Policy Institute. NewYork, USA.

47 Dellatte, J., Rudolph, S. (2022). Understanding Barriers to Linking heterogeneous Emissions Trading Schemes: Evidence from and Lessons for Northeast Asia. *Environmental Politics*. https://www.tandfonline.com/doi/abs/10.1080/09644016.2022.2061776?journalCode=fenp20

Carbon pricing harmonization necessarily requires **methodological standardization**, though procedural concerns over the setting of carbon prices are frequently raised. Japanese stakeholders make a compelling case for the **creation of a clear, reliable, and standardized dataset from which carbon prices and non-pricing measures could be calculated, imposed, and compared**. Such new systems, which may be initiated by the climate club, should be set up accordingly having future linkage in mind.

For China, the key issue to be addressed by a climate club would be to **establish rules for comparing carbon pricing instruments**. This includes the need for benchmarking of NDC packages. The **critical period for the expansion of China's domestic emissions trading system could also be a crucial time for China's inclusion in a climate club:** the expansion of China's ETS to emitters in the cement and steel industries over the next five years. That said, while greater EU-China cooperation on climate issues is often seen by Chinese stakeholders as a real and beneficial possibility in the near future, they are highly skeptical of most other G7 countries, making the current initiative perilous.

6. A crucial policy dilemma: domestic carbon pricing system as a membership condition?

The **political challenge faced by the notion of a common price on carbon is significant**. Establishing a common carbon pricing system within the framework of a potential climate club will largely depend on trust among potential members in the accuracy of its parameters. Even at the G7 level, partners like the US are far from being able to establish their own domestic carbon pricing scheme. Consequently, **for political reasons, carbon pricing might not be a suitable membership condition for the club in the near future. In turn, ambition levels between countries, like 2050 carbon neutrality with a binding roadmap, could be the main basis for membership**. This opinion is shared among European, Japanese, and South Korean stakeholders; yet all stakeholders still recognize that heterogeneities in carbon pricing development, and the resulting carbon leakage risk, have to be accounted for.

This, in fact, reveals a **serious political dilemma for the role of carbon pricing in a climate club**. Chinese stakeholders generally consider having a domestic **carbon pricing mechanism as a membership condition crucial for a truly transformational climate club**. They believe that the club should not only exist

to trump political barriers. A club's design that excludes carbon pricing, from the Chinese perspective, **would be tailored to the needs of the United States and not to a shared goal of climate ambition**. Going further, some representatives tend to be suspicious of a hybrid solution mixing recognition of pricing and non-pricing measures, considering countries unable to implement carbon pricing as not doing enough. These conflictive arguments highlight a misperception of the G7 climate club initiative by Chinese stakeholders: why address countries reluctant to implement domestic carbon pricing mechanisms in the first place?

In sum, *Table 3* displays that, despite its immense importance for mitigation and raising necessary climate finance, including carbon pricing in a club will not be an easy task. The main point of convergence suggests that **harmonizing positions on carbon pricing should be the initial goal of a club**.

Table 3. Perspective comparison on including carbon pricing in a climate club

	EU	Japan	South Korea	China
Carbon pricing roadmaps	Fit for 55: Increasing stringency (-4% YoY) + CBAM	Small carbon tax + voluntary credit system (from 2023) + consider ETS in later stage	National ETS with up to 10% free allocation	COP26 Coal and Fossil Fuel Divestment Coalitions
Private sector perspective	A request for a clear roadmap	A shift in favor of carbon pricing	A growth in anxiety towards ETS stringency	Not known
Carbon price floor	Support	Does not support	Skeptical	Does not support
Differentiation	Carbon price should be determined by the market	Call for differentiation and recognition of non-pricing measures	Call for differentiation (national, subnational etc.) + lack of reliable data	Carbon price should be determined by the market in the future
ETS Linkage in a club	Considered too complex for now	Not a policy objective for climate club	Support in the future	Support once turning absolute target
Club as a harmonization instrument for carbon pricing	**Support**	**Support** to establish reliable data MRV and enable comparing pricing and non-pricing measure	**Support**	**Support**
Use of Article 6	**Support**	**Support**	**Support**	**Support**
Carbon pricing as a membership condition	Ideally, but might not be adequate for now	No	Not adequate	Should be a membership condition

III

CARBON BORDER ADJUSTMENT AND CLIMATE CLUB: THE DIFFICULT DESIGN OF A STICK…

This section discusses the perception of carbon border adjustment[48] as a policy instrument in Europe and Northeast Asia. It examines its potential as a compliance mechanism in a climate club. Related to the results of the survey, it proposes a politically feasible framework to include CBAM as a compliance mechanism in a Climate Forum.

1. A climate club to foster an understanding on border carbon adjustment?

The ambitious climate mitigation targets codified by the Paris Agreement can only be met if the **existential threat of carbon leakage** is tackled head-on. Hence, Carbon Border Adjustment Mechanisms (CBAM) become a necessary measure, especially for frontrunners. **CBAM should represent the "stick" dimension of a transformational climate club** and therefore allow for stringency within the club[49]. Ideally, a club should implement its own CBAM to protect members from carbon leakage and encourage non-members to join. At a minimum, this means that partners must recognize the threat of carbon leakage and agree on the design of the CBAM.

The EU is implementing its own CBAM to account for emissions embodied in traded goods[50]. What is noteworthy, though, is that the new policy is presented as **a pure**

48 This paper refers to "CBAM" or "carbon border adjustment" for the general policy instrument, and "EU-CBAM" for the specific one implemented by the EU.

49 For a discussion on the connexions between CBAM and Climate club in the literature see: Overland, I., Huda, M, S. (2022). Climate clubs and Carbon border adjustment: a review. *Environmental Research Letters*, 17. https://doi.org/10.1088/1748-9326/ac8da8.

50 EUCO. (2022, March 15). *Draft regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism.* Council of the European Union. https://data.consilium.europa.eu/doc/document/ST-7226-2022-INIT/en/pdf.

environmental measure and not a trade policy[51]. The proposed implementation by the EU of a CBAM would nevertheless transform the dynamics of global trade, especially in targeted sectors such as steel, cement, aluminum, and fertilizers. Denounced by its harshest critics as a form of unilateral protectionism and **viewed with some level of skepticism in Northeast Asia**, carbon border adjustment remains a politically complex and highly sensitive issue. Thus, a climate club among major trading partners **must help reduce the huge differences in approach that currently exist regarding the question of carbon border adjustment**.

2. Different perceptions of carbon leakage

One cannot discuss a potential carbon border adjustment mechanism in a climate club debate without acknowledging that **there is no common understanding of carbon leakage** between the EU and the three Northeast Asian countries studied by this research. Japan has understood "too" well the potential threat of a high carbon price on critical parts of its export-oriented economy. The result is a very **low carbon price** and an approach that favors voluntary mechanisms over mandatory carbon pricing. This has the effect of **staving off the perceived threat of carbon leakage in the country**. South Korean stakeholders **anxiously understand the future threat of carbon leakage**, which until recently had postponed greater stringency in its ETS. China, on the other hand, sees itself as the world's exporter and **sees virtually no threat from carbon leakage**. Furthermore, Chinese stakeholders perceive the risk of carbon leakage expressed by developed economies as a kind of misconception against developing countries, and China in particular.

Despite these differing perceptions of carbon leakage, there is an **inherent link between the implementation of EU-CBAM and the G7 climate club discussion**. Carbon-pricing pioneers such as the EU cannot get more stringent without threatening some crucial emissions-intensive trade-exposed sectors, for example, by removing free allowances from the EU ETS. However, the EU is not the only jurisdiction potentially threatened by carbon leakage. Any jurisdiction implementing stringent measures to reach its carbon neutrality objective will inevitably face the same question: how to avoid carbon leakage? Examining **how to include CBAM in a climate club format will be key** given the different perspectives on CBAM between Europe and Northeast Asia.

51 Titievskaia, J., Morgado Simões, H., Dobreva, A. (2022, July). EU carbon border adjustment mechanism Implications for climate and competitiveness. (Eu legislation process brief of the European Parliamentary Research Service). https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698889/EPRS_BRI(2022)698889_EN.pdf.

3. Northeast Asia sees carbon border adjustment's fairness as problematic

In addition to diverging visions on carbon leakage, there are also **apprehensions about CBAM as a policy instrument:** due to the current EU-CBAM implementation process, concerns about the **fairness of CBAM are often raised in Northeast Asia**, also citing the discriminatory potential of the mechanism.

3.1. International trade rules

The feasibility of CBAM, whether as part of a climate club or not, is contingent on its compliance with international trade rules. The WTO itself recognizes that the idea behind CBAM is **not inherently contrary to international trade rules**[52]. However, there is a perceived prohibition of WTO rules of "means of arbitrary or unjustifiable discrimination" or a "disguised restriction on international trade" that feeds the discussion over the compatibility of CBAM and international trade laws among Northeast Asian stakeholders.

Northeast Asian stakeholders **expressed concern over the risk of exporters being treated differently depending on their country of origin**. On a matter of principle, there is a wide agreement among experts in Northeast Asia that **CBAM within a climate club should not discriminate against imports from specific countries**. This represents a difficult hurdle to overcome, since sorting more carbon-intensive goods from less carbon-intensive ones between members and non-members are one of the purposes of CBAM in a club.

In China, the concept of border carbon adjustment as an eligible instrument for a future climate club cannot be separated from the spectrum of the current debate on EU-CBAM. Most Chinese stakeholders surveyed understand the rationale for the EU to implement EU-CBAM. However, despite varying perceptions about the actual economic impact of the measure[53], they **comprehend this policy as a unilateral trade initiative from the EU whose legitimacy is questionable under WTO rules**. This position is reflected by Chinese officials, including Chinese climate czar Xie Zhenhua, who views CBAM as an unfair trade barrier[54]. In fact, China is **leading**

52 Paugam, J. (2021, Septembre 13). DDG Paugam: WTO rules no barrier to ambitious environmental policies. *WTO News*. https://www.wto.org/english/news_e/news21_e/ddgjp_16sep21_e.htm.
53 IIGF. (2022, July 26). Response to the EU Carbon Border Regulator: Specifics, Implementation Implications and Policy Implications. *IIGF*. https://iigf.cufe.edu.cn/info/1012/5592.htm *(In Chinese)*.
54 Yue, H., Lu, K., Du, X. (2022, June 20). Xie Zenhua talks about tackling climate change. *Caixin*. https://weekly.caixin.com/2022-06-17/101900245.html?p0#page2 *(In Chinese)*.

a coalition of countries against the measure, as evidenced by numerous China-backed forums such as BASIC[55] and the Joint Statement issued at the last BRICS high-level meeting on climate change[56]:

" (...) We oppose any measures to restrict trade and investment and setting up new green trade barriers with the pretext of addressing climate change, such as the imposition of Carbon Border Adjustment Mechanisms, which are incompatible with multilateral rules under the World Trade Organization".

Interestingly, in most cases, the position of Chinese stakeholders and experts surveyed is **not one of outright opposition to carbon border adjustment**, but rather to the EU-CBAM unilateralism. Moreover, China's Ministry of Commerce has not taken an official position against the measure, with only the Ministry of Ecology and Environment making an official comment on CBAM[57]. Beyond the EU's initiative then, **there may be room for another Chinese interpretation of CBAM, in the realm of a climate club**. Nevertheless, this harsh reaction from Chinese authorities, who are trying to unite the opposition of other developing countries against the EU-CBAM, may make it **difficult to change their position on border carbon adjustment in the future**.

3.2. Discrimination vs justified differentiation

Opposition to the perceived unfairness of CBAM in Northeast Asia runs deeper than its incompatibility with international trade law. Even if CBAM does abide by WTO rules, Japanese policymakers display a fundamental difference in perspective by questioning **why an exporting company would have to pay to join the same market as a domestic company from the same sector if it had identical carbon emissions intensity[58]**. Additionally, Japanese policymakers stance that reductions in carbon intensity are the result of past policy efforts, whilst carbon pricing aims to reduce carbon emissions in the future. This raises the key question of **which factors should take precedence in a climate club CBAM: carbon pricing exclusively, carbon intensity, or a mix of both**. Korean policymakers also recognize the importance of this question.

55 BASIC (2021, April 08). Joint Statement issued at the conclusion of the 30th BASIC Ministerial Meeting on Climate Change hosted by India on 8th April 2021. *BASIC*. https://www.dffe.gov.za/mediarelease/basic_ministerialmeeting_climatechange_india.
56 BRICS. (2022, May 15). Joint Statement of the BRICS High Level Meeting on Climate Change. *BRICS*. https://www.mee.gov.cn/ywdt/hjywnews/202205/t20220515_982106.shtml *(In Chinese)*.
57 MEE. (2021, July 26). Ministry of Ecology and Environment press conference report. MEE. https://www.mee.gov.cn/ywdt/zbft/202107/t20210726_851421.shtml *(In Chinese)*.
58 METI. (2022, June 27). METI Priorities Based on the 2022 Report on Compliance by Major Trading Partners with Trade Agreements. *METI*. https://www.meti.go.jp/english/press/2022/pdf/220627_2022report03.pdf.

Most Chinese stakeholders surveyed consider that making Chinese companies pay the EU price for EU-CBAM would represent unfair trade barriers because of the difference in marginal abatement costs of carbon[59]. Practically, CBAM will represent an extra cost on imports that should naturally cause concern for many Chinese experts.

EU-CBAM as conceptualized by the EU implies **justified differentiation** rather than discrimination, as it is applied to imported products uncovered by carbon pricing systems[60]. This reveals a **fundamental difference in the interpretation of trade discrimination**, the EU assures stakeholders that companies cannot, by definition, be discriminated against if they succeed in attaining the EU's carbon emissions reduction targets. It also assuaged some fears over higher costs incurred by CBAM for non-EU trading partners: the EU argues that **EU-CBAM is an open and flexible system, with room for bilateral agreements to ease taxes for imported goods between partners**. Examples of such announcements can already be found, such as Frans Timmermans's (EU Commissioner for Climate Action) and Yoo Myung-hee's (Former Korean Trade Minister) on the impact of the EU-CBAM on countries with carbon pricing like South Korea[61].

Therefore, the legitimacy of a climate club using carbon border adjustment depends on **future political agreement about these divergences of views on which pricing or non-pricing measure to consider**. Moreover, the implementation of CBAM, or how to deal with individual national CBAMs as part of a transformational climate club, needs to be cooperatively agreed upon by trading partners for it to take shape effectively.

3.3. Administrative burden

Apprehension over CBAM-related costs in Northeast Asia extends **beyond the prospect of purely financial losses:** some key policymakers in the three surveyed Northeast Asian countries suggested that carbon border adjustment would **generate excessive administrative and procedural burdens for companies**. In the case of the EU-CBAM, for non-EU exporters, in particular, it might demand extensive monitoring and reporting of data to EU officials, who would in turn have to relay this

59 The price of reducing a unit of GHGs varies between countries depending on factors such as development, technology, resource availability, and GHG emissions already reduced.
60 European Commission (2021, July 14) Explanatory Memorandum of the Proposal for a Regulation of the European Parliament and the Council establishing a carbon border adjustment mechanism. *European Commission*. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021PC0564&rid=9
61 Suk-Yee, J. (2021, July 15). Carbon Border Tax Not Targeting South Korea, EU Says. *BusinessKorea*. http://www.businesskorea.co.kr/news/articleView.html?idxno=71790.

information to the relevant authorities. Going further, Chinese stakeholders consider that the Chinese government would have no choice but to financially assist companies in complying with this new burden. This view places carbon border adjustment as an instrument within a **needlessly complex and overly bureaucratic system**. This is in stark contrast to the depiction by CBAM promoters of a supple and inclusive model which would allow for greater carbon flexibility than alternatives. It could also complicate the perception of interesting proposals to facilitate membership in a climate club, such as the use of Green certificates[62], which **could be perceived as another layer of administrative burdens imposed directly on businesses**.

4. A climate club to foster methodological comparability…

From the Northeast Asian perspective, a number of technical questions over carbon border adjustment have yet to be answered convincingly in order to consider the instrument for themselves or as part of a climate club. Most stakeholders identified several obstacles to **reaching a suitable level of methodological comparability for implementing CBAM:**

First, there is **no real consensus on the selection of products that should be covered by a CBAM:** it is imperative that partners agree on the taxing of essential vs. non-essential goods, and more broadly, on the choice of exempted products.

Second, the **calculation of the carbon content of goods** presents an intense methodological challenge. There are clear **interpretative differences** between the choice of scopes for categorizing and computing the carbon contents of goods (for instance, EU-CBAM only accounts for direct Scope 1 emissions) and the difficult question of the **carbon contents of assembled goods**. One Korean policymaker surveyed describes the currently proposed EU-CBAM as a source of unfair discrimination: since tracing all emissions through the entire supply chain is impossible, it **places all the burden on exporters**. Korean and Japanese policymakers also worry about the fact that **calculations of actual emissions for electricity consumption will be based on default values**.

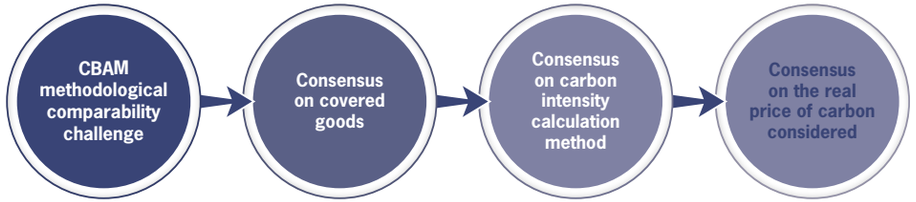
62 Green certificates would allow carbon efficient companies in member countries with low carbon prices to trade their low-carbon goods CBAM-free or CBAM-discounted within the club. For more on Green certificates and Climate clubs see:Oliu-Barton, M., Tagliapietra, S. (2022, August 9). Climate club 'green certificate' would boost membership. *Nature* (Correspondence). https://www.nature.com/articles/d41586-022-02128-6.

Third, **sectoral differences in free allowances in ETSs** unevenly impact the real price of carbon.

Finally, **natural discrepancies in the pricing of goods** across domestic and international markets render the notion of universally appropriate carbon pricing less feasible. This last aspect is particularly important for Chinese stakeholders that would prefer targeting ETS linkage rather than carbon border adjustment as currently proposed in the EU.

In the case of the EU-CBAM, these methodological questions will be addressed in greater detail by later legislation, after the progressive implementation of the instrument. This means that a **common understanding of methodological comparability is still far from being achieved**. It also reveals that the rules-making process from the EU-CBAM risks being labeled as unilateral. **This offers a new opportunity for climate club discussion: enabling a common understanding of these methodological differences**.

Figure 2: Comparability challenges for CBAM in a club



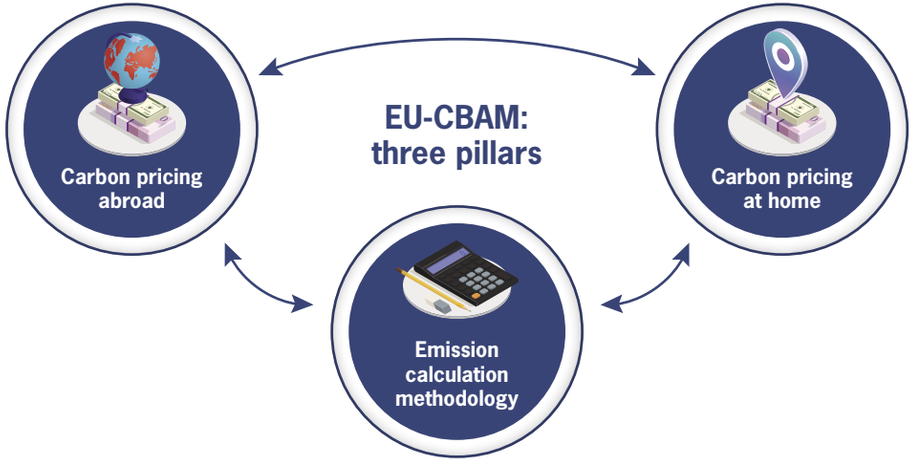
5. …through more cooperation?

There is a shared call in Northeast Asia generally for climate frontrunners, such as the EU, to consult more with their trading partners to find multilateral solutions to carbon leakage. This call could be understood as the potential goal of a climate club to promote cooperation on carbon border adjustment and address carbon leakage. For some Chinese stakeholders, given that **benchmarking is now central** to any international climate policy due to the new MRV obligations adopted at COP26, this opens up a **clear area of interest for China in a climate club:** to help **establish and disseminate MRV standards** that cannot be set at the multilateral level, making emissions data comparable across states.

However, beyond the climate club proposal, stakeholders underline the many already existing forums potentially interesting for enhanced understanding of carbon border adjustment such as the Global Forums held by the OECD's Climate Change Expert Group (CCXG)[63], alongside various platforms at the IMF and WTO (the Committee on Trade and Environment (CTE)[64], and the Trade and Environmental Sustainability Structured Dialogue (TESSD)[65]).

Answering this call for more dialogue, the EU defines international cooperation on the EU-CBAM through **three pillars:** carbon pricing abroad, emission calculation methodology, and carbon pricing at home. This means that **flexibility for "an open CBAM" also applies to international coordination through multilateral or bilateral exchanges**.

Figure 3: Three pillars of the EU-CBAM



One of the **objectives of a climate club** could thus be to achieve **methodological uniformity in carbon content measurement** between members. However, the **challenges of reporting and verification of emissions would remain**.

63 OECD. (2022). *Climate Change Expert Group* [Website]. https://www.oecd.org/env/cc/ccxg/.
64 WTO. (2022). *Committee on Trade and Environment* [Website]. https://www.wto.org/english/tratop_e/envir_e/wrk_committee_e.htm.
65 WTO. (2022). Trade and Environmental Sustainability Structured Dialogue [Website]. https://www.wto.org/english/tratop_e/tessd_e/tessd_e.htm

Any form of carbon border adjustment in a climate club **would run on trust**, and trust is built and preserved through independent and recognized third-party certification and accountability.

6. Carbon border adjustment revenues for climate finance

This research also surveyed the key question of the allocation of revenues from a CBAM in a climate club. A consensual proposal is that **carbon border adjustment revenues could help further the climate mitigation measures of less developed countries (LDC)**. EU policymakers consider that **EU-CBAM** is at its core a response to an urgent climate crisis, not a tool for development, and as such **would contribute to the EU general budget**. In this question, the EU Commission is moving in the policy space allowed by the WTO. This does not preclude the EU from investing significantly in the decarbonization of developing countries, which would presumably indirectly benefit from EU-CBAM revenues[66].

More broadly, there is a wide consensus in this survey that, under a climate club, **carbon border adjustment revenues could fund ambitious collaborative projects sponsored by the club**. In this sense, revenues could act as a strong incentive for club membership. **This could fund both mitigation and adaptation projects, providing much-needed climate finance and attracting developing countries to the club**.

7. A climate club to expand the adoption of domestic carbon border adjustment mechanisms

The EU-CBAM is a crucial instrument for the EU's energy transition strategy. It could also help reduce global carbon emissions by promoting and strengthening climate policy outside the EU through the so-called **"CBAM diplomacy":** Faced with the threat of a climate tariff on the carbon emissions embodied in their exported products, the EU's trading partners would prefer to expand their own carbon pricing scheme rather than let their exporters comply with the EU's CBAM.

66 "EU budget should support least developed countries through amounts equivalent to sums collected through CBAM". See: European Parliament. (2022, May 17). CBAM: MEPs push for higher ambition in new carbon leakage instrument. *European Parliament News*. https://www.europarl.europa.eu/news/en/press-room/20220516IPR29647/cbam-meps-push-for-higher-ambition-in-new-carbon-leakage-instrument.

This logic **could also facilitate discussions for the creation of a climate club** of like-minded trading partners to implement its own CBAM and amplify the incentive power of "CBAM diplomacy."

Northeast Asian perception of CBAM implementation in the EU reveals the **contradictory dynamics of the expansion of carbon border adjustment in the context of a climate club**. In spite of complaining about a lack of communication from the EU side, Korean policymakers express a **keen interest in EU-CBAM development**, hoping for the establishment of a **level-playing field between EU and non-EU companies** whilst recognizing that the EU-CBAM is well an environmental policy. In fact, the Korean government will adapt[67] its own ETS policy to account for this new reality[68].

Japanese policymakers, meanwhile, **stress the necessity of CBAM in the long term and welcome the climate club initiative as a potential shorter-term solution**. Such an initiative may in fact be the only policy option to facilitate the implementation of a stringent carbon price in Japan in the future. This is discernible in METI's Priorities report with trading partners[69]:

"Japan, for its part, will continue to engage in bilateral discussions with the EU, discussions on the above issues among member countries in various WTO committees (...) and ambitious discussions in the G7 and G20 on the climate club, a framework among willing countries to achieve greenhouse gas emission reductions and eliminate competitive disadvantages. Japan will examine and engage with the EU's CBAM proposal from the perspective of its consistency with global rules and its appropriateness as a trade and climate measure".

China tells a different story. Chinese stakeholders express frustration, at the highest state levels, that the EU and other Western nations such as the United States regularly hold talks about CBAM, but rarely involve China. In their view, China should be **a natural partner for CBAM discussions with Europe** given the shared past on carbon pricing development, and the fact that the US is more consulted[70] than

67 CarbonPulse (2022, August 15). South Korea begins process to improve ETS. *CarbonPulse*. https://carbon-pulse.com/169409/?utm_source=CP+Daily&utm_campaign=63dc8e2604-CPdaily15082022&utm_medium=email&utm_term=0_a9d8834f72-63dc8e2604-110242857

68 Hufbauer, G., Kim, J., Schott, J. (2021, Novembre). Can EU Carbon Border Adjustment Measures propel WTO climate talks?. (Policy Brief 21-23 of the Peterson Institute for International Economics). https://www.piie.com/reader/publications/policy-briefs/can-eu-carbon-border-adjustment-measures-propel-wto-climate-talks.

69 (METI, 2022 June 27).

70 Example of recent exchanges between the EU and the US on CBAM: Chahim. M. (2022, March 31). United States lawmakers are at a CBAM tipping point. *Euractiv*. https://www.euractiv.com/section/energy-environment/opinion/united-states-lawmakers-are-at-a-cbam-tipping-point/.

China reveals the **political nature of the EU-CBAM**. In addition, there is also a misunderstanding about the pace of implementation of CBAM in the EU which, they consider, frustrates major trade partners. This has an impact on China's vision of border carbon adjustment and its potential inclusion in a climate club.

From a strategic perspective, however, the current debates around the EU-CBAM open up a range of opportunities for the inclusion of the EU's major trading partners in discussions on a transformational climate club. For instance, China could **potentially find an interest in joining a club if discussions were directly and overtly linked to mitigating the cost of the EU-CBAM and other potential future CBAMs**. Both the club and China's carbon pricing policy's stringency would therefore benefit from the inflated perception of EU-CBAM's economic impact on China[71].

Nevertheless, EU-CBAM development is still at this stage a serious diplomatic challenge. Many Northeast Asian stakeholders surveyed for this study question whether the strategy of CBAM diplomacy is inherently **incompatible with the country-specific ambition targets/NDCs set by Article 4 of the Paris Agreement**. China's special climate envoy Xie Zhenhua disagrees almost on a philosophical level with border carbon adjustment, seeing it as **redundant with Article 6 of the Paris Agreement and contrary to the principle of common but differentiated responsibility**[72]. Hence, the inclusion of CBAM in a club remains highly uncertain.

If a transformational climate club is established around the common improvement of climate policy stringency, the role taken by carbon border adjustment in the club will become central.

How could CBAM be incorporated into the design of a club involving partners with differing climate instruments? There are clearly two possible options:

- The first is a club-wide CBAM to avoid carbon leakage, which requires a hard-to-get political agreement on a common carbon price.
- The second is **a Forum where members implement their own differentiated CBAMs**, without eliminating tariffs between club members.

In light of this research, the latter option is the only feasible one so far, and the most clever tactic to engage Northeast Asian partners in the discussion about an ambitious climate club. This approach of differentiated CBAMs is described in

71 Kardish, C., Li, L., Hellmich, M., Duan, M., Tao, Y. (2021). The EU carbon border adjustment mechanism (CBAM) and China: unpacking options on policy design, potential responses, and possible impacts. *Adelphi*. https://www.adelphi.de/en/system/files/mediathek/bilder/20210610%20PolicyPaperCBAM%20China_Final.pdf.

72 (Yue et al., 2022 June 20)

the figure below. It does **allow for discounts to be agreed upon in two ways: through an agreement between two club members that overcome the comparison barriers and put carbon pricing and non-carbon pricing measures on the same scale, or through the use of sectoral green certificates.** This could also promote inclusiveness within the club by opening it up to as many members as possible, including developing countries.

Figure 4: Carbon border adjustment in a Climate Forum

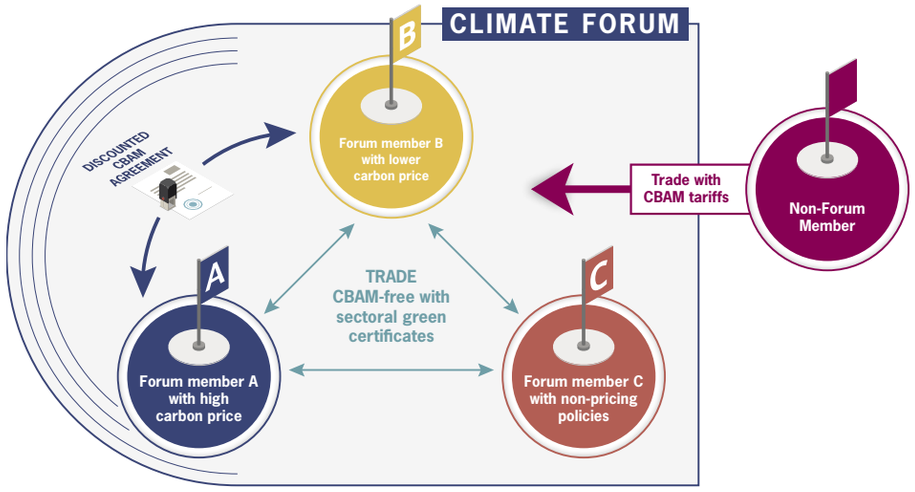


Table 4. Perspective comparison on carbon border adjustment in a climate club

	EU	Japan	South Korea	China
Perception of EU-CBAM	Environmental policy measure to account for emissions embodied in trade	Will comply and adapt answer to final policy design	Environmental measure with issues	Unilateral trade policy
Perception of carbon leakage	Serious threat	Not an immediate threat/reason for low carbon price	Future threat	Not a threat
CBAM's compliance with international trade rules	EU-CBAM is brought into compliance with WTO rules	Express concerns over the risk of different treatment between countries	Express concerns over he risk of different treatment between countries	Not compliant with WTO rules
Which factor to calculate the CBAM price	Three pillars: 1) carbon pricing abroad; 2) emissions calculation methods; 3) carbon pricing at home +Bilateral agreement possible	Carbon intensity should be taken into consideration	Domestic carbon pricing + carbon intensity should be taken into consideration	Companies should pay domestic prices otherwise it is unfair. Better implement ETS linkage
Administrative burden	Necessary	Worrying but will comply	Worrying but necessary to establish level-playing-field; burden should not be on exporter only	Too much burden for companies. In practice, Chinese government will provide help
Comparability issues to overcome	Defined by EU/ domestic legislation	Require common agreement	Require common agreement	Require common agreement
Club as a rules-making instrument	**Welcomes the initiative** if it does not impinge on the EU own policy	**Yes**, but also other forum	**Yes**, but also other forum	**Yes**, but trade should not be the focus of a club
Implementing CBAM in a club	EU-CBAM is a flexible mechanism open for future agreement	CBAM will become necessary in the future so it is better in a club than unilaterally. +Doubts about its compliance with Paris Agreement Article 4	Welcome the idea	CBAM is redundant with Paris Agreement's Article 6 and against CBDR. In principle, against the difference of treatment between countries.
Differentiated CBAM in a club	Open to the idea	Open to the idea	Open to the idea	Against

IV

AN INDUSTRIAL POLICY APPROACH IN A CLIMATE CLUB

This section examines the potential for developing common policies for industrial decarbonization in a climate club. It explores the views of Europeans and Northeast Asians on the main ideas of forming sectoral climate clubs and shows where cooperation is the most feasible. Finally, it provides a framework for collaboration to include parties with divergent interests and opinions in a single Climate Forum.

1. The great benefit of aligned industrial policies

Sectoral climate clubs are increasingly seen as a **prominent option for decarbonizing key carbon-intensive industrial sectors worldwide**, such as the steel and aluminum industries[73]. The main argument supporting this approach is that a carbon-neutral version of these hard-to-decarbonize sectors will never be as competitive as the carbonized version. This reality is widely understood in Europe and Northeast Asia. Indeed, some carbon-neutral goods cost twice as much to produce as their regular alternatives. This cost can be alleviated to a certain extent by domestic policy instruments, such as the leveling of carbon prices, but **countries can only achieve so much alone**. There is therefore a clear need to not only focus on coercive instruments coordination – carbon pricing and carbon border adjustment – but also on incentivizing **green market formation** by **stimulating demand for carbon-neutral products through green procurement, standards, and investments**.

It is in this context that international **policy alignments to address technical, economic, and political uncertainties become necessary**, which would be facilitated by a climate club[74]. **This approach may well emerge as the most**

73 Hermwille, L ., Lechtenbohmer, S., Ahman, M., van Hasselt, H., Bataille, C., Kronshage, S., Tonjes, A., Fischedick, M.,Oberthur, S., Garg, A., Hall, C.,Jochem, P., Schneider, C., Cui, R., Obergassel, W., Fragkos, P., Sudharmma, Vishwanathan, S., Trollip, H. (2022). A Climate club to decarbonize the global steel industry. *Nature climate change*. (12), 495-496. https://www.nature.com/articles/s41558-022-01383-9.

74 (Vangenechten & Lehne, 2022 February).

consensual in this survey. Beyond different perspectives on coercive measures previously underlined in this paper, industrial cooperation is another dimension that attracts European and Northeast Asian stakeholders. In China, industrial cooperation is seen as the most attractive dimension of the climate club discussion, given the country's core interest in staying pertinent in the global market, in terms of technology and regulation. There is a strong Chinese **appeal to contribute to the definition of new decarbonization standards and level-playing field. This, in turn, could generate interest in a climate club-oriented in this direction**. Hence, it is crucial to define the terms of a better industrial policy approach that could feasibly be implemented in a transformational climate club between the EU and Northeast Asia.

2. A sectoral approach to foster participation in a climate club?

The road to carbon neutrality differs in line with industrial specificities; indeed, in some particularly carbon-intensive sectors, decarbonization poses, at least at face value, an existential threat to revenues. A sectoral approach allows for, in the first instance, a rigorous assessment of existing industrial policies at a sector-specific level. It also improves systemic credibility in the context of a transformational climate club. Indeed, the **practical benefits of climate clubs are made more concrete** and thus easier to market to potential partners at a sectoral level. The idea of taking a sectoral approach to climate club is **widely supported across the board in this survey**.

A climate club should provide a format for members to **focus on selected carbon-intensive industries** and enterprises and, in the longer term, agree on the structural processes necessary to develop a common industrial decarbonization policy. Despite significant perspective divergences between Europe and Northeast Asia, this research identifies 4 priority sectors where cooperation might be more feasible between the two regions: **steel, aluminum, hydrogen, and clean energy**. The steel sector is favored by policy analysts.

This cooperation will not be easy, however, due to the **highly heterogeneous approaches to setting industrial decarbonization targets between countries**. In **South Korea** alone, the new administration has established dozens of sectoral measures included in 4 key issues for industrial decarbonization, with an **emphasis on clean energy[75]**. In **Japan**, the net zero industrial transition policy **focuses on**

transition finance roadmaps in 7 key sectors[76] of the Japanese economy, including iron and steel[77], power[78], and cement[79]. **China** has set a key implementation plan for the decarbonization of the industrial sectors, which **focuses on iron and steel, building materials, petrochemicals and chemicals, and non-ferrous metals**[80]. For the Steel sector alone, often considered the most promising sector for a climate club and where the country is the major global producer, China's current transition guidelines are not definitive and focus on the forecasted future peak in GHG emissions[81]. While the industrial strategy of the **EU Green New Deal refers to all industrial value chains**[82].

Additionally, there are also some difficult-to-resolve political limitations to implementing sectoral climate clubs. Korean and Japanese stakeholders argued that any sectoral climate club would **resemble existing platforms**, such as the IEA's Clean Energy Ministerial Platform[83]. Also, among the diversity of opinion on carbon pricing and border carbon adjustment, what would be the added value of a sectoral climate club?

While Chinese stakeholders broadly support the development of sectoral industrial climate clubs, they see it as **extremely difficult to implement with many G7 partners**. The remnants of past and present trade restrictions[84] on critical goods to decarbonization, such as solar panels, remind the poor chances of China joining such initiatives. Chinese stakeholders point out that the country would find it more beneficial to reinvigorate initiatives such as the Green Belt and Road[85] for

75 A more detailed sectoral plan for industrial decarbonization is scheduled for early 2023. See: Korean Government. (2022, May 02). The 110th priority of the Yun Seok Yeul Government. *Korean Presidential Transition Committee*. https://www.korea.kr/archive/expDocView.do?docId=39973 *(In Korean)*.

76 METI. (2022, March). Towards a transition to decarbonization - Transition Finance. *METI*. https://www.meti.go.jp/english/policy/energy_environment/transition_finance/index.html.

77 METI. (2021, October). Technology Roadmap for "Transition Finance" in Iron and Steel Sector. *METI*. https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_technology_roadmap_iron_and_steel_eng.pdf.

78 METI. (2022, February). Technology Roadmap for Power Sector. *METI*. https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_technology_roadmap_power_eng.pdf.

79 METI. (2022, March). Technology Roadmap for "Transition Finance" in the cement Sector. *METI*. https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_technology_roadmap_cement_eng.pdf.

80 MIIT (2022, July 7). Implementation plan for carbon peaking in the industrial sector. *MIIT*. https://www.miit.gov.cn/jgsj/jns/gzdt/art/2022/art_59b70d1b1a3344ed93de623da118ee9e.html *(In Chinese)*.

81 MIIT (2022, February 7). Guidance from three departments on promoting high-quality development of the iron and steel industry. *MIIT*.

82 European Commission (2020, March 3). A new industrial strategy for Europe. *European Commission communication*. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0102&from=IT.

83 Clean Energy Ministerial Platform (2022). Who we are [Website]. https://www.cleanenergyministerial.org/who-we-are/.

84 Liu, J., Ding, L. (2022, August 15). Solar Panels Piling Up at US Border on Xinjiang Forced Labor Law. *Bloomberg*. https://www.bloomberg.com/news/articles/2022-08-15/solar-panels-piling-up-at-us-border-on-xinjiang-forced-labor-law#xj4y7vzkg.

85 Green Belt and Road Initiative Center (2022). Belt and Road Initiative International Green Development Coalition (BRIGC) [Website]. https://green-bri.org/belt-and-road-initiative-green-coalition-brigc/.

China's international industrial cooperation on decarbonization. This format is seen by many Chinese stakeholders as a kind of China-led climate club, which offers great room for a sectoral approach and provides greater political benefits for China than any initiative coming from the G7 or the West. The latter would be seen directly as a potential competitor for China rather than a potential platform to join.

Therefore, without serious coercion such as high tariffs for joining specific markets, there is insufficient incentive for key players like China to join a sectoral climate club. This means that **negotiating a climate club for a specific industry sector cannot be completely separated from an agreement on carbon pricing or carbon border adjustment**.

3. Level playing field: Subnational variation and development differences must be accounted for

Differentiation along sectoral lines is therefore a clear imperative, but might not be sufficient: in formulating such a transnational strategy, policymakers **must also consider subnational or regional differences and their sectoral implications**. For example, in the context of China's 23 provinces or the EU's 27 member states, this differentiation takes on new complexity with innumerable implications. This underlines the potential interest to **open the club to subnational jurisdictions, especially in federal countries**. In broader terms, Japanese policymakers surveyed warned of the risk of **missing out on potential progress by failing to consider differing circumstances**. To avoid this, there is a broad understanding in Europe and Northeast Asia of the **necessity of bringing private and public actors together to design rules on a sector-specific basis**.

Developmental disparities between partners (and, as established, within partner countries at a subnational/regional level) naturally **impact their industrial capacity to decarbonize towards a net zero objective**. This represents an important factor to take into consideration when designing a climate club. Stakeholders across this survey display pragmatism in their assessment that, due to energy-related specificities and differing levels of state involvement in industrial policy, an **absolute level playing field is impossible**. Eliminating inequity entirely is an unrealistic goal, but cooperation and easement mechanisms can make systems like climate clubs fairer and more competitive.

The Chinese stakeholders surveyed consider that **differentiation in industrial policy can be positive** and also see an absolute level playing field, even at the sectoral level, as unrealistic. Although, they take another stance than their European, Japanese, and South Korean counterparts. **They deem that unfair competition between certain industries in key sectors can have important positive externalities at the global level**. For example, the policy advantage that Chinese solar panel producers enjoyed over their foreign competitors has had enormous positive effects on reducing the price of solar photovoltaic panels and has made China the world's largest supplier of green energy. Some Chinese stakeholders point out that the **recognition by a climate club of consumer markets (e.g., Europe) and production markets (e.g., China) for certain products critical to decarbonization could incentivize China to join a club**. However, this vision is at odds with the current needs[86] of the green energy supply chain for the global clean energy transition and with renewed industrial policy in many potential partners such as the EU[87]. That being said, Chinese stakeholders still recognize that there are no clear rules for green industry and environmental subsidies, and that there is room for cooperation to establish clear rules on this, in a climate club or other form.

4. The challenge of 'scaling up' by addressing red tape and sharing technologies

One of the great benefits of adopting an industrial policy at the level of a climate club is to collectively address technical issues critical to decarbonization. As such, can coordinating the development of carbon-neutral technologies by sharing investment risks and intellectual property rights for critical technologies, public-private partnerships, and synergies with the private sector be included in the club's design? **Most of these proposals have theoretical support in Northeast Asia**. In particular, fostering transnational public-private partnerships and involving the private sector in the club finds broad support.

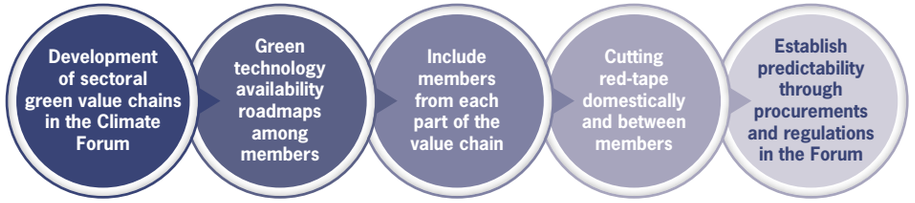
86 IEA (2022, July 7). The world needs more diverse solar panel supply chains to ensure a secure transition to net zero emissions. *IEA press release*. https://www.iea.org/news/the-world-needs-more-diverse-solar-panel-supply-chains-to-ensure-a-secure-transition-to-net-zero-emissions.

87 European Commission (2022, May). EU Solar Energy Strategy. *European Commission*. https://energy.ec.europa.eu/topics/renewable-energy/solar-energy_en.

One key insight gathered by this research concerns the perceived role of advanced technologies in decarbonization and their availability. Indeed, many of the most promising climate mitigation technologies already exist thanks to recent progress in research. According to the private sector, there are, however, logistical obstacles to widely distributing these technologies: global value chains are complex and wrapped in red tape, demand expertise, know-how, and long-term perspective to establish predictability. Private stakeholders express that it is the development and scaling up, the 'D' in development, rather than the 'R' in research, that must be contended with. The great value of a climate club could therefore be to **include partners from each part of the value chain to cut through the red tape together to accelerate the decarbonization of the industry**. The second major value could be **to establish predictability for the development of these technologies**. The larger the green market, the faster it will develop.

In that regard, Japanese and South Korean stakeholders agree it is necessary to have a **technology availability roadmap that displays the existing diversity of industrial decarbonization options between partners**. Chinese stakeholders also support this idea, along with **technology sharing**, but are skeptical about the willingness of other countries to share technologies with them, **for instance waiving property rights**. Opinions on technology sharing in a climate club are not unanimous. The EU Green New Deal industrial strategy refers to the **respect of intellectual property rights as fundamental for Europe's industrial transition[88]**. This aspect is also strongly underlined in Japan. Many of the surveyed industrial stakeholders emphasize that it **should not affect the incentive to innovate for companies** by threatening return on investment. Yet, many experts believe the sharing of technologies could be a **central encouragement for membership and inclusiveness**.

Figure 5: Description of a sectoral approach in a Climate Forum



88 (European Commission, 2020 March 3).

5. A Climate Forum enabling flexibility and comparability through green labels

Adopting standards that allow **methodological comparability of differing domestic policies** represents more than just a stepping stone for greater collaboration: it could be the foundation for enabling partners to ramp up ambition in climate policy. This applies again to the **setting of carbon standards**, from the **selection of CBAM-covered goods** to the calculation of their **carbon intensity**, both of which vary in accordance with the **chosen scope**[89]. Stakeholders in China, Japan, and South Korea are in agreement with European ones on this aspect and believe it would be **one of the key benefits of the climate club format**.

Agreeing upon methodological benchmarks has clear potential to allow for the efficient scaling of ambitious climate mitigation measures. However, it is necessary to acknowledge that for political feasibility reasons, **a flexible climate club might include partners that do not necessarily agree on every measure:** in this sense, the fostering of a collaborative spirit leads to productive exchanges on standardization whilst **making room for diversity in perspectives**.

Recent publications[90] advocate for certification schemes such as **"green labels"** for low-emission goods, both for consumers and producers, as potential instruments implemented by a climate club for comparability. Green labels, or green certificates, suffer from a paradoxical perception among stakeholders. They are both seen as an **appropriate option** to allow flexibility and as an **administrative burden** for covered entities when linked to carbon border adjustment. This complicates their implementation in a large climate club but could be an argument for an Climate Forum, establishing rules that can be used by companies in member countries to access the club's market.

Against this backdrop, Chinese stakeholders point out that China would not be satisfied outside of a climate club that, alone, would define standards and labels for low-carbon industrial goods. However, if such a club implements strict standards enforced by a carbon border adjustment, the Chinese survey shows that **Chinese companies will do whatever it takes to align themselves with these rules and have access to adopted green labels**. This is an argument in favor of the confrontational approach of using CBAM as a stick.

89 Scope 1= Direct emissions to produce the good.
Scope 2 = Direct + downstream indirect emissions to produce the good.
Scope 3 = Direct + downstream and upstream indirect emissions to produce the good.

90 Elkerbout, M., Bryhn, J., Righetti, E., Chapman, F. (2022). From carbon pricing to climate clubs: How to support global climate policy coordination towards climate neutrality (RR2022-01 CEPS Research Report) https://www.ceps.eu/ceps-publications/from-carbon-pricing-to-climate-clubs/ or Oliu-Barton, M., Tagliapietra, S. (2022, August 9). Climate club 'green certificate' would boost membership. *Nature* (Correspondence).https://www.nature.com/articles/d41586-022-02128-6.

6. Finance for green market formation

One of the main arguments for taking an industrial approach in a climate club is the opportunity for countries to join together to support the formation of green markets. This can take many forms, but the most common policies considered are strong and coordinated actions, such as an agreement on enhanced subsidies for low-carbon goods and green public procurements. There is wide recognition in Northeast Asia and Europe of the importance of finance for decarbonizing the industrial sector, particularly **for sectors that do not have short-term green transition potential**. Most stakeholders underscore the **need for international cooperation** in the finance sector to scale up industrial decarbonization, **not only between countries but also by including corporations in the club**.

However, here again, there are **critical heterogeneities between jurisdictions in terms of sustainable finance policy development and definition**. Tools such as the EU Green taxonomy strictly define sustainable activities[91]. The Korean taxonomy creates low-interest loans for green economic activities but is currently being revised by the new administration[92]. Finally, the Chinese taxonomy focuses on Green bonds for industry decarbonization[93]. While the Japanese have established non-binding sectorial transition finance roadmaps per sector to accompany enterprises[94]. Most of these texts refer to international green finance cooperation, but they also diverge in scope, output, and legal nature, as illustrated in *Table 5* on the next page.

91 European Parliament. (2020, June 18). On the establishment of a framework to facilitate sustainable investment, and amending Regulation. *Official Journal of the European Union*. L198/13. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852.

92 MOEK (2021, December). Korean Green Taxonomy. *Ministry of the Environment of the Republic of Korea*. https://www.me.go.kr/home/web/policy_data/read.do;jsessionid=6ohRKyjJFhk2TevGcXf37ovs.mehome1?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=92&orgCd=&condition.toInpYmd=-null&condition.fromInpYmd=null&condition.orderSeqId=7638&condition.rnSeq=135&condition.deleteYn=N&condition.deptNm=null&seq=7853 *(In Korean)*.

93 NDRC (2021, April). *PBC, NDRC and CSRC Issue the Green Bond Endorsed Projects Catalogue (2021 Edition)*. NDRC. http://www.gov.cn/zhengce/zhengceku/2021-04/22/content_5601284.htm *(In Chinese)*.

94 (METI, 2022 March).

Table 5. Comparative Industrial dimension in Green Taxonomy[95]

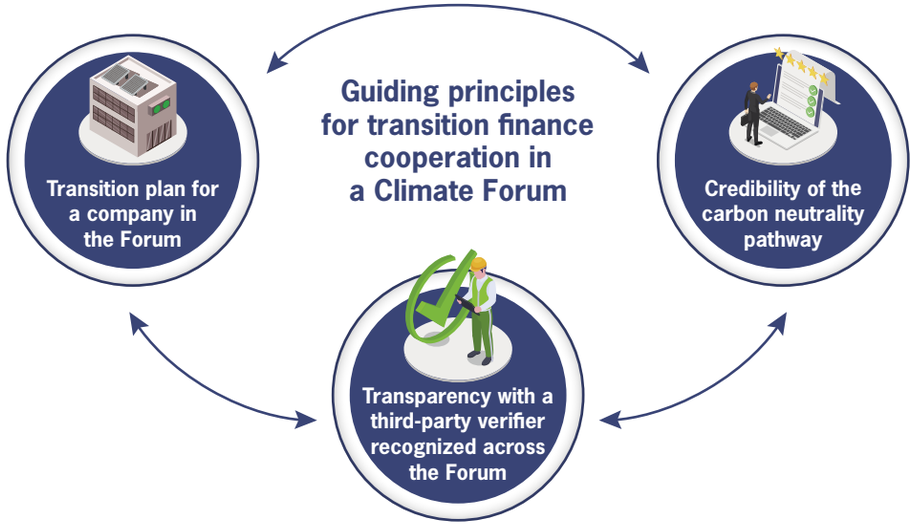
Jurisdiction	Document/State of play	Sector concerned / Industrial dime	Approach
EU	In regulation with additional delegated acts to follow	Taxonomy covers economic activities of roughly 40% of listed companies within **7 sectors:** Agriculture & forestry; Environmental protection and restoration activities; Manufacturing; Energy; Water and waste; Transport; Buildings; ICT; Professional services.	**Mandatory Technical Screening Criteria ("Do No Significant Harm" principle)** Minimum social safeguards Room for transition and enabling activities
China	**In use Green Bond Endorsed Projects Catalogue** (2021) released by the PBC, the NDRC, and the China Securities Regulatory Commission (CSRC).	**Level-I industry categories:** Energy-saving and environmental protection industry; Cleaner production industry; clean energy industry; eco-environment industry; green upgrading of infrastructure; Green services.	**Mandatory Whitelist Binary (green/not green)** Activities linked to **industry-specific green standards and criteria** set by competent regulatory authorities.
Japan	**In use Basic Guidelines on Climate Transition Finance + sector-specific Roadmaps** released by METI (March 2022)	Focus on **transition pathways for high emitting companies/sectors** and ensure the credibility of transition finance labels. **7 target sectors:** steel, chemistry, electric power, gas, petroleum, cement and paper/pulp	**Non-legally binding roadmaps:** Principles-based guidelines with forthcoming cases studies and Industry transition pathways for sectors
South-Korea	**'K-taxonomy' currently being updated** by the new administration (to include nuclear energy)	**53 activities in 9 major categories:** Energy; Manufacturing; Cities and buildings; Transportation; Resource circulation; CO_2 capture; Water; Biodiversity & Agriculture; Research and education.	**Similar structure to EU Taxonomy,** substantial contribution + DNSH + minimum safeguards. Also contains exclusions criteria

This call to include transition finance as a topic in the climate club talks is particularly clear in Japan. It is echoed in the above-mentioned Japanese framework of "transition finance" that typically helps companies lacking a straightforward or cost-effective path to net zero emissions to invest in new technologies and subsequently change their business models. For finance cooperation in a climate club,

95 Updated version based on "Stocktake of sustainable finance taxonomies (Extract from IPSF-UNDESA input paper)": European Commission (2022, January). Common Ground Taxonomy – Climate Change Mitigation. (Instruction report of the International Platform on Sustainable Finance, Taxonomy Working Group).https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/211104-ipsf-common-ground-taxonomy-instruction -report-2021_en.pdf.

credibility is considered of utmost importance by stakeholders. This is made possible by **transition plans** that are comprehensive, ambitious, and feasible, and externally reviewed by independent entities which track and assess their progress. **Transparency, then, is a critical success factor**. These three guiding principles of transition finance could serve as compelling solutions and could be encompassed in a Climate Forum design.

Figure 6: Guiding principles for transition finance (company level)



The **steel, hydrogen, and (evidently) the power sector**, are the three most cited ones for having potential financing needs that would benefit from a climate club. Regarding a coalition for the power sector, the Just Energy Transition Partnership[96] between France, Germany, the UK, the US, the EU, and South Africa, is seen as an inspiring model by European and Japanese stakeholders. Chinese stakeholders emphasize the need to **include international organizations such as development banks** to participate in the club if transition finance is considered in the club's design.

96 European Commission. (2021, Novembre 2). *France, Germany, UK, US and EU launch ground-breaking International Just Energy Transition Partnership with South Africa.* European Commission press release. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_5768.

Beyond these technical heterogeneities and some differences of opinion on the extent of subsidies, **financing the formation of green markets appears to be a potential point of convergence between Europe and Northeast Asia in the formation of climate clubs**. However, the competition narrative between major players such as the EU, China, and the United States, could prevent this from happening. For example, Chinese stakeholders often refer to the ability of initiatives such as the Green Belt and Road to serve as a climate club to finance industrial decarbonization with Chinese partners. **This makes joint action in the same climate club doubtful, because it would not align with other economic and political interests of China, but also those of the US and the EU**.

Table 6. Perspective comparison on industrial policy in a climate club

	EU	Japan	South Korea	China
Greater industrial cooperation for decarbonization	**Support**	**Support**	**Support**	**Support**
Sectoral approach within a climate club	**Support**, with capacity limitation	**Support**	**Support**	**Support** the idea, but skeptical of its political feasibility with every partner
Key sector(s) in current industrial decarbonization policies	All industrial value chains	Iron and Steel; Chemical; Power; Gas; Oil; Pulp and Paper; Cement	Power[97]	Iron and Steel; Building materials; Petrochemicals and chemicals; non-ferrous metal
Level-playing field per sector	Important for fairness, but recognize difficulties to achieve	Absolute Level playing field difficult but should be aimed	Fair level playing field necessary	Unrealistic, but there should be rules. Unfair competition between certain sectors can have important positive externalities
Technology availability roadmap in the club	**Interesting idea**	**Necessary instrument**	**Necessary instrument**	**Interesting idea** with technology sharing
Waiving intellectual property rights for critical technology in the club	Against	Against	Mostly against	Support but skeptical other countries will agree

97 A more detailed sectoral plan for industrial decarbonization is scheduled for early 2023, see: Korean Government (2022, May 02).

	EU	Japan	South Korea	China
Climate club as a forum to establish rules for comparability	**Support**	**Support**	**Support**	**Support**, especially to participate in the rules-making process
Green labels in a climate club	**Appropriate** for flexibility	**Appropriate** for flexibility but administrative burden	**Appropriate** for flexibility but administrative burden	Fear the administrative burden
Club cooperation in finance for green market formation	**Support**, work needed for common definition	**Support**	**Support**	**Support** the idea, depending on partners

V

HOW TO GOVERN A TRANSFORMATIONAL CLIMATE CLUB?

This section examines how to organize a climate club from an institutional and design perspective. It discusses the divergences and convergences of views on climate club governance between Northeast Asian and European stakeholders. It finally develops the question of how to enable China's participation using an open Climate Forum format despite all current geopolitical barriers.

1. Objectives for governing a transformational climate club

Promoting inclusivity has become a critical point of the G7 climate club discussions[98], and for good reason – climate clubs gain environmental effectiveness in numbers, and decarbonization is a global objective. In practice, however, **inclusivity is not so clear-cut and might be counter-productive**[99]. Furthermore, the issue of heterogeneity in climate policies demands a well-defined, rigorous, and feasible framework for cooperation. A transformational climate club especially **requires an effective compliance mechanism** benefitting club membership and penalizing in case of non-compliance.

European and Northeast Asian stakeholders clearly converge on a number of goals and guidelines for the design and governance of a successful, transformational climate club. In that regard, the club design should at least embrace the following dimensions:

98 "The Climate Club, as an intergovernmental forum of high ambition, will be inclusive in nature and open to countries that are committed to the full implementation of the Paris Agreement and the decisions thereunder, in particular the Glasgow Climate Pact, and to accelerate their action to this end. We invite partners, including major emitters, G20 members and other developing and emerging economies, to intensify discussions and consultations with us on this matter.": G7. (2022, June 28).

99 For a discussion of the pros- and the cons- of large and inclusive climate clubs see: Unger, C., Mar, A., K., Gurtler, K. (2020). A club's contribution to global climate governance: the case of the Climate and Clean Air Coalition. Nature Palgrave Communications, 6(99). https://www.nature.com/articles/s41599-020-0474-8.

- **Enable methodological comparability**, as a climate club is only feasible if partners can agree upon common metrics;
- **Facilitate the establishment of benchmarks and standards** on carbon pricing, carbon border adjustment, and green procurement;
- **Adopt transition roadmaps per sector**;
- **Endorse finance mechanisms**;
- **Comply with international trade rules**;
- Have a **clear and rigorous framework**, with a **regular and transparent working structure**.

However, there are clear warnings emerging about potential overlap and synergies between climate-club-led measures and existing climate alliances. EU policymakers especially underline that a climate club **should promote synergies**, such as with existing bilateral arrangements, and **avoid inhibiting ongoing ambitious climate mitigation strategies**, such as the EU-CBAM, at all costs. In contrast, there is also a call in Europe and Northeast Asia for an **evolutionary step up, beyond simply respecting the range of existing initiatives**, stressing the urgent need for a global expansion of ambition at all levels.

2. Membership conditions and their geopolitical implications

A central question raised by the prospect of forming a climate club is that of membership and its conditions. The main European vision is that **participation requirements should be specific and operational**, rather than vague and defined by perceptions of self-declared 'ambition'. Founding partners should strive to ensure that such parameters are proportional, not least to render the club's existence defensible.

Nonetheless, the choice of membership criteria is a tough conceptual challenge reflecting the two aforementioned policy strategies for climate club formation: **there exists a tension between the drive to promote inclusivity and the need for strict rules**. There is a genuine will to include aspiring partners and to facilitate cooperation with developing nations. Perception matters: for a climate club to thrive, leading partners must be seen as promoting openness and inclusivity. Such a club would quickly fall apart if it were easily dismissed as an exclusive and self-serving clique limited to G7 countries.

Evidently, this is all easier said than done. **The question of which partners to include, based on which criteria, remains largely unanswered within G7 discussions**. A way to address it would be for a climate club to start small, with a limited number of partners and a sectoral focus on carbon-intensive industries, which would gradually expand. This has been the case for existing weaker climate alliances. Still, there is **a critical dilemma about the inclusion of China**, which is of utmost relevance in the steel industry for instance. The geopolitical implications of either its participation or its exclusion cannot be overstated. Other major players like India, Turkey, or Indonesia would ideally work towards membership, perhaps in the function of carbon neutrality criteria, but at this stage, the roadmap remains hazy.

The question of Chinese participation is crucial and depends on the political strategy adopted for the club. Dominant Chinese views on membership conditions revolve around two main demands. First, the **club should not be tailored to the political needs of some countries** (such as the United States) and, therefore, should probably have **carbon pricing as a membership condition**. Second, the club should remain sufficiently open and bring together **countries making ambitious industrial decarbonization commitments, without too many qualitative requirements**, while including major buyers and producers like the EU and China.

Policymakers from Europe, Japan, China, and South Korea **agree that, as a minimum prerequisite, aspiring partners must commit to legally binding carbon neutrality targets and sustainable mid-term and long-term decarbonization strategies**. Nevertheless, using carbon neutrality as a membership condition has both environmental and geopolitical consequences: a 2050 carbon neutrality target prerequisite would exclude major emitters including China, and might be seen as a condition created to deliberately exclude the country.

Current discussions only involve G7 members, and the German G7 presidency is now engaging with other countries, including China and India. Corporate membership appears to be consensual in this survey. However, the potential **inclusion of subnational governments**, such as Chinese provinces or US states, to alleviate geopolitical barriers, **seems to be less clear**. On this last aspect, Chinese stakeholders surveyed believe that the central government will always prevail in such an international format.

3. Institution-building and ties with the Paris Agreement

One nagging question of climate club governance is how partners should approach its institutional dimension. As various policymakers highlight, there is a lack of appropriate global climate governing bodies. The establishment of a compliance mechanism, but also of a conflict-resolving mechanism, raises vital questions about institution-building. **If institutional oversight is necessary, what might it look like? Hence, is there support for the creation of a new regulatory body in the form of a climate club?** If so, could this institution succeed in implementing such politically-charged measures as carbon pricing, carbon border adjustment, and industrial policy?

If a climate club is ever conceived, there is a wide acknowledgment that the necessity for an institutional structure would prevail. However, **there is no clear common agreement on institution-building between Northeast Asian and European stakeholders:** the choice of inclusivity of the climate club frames its achievability. Some stakeholders, like some experts, suggest a **very slim administration**[100] **that could be taken over by existing international organizations such as the IMF or the OECD**. From the **Chinese perspective, the UNFCCC itself should serve as a secretariat**, which would demonstrate the willingness of the club to be as inclusive as possible and anchor its multilateral nature.

In this context, the integration of the climate clubs into the Paris Agreement institutional structure emerged as perhaps the most important governance objective. In this regard, both Northeast Asian and European stakeholders underline the value of institutional strength and resilience. Thus, **building a transformational climate club within the framework of the Paris Agreement is a vital priority, and does not preclude the club from scaling up ambition beyond the targets set by NDCs**. It means that, regardless of what countries are able to agree upon within the club, it should explicitly be included in their respective NDCs.

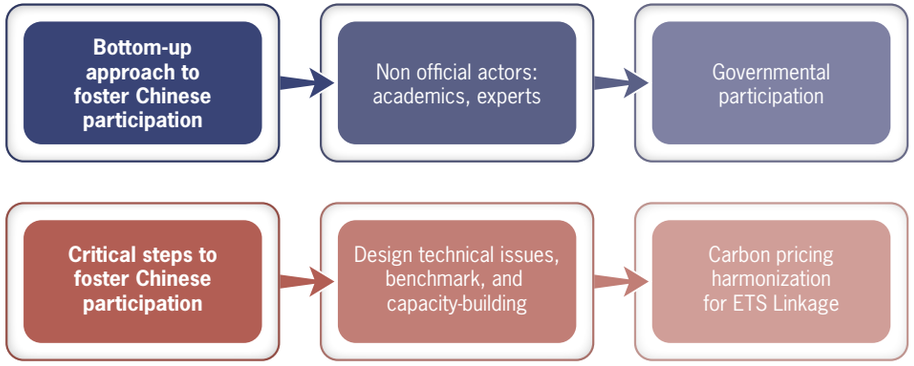
As a crucial starting point, **the club as discussed by the G7, should itself be registered under Paris Agreement's Article 6.8, bolstering recognition and complementarity**. Under these terms, the framework of non-market approaches set out by Article 6.8 should act as a platform for climate club institutional construction. **In the longer run, the club could consider using Article 6.2 mechanisms to implement deeper carbon pricing cooperation between partners**, such as ETS linkage. This might further enable easing the implementation of CBAM among club members.

100 (Michaelowa, et al., 2022).

4. Designing a climate club as a flexible Forum

A transformational climate club should aim to remove barriers to cooperation while implementing a compliance mechanism. This will not be an easy task given the divergences in opinion this research project revealed, particularly from China. However, the Chinese position is not irreconcilable with a climate club. **From many Chinese experts' perspectives, the best way to involve China in a club would be through a bottom-up approach**. First, non-official actors, such as academics and research institutes, should be invited to discuss the club. Then, these actors would engage Chinese participation at the governmental level. In addition, certain **critical steps would have to be taken to include China in such a Forum format**. The club should first design technical issues focusing on experience sharing and research cooperation. In this regard, Chinese stakeholders believe that the club should provide China with a capacity-building tool to address its decarbonization gaps, and discuss benchmarks between members of the clubs. This step would be of great interest to the country. The second step would be to foster carbon pricing harmonization up to ETS Linkage.

Figure 7: Steps to foster Chinese participation



In any case, partners must adhere to the rules of the club for trust to be preserved. In absence of legal bindingness, this could become problematic. The issue of **compliance mechanisms**, as guarantors for the legitimacy of a potential climate club, is therefore central. However, among stakeholders surveyed, there is an acknowledgment that although compliance mechanisms are clearly necessary, there are **compelling political reasons to not set hard and fast rules at the**

early stage of climate club formation. Partners should instead **first focus on inclusivity and attractiveness to bring other countries on board** in the global fight against climate change. In many ways, political discourse has not yet caught up with the advances of the scientific debate on climate clubs.

But then, what would be the added value of such a climate club compared to existing initiatives? Policymakers in the EU, Japan and South Korea agree that an **agenda could be established at first**, starting with a lax compliance mechanism that would be **progressively strengthened**. Thus going further, the club should also encompass roadmap and agenda-setting, than solely NDCs. However, this approach is controversial among Chinese stakeholders who **doubt that China would lock itself into an agenda it does not fully control**. China, indeed, wants to keep its own latitude in fixing some critical dimensions of its decarbonization, without any international coalition forcing the agenda.

This research reveals that, for political feasibility purposes, a climate club must first be designed to **accommodate differentiation and to iron out initial methodological incomparabilities over time**. In this sense, greater ambition should come after agreeing on climate club design. The club's purpose should thus be to offer countries a format for collaboration and coordination to increase their climate policy stringency. Adopting a **forum-like approach would enable members to willingly participate in some measures but not others**, whilst still being part of the club. In practical terms, it means that perhaps ten member states could agree on common standards for green steel, while twenty others could agree on carbon pricing. There is, of course, the legitimate concern that this political strategy would dilute the effectiveness of the club by promoting superficial commitments. Moreover, the cautious Chinese perspective could significantly slow down the implementation of the club, which would not match the needs of other partners. However, this **forum approach is the most politically feasible** and the only one able to gather key actors in the club.

Table 7. Perspective comparison on climate club governance

	EU	Japan	South Korea	China
Carbon neutrality as membership condition	**Yes**, with long-term strategies	**Yes**, 2050	**Yes**, 2050	**Yes**, but without a specific date
Ratcheted NDC included in the membership conditions	**Yes**	**Yes**	**Yes**	**Yes**
Corporate membership	**Yes**	**Yes**	**Yes**	**Yes**
Subnational jurisdictions' membership	**Yes**	**Yes**	**Yes**	**Yes**
Institution to govern the club	Necessary, but slim administration	IMF or OECD	Existing institution (IMF or OECD)	Under UNFCCC
Compliance and conflict solving mechanism	Necessary if truly transformational	Maybe not at first, but necessary if CBAM	Would soon become necessary	No
Club as a Forum allowing differentiation	**Maybe**, depending on design and if it does not interfere with domestic measures like EU-CBAM	**Yes**	**Yes**	**Yes**, but China has to be part from the beginning
Forum as an agenda-setting mechanism for targets and climate policy	Yes	Yes	Yes	China would not lock itself in a climate policy agenda it does not fully control

RECOMMENDATIONS

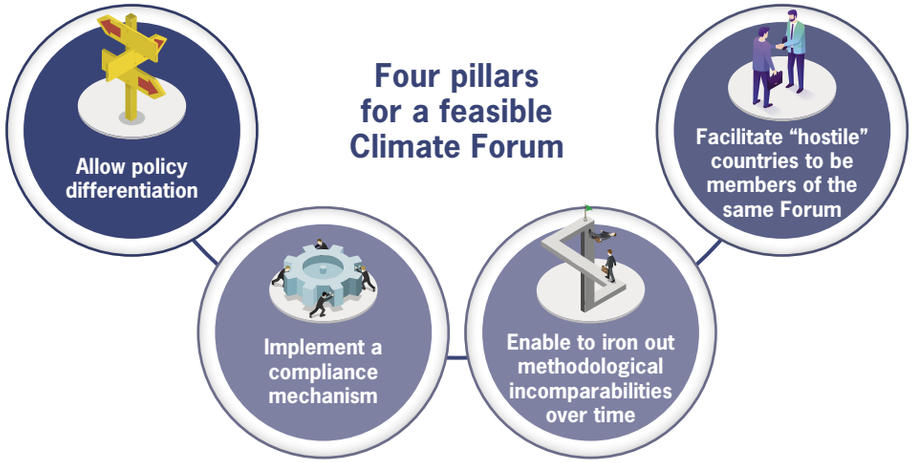
TAKE ON THE COMPETITION

Forming a truly transformational climate club will be politically challenging and the initiative will be exposed to ambitious climate policies traditional barriers – two tasks aggravated by the current geopolitical turmoil. Nevertheless, attempts to form such a club in such a crisis context make sense because coalitions of countries may offer a more effective solution where the multilateral regime alone will increasingly struggle. Divergences in a climate club conception between Europe and Northeast Asia reveal precious insights: **to be effective, a climate club must operate in a format that allows members to have differentiated climate policies**.

The objective of a truly transformational climate club should be to encourage mitigation policy at the global level, especially for the biggest emitters – this is a strong argument in favor of including China, the world's largest one. **However, there are incompatible differences in critical issues** related **to climate club design between G7 countries and China**. In addition, despite numerous studies that consider that China would benefit significantly from joining[101], **the Chinese themselves have always been reluctant to join any form of climate coalition that would add to the multilateral process**. The country is unwilling to bind itself to international commitments in such a format, often denouncing the cherry-picking of specific dimensions that benefit other countries' political agendas. Moreover, this research indicates that China has no intention to **join a climate club it did not initiate**. Nor will it join a climate club with most of the G7 countries, especially the United States. Nevertheless, Chinese policymakers and experts are talking together about the climate club initiative, trying to find the best way for the country to respond… Therefore, **any attempt to create a climate club should try to involve China as a member, but not at the cost of slowing down indefinitely the club formation**.

101 Martin, N., van den Bergh, J. (2019). A multi-level climate club with national and subnational members: theory and application to US states. *Environmental Research. Letters*. 14 124049.

Figure 8: Four pillars of a feasible Climate Forum



Against this backdrop, there are **two potential policy strategies that** could enable the emergence of a transformational climate club. One aims for **full inclusiveness from the beginning**, while the other **accepts a certain level of confrontation from the start**.

The first option would be initiated by the G20 (rather than the G7) and invite any country willing to join. It would be slow, seeking to maximize participation and initially taking an **industry-oriented approach**. This option would have the advantage of countering the current Chinese position stipulating China would probably never participate in a club that it did not initiate in the short to medium term.

There are many rational reasons in favor of including China from the beginning through a G20-like format, which already includes China and other major countries like India. This option could facilitate the gradual inclusion of other actors critical to the transition in the Global South. In this context, the strategy would be to open negotiations for industry-driven climate clubs focusing on hard-to-reduce sectors of interest to China and the world (e.g., steel and cement). **This approach, however, promises to be long and perilous**. Climate talks at the G20 now face a critical confrontation that does not bode well for the future of climate negotiations[102].

102 Lamb, K., Budiman, Y. (2022, August 31). G20 climate talks in Indonesia fail to agree communique. *Reuters*. https://www.reuters.com/business/environment/g20-host-indonesia-urges-cooperation-tackle-global-climate-issues-2022-08-31/.

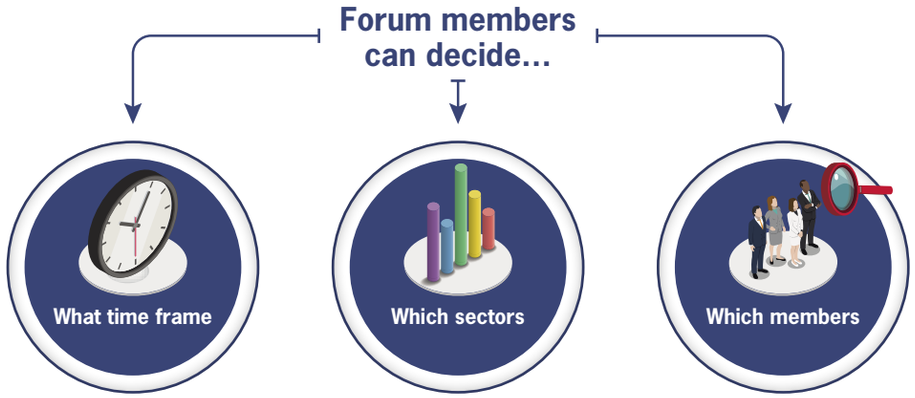
Additionally, it does not solve the obstacles of hostility between major partners like the United States and China, but also India, or Russia. Therefore, **a G20-led climate club would most likely not emerge in time to be useful**.

The second strategy builds on the current G7 initiative and is most likely to be beneficial for climate action. It would take a proactive stance, accept some risk of confrontation to encourage greater ambition over time, and **assume competition between countries by adopting a Forum-type approach that enables sub-groups of members to form**.

This policy strategy aims to trump hostility between potential members and offer opportunities for differentiation. It entails starting **small** but beyond the sole G7 members, **inviting countries currently excluded from the discussions** like China, South Korea, and India, using a Forum-like design open to all countries willing to participate.

This G7-initiated Forum should be based on three simple principles. First, **members should be able to choose the sectors in which they wish to cooperate**. Second, **members should decide who they want to cooperate with**. Third, **members should be able to control when they want to cooperate** (when they deem they are ready).

Figure 9: Three principles of Climate Forum membership



This strategy involves accepting that some major emitters might join the Forum at first without great involvement. Instead, countries will be incentivized to deeper

participation or to join the Forum, bit by bit, through the political risk of not participating with most integrated members in the setting of common sectoral decarbonization agendas, the development of rules and standards for sectoral decarbonization, joint procurements, and industrial cooperation. This format enables countries to cooperate on specific sectors they deem crucial for their decarbonization. It also allows for membership and gradual cooperation of countries that are initially reluctant to cooperate. This involves the **creation of subgroups inside the Forum**, like for example EU, South Korea, and China on Steel; Japan, China, and South Korea on carbon pricing, etc.

The following tables outline detailed recommendations for the design of an open Forum based on the perception of an achievable climate club between European and Northeast Asian stakeholders. They provide ideas on how to overcome key barriers to participation. These recommendations intend to help make the climate Forum as comprehensive and inclusive as possible. They can be viewed as a set of recommendations or as recommendations for a specific part of the policy to be implemented (for example, for an industry climate club).

	Recommendations 1: Governance ***Design an open and inclusive Climate Forum***
	To achieve the Forum's goals, **different levels of memberships** implying **different levels of integration per sector and policy** should be considered: the Forum should allow different sub-groups of members to cooperate on certain topics.
Membership conditions (common grounds)	Already implemented explicit **carbon pricing should not be a membership condition**.
	Having a legally binding national carbon pricing implementation roadmap and/or legally binding carbon intensity policies (implicit carbon pricing) should be a membership condition.
	Binding carbon neutrality roadmap with long-term strategies should be a membership condition.
	Legally binding plan of declining cap of emissions should be a membership condition (emission peak fixed in law for developing countries).
	Corporations active in the sectors handled by the Forum should be allowed as proactive members.
	The Forum should apply the **principle of subsidiarity** and be open to relevant subnational jurisdictions, especially in federal countries, when possible.
Link with the Paris Agreement	The Forum should also be registered under the **Article 6.8 of the Paris Agreement** (non-market approach).
Institution	The **OECD** could serve as an interim secretariat, prior to the establishment of a **proper institution to the Forum**.

	Recommendations 2: Pricing carbon ***The achievable establishment of a compliance mechanism in a climate Forum***
Carbon pricing	The Forum should be a cooperation platform upon which **member countries can work towards carbon pricing harmonization**.
	Club membership should initially be the vehicle to establish **commonly agreed MRV standards** between members of the club.
Linking of carbon pricing systems	Linking domestic carbon pricing policy **should optionally be the mid to long-term objective** of Forum membership, using Article 6.2 of the Paris Agreement. Willing and compatible jurisdictions should create a sub-group of the Forum as an harmonization tool aiming ETS linkage.
Carbon border adjustment	The Forum should recognize carbon price heterogeneity in the short-to mid-term and **become an instrument for cooperation on border carbon adjustment, without aiming at a common carbon border adjustment mechanism** for member countries.
	Each partner should implement carbon border adjustment at their own political pace, the **Forum should foster CBAM capacity-building among members**.
	Club membership should not exempt from carbon border adjustment among club members to account for carbon pricing differentiation. This creates an incentive to stringency to access CBAM-free the market of the most ambitious members.
Differentiated carbon border adjustment	The Forum should foster differentiated CBAM **rates between members established on calculated and comparable decarbonization effort (pricing or non-pricing measures) based on accurate and verifiable data**.
	In order to facilitate differentiation, the **Forum should enable comparability of members' pricing and non-pricing measures by fostering:** • Agreements on **measurement for carbon content of goods** (sectoral). • Agreement on **essential vs non-essential** goods covered. • Development of **sectoral green labels**.

	Recommendations 3: Labels and revenues ***The Financial and Trade incentives***
Incentive to join the club	Incentive comes from **the level of CBAM rate (discounted or not)**.
	The **availability of green labels**.
	Facilitate the Demand- and Consumption-based approach through the **better recognition of measurement of the carbon content of exported and imported goods**.
	Access to common green development projects.
Green labels	Foster the adoption of **sector-specific "green certificates" for companies from club members willing to adopt the highest carbon content standards for goods and export them CBAM-free throughout the club**.
	Resolve concerns about administrative burden by using the incentive for companies to be exempted from CBAM throughout the club.
	Green labels should be sectoral-based, allowing members to participate in some sectors but not others. This would allow a group of more advanced members to move forward more quickly together, without being slowed by the participation of less advanced partners.
Revenue-use and Climate finance	**Each partner should keep their own CBAM revenues recycled for climate actions domestically, or abroad through Forum initiatives**.
	Part of CBAM revenues could be mutualized between most integrated members to fund ambitious collaborative mitigation and adaptation projects sponsored by the Forum. In this sense, revenues could act as a strong incentive to join the Forum, especially for developing countries to access better climate finance.
Climate finance	To avoid green washing in climate finance, the **Forum should promote traceability and transparency of data across the Forum through agreed MRV standards**.
	The Forum should promote **greater understanding, consistency, and legal bindingness of green taxonomies**, particularly in sectors of cooperation.

	Recommendations 4: Industrial decarbonization ***Industrial policies in the club***
Sectoral approach for industrial decarbonization	The Forum should **enable greater cooperation in critical sectors of interest (steel, aluminum, hydrogen and clean energy) and allow members to choose the sectors in which they want to cooperate**.
	The Forum should establish technology availability roadmaps to identify points of collaboration and synergy.
	The Forum should **foster common understanding and experience-sharing for Green Transition Finance per sector**.
Level playing field for carbon neutral goods	The Forum should be a **negotiation platform for level playing field per sector**.
Green market formation	The Forum should **stimulate demand for carbon neutral goods** through common green procurement, and common investments.

Example 1 of members cooperation in the Forum:

Members involved	Sector of cooperation	Policy
European Union	**Cooperate on steel sector decarbonization**	Define a common decarbonization roadmap and standards for the steel sector.
China		Establish Green labels for carbon neutral steel.
South Korea		Enable green market formation measures: Green subsidies; green procurement.
Turkey		Exempt Carbon border adjustment for compliant steel products between these members.

Example 2 of members cooperation in the Forum:

Members involved	Sector of cooperation	Policy
European Union	**Cooperate on carbon pricing harmonization**	Establish MRV standards.
Canada		Agree on carbon price floor and roof.
South Korea		Agree on common standards for carbon offsets.
California (USA)		Prepare ETS Linkage.

Example 3 of members cooperation in the Forum:

Members involved	Sector of cooperation	Policy
European Union	**Carbon border adjustment**	Capacity-building on CBA.
Japan		Establish comparability methodology for carbon content of goods.
South Korea		Agree on essential vs non-essential goods.
USA		Agreement on comparability between explicit and implicit carbon pricing measures.

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REFERENCES

- BASIC (2021, April 08). Joint Statement issued at the conclusion of the 30th BASIC Ministerial Meeting on Climate Change hosted by India on 8th April 2021. *BASIC*. https://www.dffe.gov.za/mediarelease/basic_ministerialmeeting_climatechange_india
- Bloomberg. (2022, January 26). China's Xi Says Climate Targets Can't Compromise Energy Security. *Bloomberg*. https://www.bloomberg.com/news/articles/2022-01-26/xi-jinping-says-climate-targets-can-t-compromise-energy-security#xj4y7vzkg
- Bodansky, D., Hoedl, S., Metcalf, G., Stavins, R.N. (2016). Facilitating linkage of climate policies through the Paris outcome. *Climate Policy*, 16(8), 956-972.
- BRICS. (2022, May 15). Joint Statement of the BRICS High-Level Meeting on Climate Change. *BRICS*. https://www.mee.gov.cn/ywdt/hjywnews/202205/t20220515_982106.shtml *(In Chinese)*
- CarbonPulse (2017, December 15). China, Japan, Korea carbon market links resurface as talks set for next week. *CarbonPulse*. Available from: http://carbon-pulse.com/44890/
- CarbonPulse (2022, August 15). South Korea begins the process to improve ETS. *CarbonPulse*. https://carbon-pulse.com/169409/?utm_source=CP+Daily&utm_campaign=63dc8e2604-CPdaily15082022&utm_medium=email&utm_term=0_a9d8834f72-63dc8e2604-110242857
- ClimateWatchData. (2022). *GHG emissions Climate Watch Data Explorer* [Dataset] https://www.climatewatchdata.org/ghg-emissions?chartType=percentage&regions=WORLD&source=CAIT
- Chahim. M. (2022, March 31). United States lawmakers are at a CBAM tipping point. *Euractiv*. https://www.euractiv.com/section/energy-environment/opinion/united-states-lawmakers-are-at-a-cbam-tipping-point/
- Clean Energy Ministerial Platform (2022). Who we are [Website]. https://www.cleanenergyministerial.org/who-we-are/
- Climate Action Tracker. (2021, November). Warming Projection Global Update. https://climateactiontracker.org/documents/997/CAT_2021-11-09_Briefing_Global-Update_Glasgow2030CredibilityGap.pdf
- Dellatte, J., Rudolph, S. (2022). Understanding Barriers to Linking heterogeneous Emissions Trading Schemes: Evidence from and Lessons for Northeast Asia. Environmental Politics. https://www.tandfonline.com/doi/abs/10.1080/09644016.2022.2061776?journalCode=fenp20
- Dellatte, J. (2022, April 4). Russia-Ukraine: Short-Term Energy Security Doctrines, Long-Term Climate Damage?. *Institut Montaigne*. https://www.institutmontaigne.org/en/analysis/russia-ukraine-short-term-energy-security-doctrines-long-term-climate-damage

- Deng, Z., Li, D., Pang, T., Duan, M. (2018). Effectiveness of pilot carbon emissions trading systems in China. *Climate Policy*. https://www.tandfonline.com/doi/abs/10.1080/14693062.2018.1438245
- Edmonds, J., Yu, S., Mcjeon, H., Forrister, D., Aldy, J., Hultman, N., Cui, R., Waldhoff, S. (2021). How much could Article 6 enhance nationally determined contribution ambition toward Paris Agreement goals through economic efficiency?. *Climate Change Economics*, 12(2), https://www.worldscientific.com/doi/full/10.1142/S201000782150007X
- Elkerbout, M., Bryhn, J., Righetti, E., Chapman, F. (2022). From carbon pricing to climate clubs: How to support global climate policy coordination towards climate neutrality (RR2022-01 CEPS Research Report) https://www.ceps.eu/ceps-publications/from-carbon-pricing-to-climate-clubs/
- European Commission. (2019). Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions (The European Green Deal). *COM*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN
- European Commission. (2021, Novembre 2). *France, Germany, UK, US and EU launch ground-breaking International Just Energy Transition Partnership with South Africa*. European Commission press release. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_5768
- European Commission (2021, July 14) Explanatory Memorandum of the Proposal for a Regulation of the European Parliament and the Council establishing a carbon border adjustment mechanism. *European Commission*. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021PC0564&rid=9
- European Commission (2022, January). Common Ground Taxonomy – Climate Change Mitigation. (Instruction report of the International Platform on Sustainable Finance, Taxonomy Working Group). https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/211104-ipsf-common-ground-taxonomy-instruction-report-2021_en.pdf
- European Commission (2020, March 3). A new industrial strategy for Europe. European Commission communication. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0102&from=IT
- European Commission (2022, May). EU Solar Energy Strategy. *European Commission*. https://energy.ec.europa.eu/topics/renewable-energy/solar-energy_en
- EUCO. (2022, June). *Fit for 55*. European Council. https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/
- EUCO. (2022, March 15). *Draft regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism*. Council of the European Union. https://data.consilium.europa.eu/doc/document/ST-7226-2022-INIT/en/pdf
- European Parliament. (2022, May 17). CBAM: MEPs push for higher ambition in new carbon leakage instrument. *European Parliament News*. https://www.europarl.europa.eu/news/en/press-room/20220516IPR29647/cbam-meps-push-for-higher-ambition-in-new-carbon-leakage-instrument
- Falkner, R. (2016). A minilateral solution for global climate change? On bargaining efficiency, club benefits, and international legitimacy. *Perspectives on Politics*, 14(01). 87–101.
- Falkner, R., Nasiritousi, N., Reischl, G. (2021). Climate clubs: politically feasible and desirable?. *Climate Policy*. DOI: 10.1080/14693062.2021.1967717
- Green Belt and Road Initiative Center. (2022). Belt and Road Initiative International Green Development Coalition (BRIGC) [Website]. https://green-bri.org/belt-and-road-initiative-green-coalition-brigc/
- Hermwille, L ., Lechtenbohmer, S., Ahman, M., van Hasselt, H., Bataille, C., Kronshage, S., Tonjes, A., Fischedick, M.,Oberthur, S., Garg, A., Hall, C.,Jochem, P., Schneider, C., Cui, R., Obergassel, W., Fragkos, P., Sudharmma, Vishwanathan, S., Trollip, H. (2022). A Climate club to decarbonize the global steel industry. *Nature climate change*. (12), 495-496. https://www.nature.com/articles/s41558-022-01383-9
- Hufbauer, G., Kim, J., Schott, J. (2021, Novembre). Can EU Carbon Border Adjustment Measures propel WTO climate talks?. (Policy Brief 21-23 of the Peterson Institute for International Economics). https://www.piie.com/reader/publications/policy-briefs/can-eu-carbon-border-adjustment-measures-propel-wto-climate-talks
- ICAP. (2022). *Allowance Price Explorer*. [Dataset]. https://icapcarbonaction.com/en/ets-prices
- IEA (2022, July 7). The world needs more diverse solar panel supply chains to ensure a secure transition to net zero emissions. *IEA press release*. https://www.iea.org/news/the-world-needs-more-diverse-solar-panel-supply-chains-to-ensure-a-secure-transition-to-net-zero-emissions
- Keohane, R. O., Victor, D. G. (2016). Cooperation and discord in global climate policy. *Nature Climate Change*, 6(6), 570–575.
- IIGF. (2022, July 26). Response to the EU Carbon Border Regulator: Specifics, Implementation Implications and Policy Implications. IIGF. https://iigf.cufe.edu.cn/info/1012/5592.htm *(In Chinese)*.
- Kardish, C., Li, L., Hellmich, M., Duan, M., Tao, Y. (2021). The EU carbon border adjustment mechanism (CBAM) and China: unpacking options on policy design, potential responses, and possible impacts. *Adelphi*. https://www.adelphi.de/en/system/files/mediathek/bilder/20210610%20PolicyPaperCBAM%20China_Final.pdf

- Korean Government. (2022, May 02). The 110th priority of the Yun Seok Yeul Government. *Korean Presidential Transition Committee*. https://www.korea.kr/archive/expDocView.do?docId=39973 *(In Korean)*.
- Lamb, K., Budiman, Y. (2022, August 31). G20 climate talks in Indonesia fail to agree communique. *Reuters*. https://www.reuters.com/business/environment/g20-host-indonesia-urges-cooperation-tackle-global-climate-issues-2022-08-31/
- Liu, J., Ding, L. (2022, August 15). Solar Panels Piling Up at US Border on Xinjiang Forced Labor Law. *Bloomberg*. https://www.bloomberg.com/news/articles/2022-08-15/solar-panels-piling-up-at-us-border-on-xinjiang-forced-labor-law#xj4y7vzkg
- Martin, N., van den Bergh, J. (2019). A multi-level climate club with national and subnational members: theory and application to US states. *Environmental Research*. Letters. 14 124049
- Masson-Delmotte, V. et al. (2021). Summary for Policymakers - Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. *Intergovernmental Panel on Climate Change (IPCC)*. https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/ (accessed 17 January 2022)
- MEE. (2021, July 26). Ministry of Ecology and Environment press conference report. *MEE*. https://www.mee.gov.cn/ywdt/zbft/202107/t20210726_851421.shtml *(In Chinese)*.
- Mehling, M. (2021, October). Advancing international cooperation under the Paris Agreement: Issues and Options for Article 6 (Harvard Project on Climate Agreements discussion paper ES 21-10). https://www.belfercenter.org/publication/advancing-international-cooperation-under-paris-agreement-issues-and-options-article-6
- METI. (2021, October). Technology Roadmap for “Transition Finance” in Iron and Steel Sector. *METI*. https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_technology_roadmap_iron_and_steel_eng.pdf
- METI. (2022, February). Technology Roadmap for Power Sector. *METI*. https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_technology_roadmap_power_eng.pdf
- METI (2022, February). *GX League announcements*. METI. https://www.meti.go.jp/press/2021/02/20220201001/20220201001.html *(In Japanese)*.
- METI. (2022, March). Towards a transition to decarbonization – Transition Finance. *METI*. https://www.meti.go.jp/english/policy/energy_environment/transition_finance/index.html
- METI. (2022, March). Technology Roadmap for “Transition Finance” in the cement Sector. *METI*. https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_technology_roadmap_cement_eng.pdf

- METI. (2022, June 27). METI Priorities Based on the 2022 Report on Compliance by Major Trading Partners with Trade Agreements. *METI*. https://www.meti.go.jp/english/press/2022/pdf/220627_2022report03.pdf
- METI (2022, September).GX League. *METI*. https://www.meti.go.jp/press/2021/02/20220201001/20220201001.html *(In Japanese)*.
- MIIT (2022, February 7). Guidance from three departments on promoting high-quality development of the iron and steel industry. *MIIT*. https://www.miit.gov.cn/jgsj/ycls/gt/art/2022/art_368e1aae99704e9281a618dc73c046f7.html *(In Chinese)*.
- MIIT (2022, July 7). Implementation plan for carbon peaking in the industrial sector. *MIIT*. https://www.miit.gov.cn/jgsj/jns/gzdt/art/2022/art_59b-70d1b1a3344ed93de623da118ee9e.html *(In Chinese)*.
- Michaelowa, A., Censowsky, P., Peterson, S., Stua, M., Brandi, C., Nolden, C., Banning, T., Fung, M., Venzke, I. (2022, March). Towards an Inclusive climate alliance with a balance of carrots and sticks. (Policy brief of the T7 Task Force Climate and Environment). https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjL48v7wr-n5AhVNSxoKHRasBIoQFnoECAoQAQ&url=https%3A%2F%2Fora.ox.ac.uk%2Fobjects%2Fuuid%3A20e37dc7-9e70-4a6e-89e2-110e19412d3a%2Ffiles%2Fs3n204027s&usg=AOvVaw1QNMWojnNGTumunzYSj5YL
- MOEJ (2018, September 20). Holding of the Trilateral Carbon Pricing Mechanism Forum. *Ministry of the Environment of Japan*. https://www.env.go.jp/press/105982.html *(In Japanese)*.
- MOEK (2021, December). Korean Green Taxonomy. *Ministry of the Environment of the Republic of Korea*. https://www.me.go.kr/home/web/policy_data/read.do;jsessionid=6ohRKyjJFhk2TevGcXf37ovs.mehome1?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=92&orgCd=&condition.toInpYmd=null&condition.fromInpYmd=null&condition.orderSeqId=7638&condition.rnSeq=135&condition.deleteYn=N&condition.deptNm=null&seq=7853 *(In Korean)*.
- MOEK (2022, March). *Carbon neutrality Framework Act*. Ministry of the Environment of the Republic of Korea. https://www.law.go.kr/법령/기후위기대응을위한탄소중립ㆍ녹색성장기본법/(18469,20210924) *(In Korean)*.
- NDRC. (2021, April). *PBC, NDRC and CSRC Issue the Green Bond Endorsed Projects Catalogue (2021 Edition)*. NDRC. http://www.gov.cn/zhengce/zhengceku/2021-04/22/content_5601284.htm *(In Chinese)*.
- Nordhaus, W. (2015). Climate Clubs: Overcoming Free-Riding in International Climate Policy. *American Economic Review*, 105 (4). 1339-70.
- OECD. (2022). *Climate Change Expert Group* [Website]. https://www.oecd.org/env/cc/ccxg/

- Oliu-Barton, M., Tagliapietra, S. (2022, August 9). Climate club 'green certificate' would boost membership. *Nature* (Correspondence).https://www.nature.com/articles/d41586-022-02128-6
- Overland, I., Huda, M, S. (2022). Climate clubs and Carbon border adjustment: a review. *Environmental Research Letters*, 17. https://doi.org/10.1088/1748-9326/ac8da8
- Paroussos, L., Mandel, A., Fragkiadakis, K., Fragkos, P., Hinkel, J., Vrontisi, Z. (2019). Climate clubs and the macro-economic benefits of international cooperation on climate policy. *Nature Climate Change*, 9(7). 542–546.
- Paugam, J. (2021, Septembre 13). DDG Paugam: WTO rules no barrier to ambitious environmental policies. *WTO News*. https://www.wto.org/english/news_e/news21_e/ddgjp_16sep21_e.htm
- Pihl, K. (2020). A Climate Club as a complementary design to the UN Paris agreemen. *Policy Design and Practice*, 3:1, 45-57, DOI: 10.1080/25741292.2019.1710911
- Rudolph, S., Aydos, E. (2021). *Carbon Markets Around the Globe – Sustainability and Political Feasibility* (Ch 2). Edward Elgar Publishing.
- Schonhardt, S. (2022, January 10). Climate clubs: Secret handshakes, CO_2 prices and exclusivity. *EE ClimateWire*. https://www.eenews.net/articles/climate-clubs-secret-handshakes-co2-prices-and-exclusivity/
- Sforna, G. (2019). Climate change and developing countries: from background actors to protagonists of climate negotiations. I*nternational Environmental Agreements: Politics, Law and Economics*, 19(3). 273.
- Stua, M. (2017). Climate clubs and their relevance within the Paris agreement. In M. Stua (Ed.). *From the Paris agreement to a low carbon bretton woods* (pp. 31-47). Springer.
- Suk-Yee, J. (2021, July 15). Carbon Border Tax Not Targeting South Korea, EU Says. *BusinessKorea*. http://www.businesskorea.co.kr/news/articleView.html?idxno=71790
- Swatrz, J. (2018). *Building the foundation for regional Carbon Market Linkage in Northeast Asia. In Carbon Market Cooperation in Northeast Asia*. Asia Society Policy Institute. NewYork, USA.
- Tagliapietra, S., Wolff, G. (2021). Form a climate club: United States, European Union and China. *Nature*, 591(7851). 526–528.
- Tagliapietra, S. & Goldthau, A. (2022, January 11). How an open climate club can generate carbon dividends for the poor. *Bruegel*. https://www.bruegel.org/comment/how-open-climate-club-can-generate-carbon-dividends-poor
- Titievskaia, J., Morgado Simões, H., Dobreva, A. (2022, July). EU carbon border adjustment mechanism Implications for climate and competitiveness. (Eu legislation process brief of the European Parliamentary Research Service). https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698889/EPRS_BRI(2022)698889_EN.pdf
- UNEP. (2021, October). *Emissions Gap Report*. https://www.unep.org/resources/emissions-gap-report-2021
- UNFCCC (2021). *Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement*. https://unfccc.int/sites/default/files/resource/cma3_auv_12a_PA_6.2.pdf
- Unger, C., Mar, A., K., Gurtler, K. (2020). A club's contribution to global climate governance: the case of the Climate and Clean Air Coalition. *Nature Humanities and Social sciences communications*, 6 (99). https://www.nature.com/articles/s41599-020-0474-8
- Vangenechten, D., Lehne, J., (2022, Feb). Can a climate club accelerate Industrial Decarbonisation towards more international cooperation in the decarbonization of heavy industry. (Briefing Paper of E3G of February 2022). https://www.e3g.org/publications/can-climate-clubs-accelerate-industrial-decarbonisation/
- World Bank. (2022). State and Trends of Carbon Pricing. *World Bank*. https://openknowledge.worldbank.org/handle/10986/37455
- World Bank. (2022). Carbon Pricing Dashboard. [Dataset]. https://carbonpricingdashboard.worldbank.org/map_data
- WTO. (2022). *Committee on Trade and Environment* [Website]. https://www.wto.org/english/tratop_e/envir_e/wrk_committee_e.htm
- WTO. (2022). Trade and Environmental Sustainability Structured Dialogue [Website]. https://www.wto.org/english/tratop_e/tessd_e/tessd_e.htm
- Xu, M., Stanway, D. (2022, March 15). China slams firms for falsifying carbon data. *Reuters*. https://www.reuters.com/world/china/china-slams-firms-falsifying-carbon-data-2022-03-14/
- Yue, H., Lu, K., Du, X. (2022, June 20). Xie Zenhua talks about tackling climate change. *Caixin*. https://weekly.caixin.com/2022-06-17/101900245.html?p0#page2 *(In Chinese)*.

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Welcome to the Climate Club: Prospects for Europe and East Asia

Today's geopolitical landscape is complicating multilateral climate negotiations, calling into question countries' ability to continue to accelerate their climate transition. Discussions are currently underway at the G7 level regarding the creation of a climate club bringing together countries willing to accelerate the international race toward carbon neutrality. The role played by Northeast Asia – the world's largest emitting region – is at the heart of these discussions. This research paper analyzes the positions of more than 70 European, Japanese, Korean, and Chinese high-level stakeholders on the issue of a climate club. Based on this analysis, the paper offers a series of recommendations for the creation of an open "Climate Forum" through the G7 initiative.

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