



**NDC ASPECTS**

## **Policy Brief**

**Advancing international cooperation for the decarbonisation of energy-intensive industries: the G7 Climate Club and beyond**

Issue #03 / April 2023

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NDC ASPECTS has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 101003866





## Key messages

- International cooperation holds great potential to advance the global decarbonisation of energy-intensive industries (EIs). However, despite existing far-reaching international cooperation this potential remains underexploited. Major gaps remain regarding (1) harmonised standards for near-zero emissions basic materials, (2) related lead markets, (3) sufficient means for technology development and transfer, (4) rules addressing international competition and carbon leakage, and (5) orchestration of existing activities.
- Existing institutions hold significant potential to address the gaps of lead markets and means as well as, to a lesser extent, harmonised standards and orchestration. However, they lack the needed institutional capacity and legitimacy to address competition and carbon leakage or ensure a near-universal harmonisation of standards.
- The proposed G7 Climate Club holds further potential to advance international cooperation on harmonised standards, lead markets and orchestration. However, its narrow membership and limited legitimacy constrain its effectiveness, while clear incentives for other countries to join are lacking. These shortcomings can be addressed by especially reaching out to emerging and developing countries with an established interest in international cooperation on industrial decarbonisation, explicitly addressing equity issues, making clear financing commitments and providing access to lead markets.
- Neither existing institutions nor the Climate Club have the required institutional capacity or legitimacy to address competition and carbon leakage. Whereas bi- or plurilateral cooperation holds some potential, the current geopolitical context might render broader international cooperation on carbon leakage politically unfeasible. To put EIs on track for near-zero emissions by mid-century, enhancing and deepening cooperation on the other gaps should therefore be prioritised.

The deep decarbonisation of energy-intensive industries (EIs) by mid-century is essential to achieve the objectives of the Paris Agreement. EIs producing basic materials such as steel, cement, chemicals or aluminium are responsible for around 17% of global greenhouse gas (GHG) emissions and are expected to decarbonise slower than other sectors (Bashmakov et al., 2022). Achieving near-zero emissions in EIs by mid-century is technologically possible but hampered by substantial economic, structural and policy barriers. The most crucial barriers are the limited market availability of near-zero emission technologies, high investment and operational costs, long investment cycles inherent to EIs, strong global competition and carbon leakage concerns, the limited availability of zero-emission energy carriers, and the infrastructure required to enable decarbonisation (van Sluisveld et al., 2021). International cooperation holds great potential to address these barriers and advance the decarbonisation of EIs, given the globalised nature of the sector (Oberthür et al., 2021). Although international cooperation on industrial decarbonisation has advanced significantly over the past years, this potential remains underexploited.

This policy brief explores institutional options to advance the global governance of the decarbonisation of EIs. It argues that existing international institutions as well as the newly proposed G7 Climate Club can address key remaining governance gaps, although not all of them, and offers recommendations to this end. The policy brief is based on an extensive analysis of the global governance for the decarbonisation of EIs conducted as part of the NDC ASPECTS project (see Otto & Oberthür, 2022).



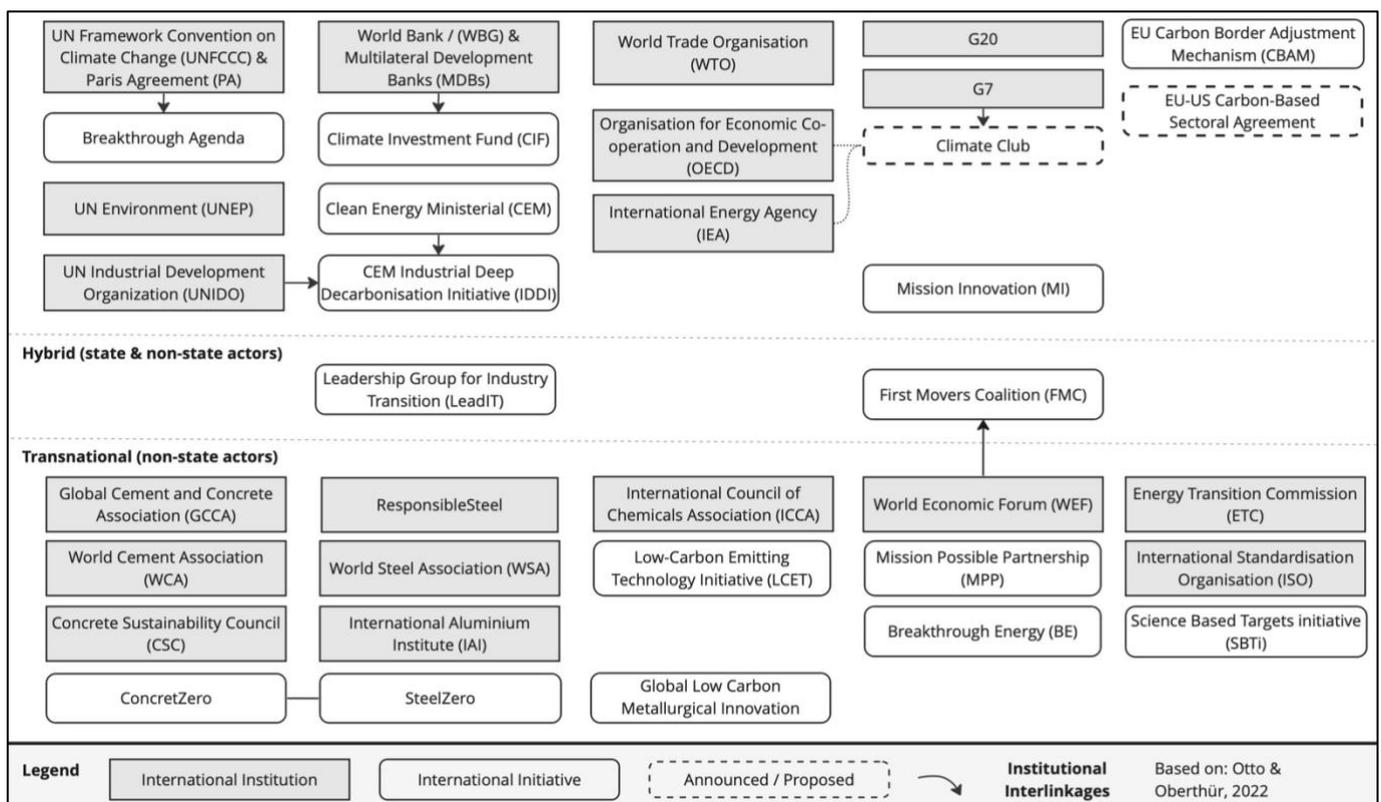
## Potential and state of international cooperation

International institutions can facilitate international cooperation through six governance functions, namely signal and guidance, rules for collective action, transparency and accountability, means of implementation, knowledge and learning as well as orchestration and coordination of existing efforts (Oberthür et al., 2021).

A mapping of the landscape of international cooperation on the decarbonisation of EILs delivers more than 30 international institutions and initiatives that actively contribute to at least one of these functions (Figure 1) and are increasingly tapping into the potential of international cooperation as shown in Table 1. The global governance of decarbonising EILs is very dynamic, with more than half of the institutions and initiatives identified forming new additions since 2019. This dynamic is further driven by increasing cooperation among these institutions as well as significant overlap of country membership, including G7 and European Union (EU) members as well as India, South Africa, and Brazil, among others (Otto & Oberthür, 2022).

Taken together, existing international cooperation is contributing significantly to driving the decarbonisation of EILs. Nevertheless, as shown in Table 1 **several global governance gaps remain**, leaving the full potential of international cooperation to accelerate the decarbonisation of EILs underexploited.

Figure 1: Global Governance Landscape for the Decarbonisation of EILs



**Table 1: Supply of international cooperation on decarbonising EIs and remaining gaps**

Function	Existing Supply	Remaining Gaps
Signal & Guidance	<ul style="list-style-type: none"> <li>● General decarbonisation goals of Paris Agreement</li> <li>● Sectoral &amp; industry visions/pathways</li> </ul>	<ul style="list-style-type: none"> <li>■ Authoritative vision breaking down Paris Agreement objective for EIs</li> </ul>
Rules & Policies	<ul style="list-style-type: none"> <li>● Standards for near-zero emission basic materials</li> <li>● Public &amp; private procurement</li> <li>● Emerging policy coordination</li> </ul>	<ul style="list-style-type: none"> <li>■ Harmonisation of standards</li> <li>■ Enhance international lead markets</li> <li>■ Rules addressing competition &amp; carbon leakage</li> </ul>
Transparency & Accountability	<ul style="list-style-type: none"> <li>● Emissions reporting &amp; certification</li> <li>● Review of global progress</li> </ul>	<ul style="list-style-type: none"> <li>■ Strengthen emissions monitoring</li> </ul>
Means of Implementation	<ul style="list-style-type: none"> <li>● Finance for mitigation &amp; Capacity building</li> <li>● Finance for technology development</li> <li>● Infrastructure development</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase finance for technology development</li> <li>■ Finance for technology deployment &amp; diffusion</li> <li>■ Engineering capacity</li> </ul>
Knowledge & Learning	<ul style="list-style-type: none"> <li>● Analysis, data, best practices &amp; pathways</li> <li>● Stakeholder collaboration</li> </ul>	
Orchestration & Coordination	<ul style="list-style-type: none"> <li>● Emerging orchestration &amp; collaboration of relevant institutions and non-state actors</li> </ul>	<ul style="list-style-type: none"> <li>■ Orchestration of bigger picture</li> <li>■ Coordination on means and rules</li> </ul>

*See Otto & Oberthür (2022) for full analysis.*

Of the remaining governance gaps identified, particularly five key gaps need to be addressed in a timely manner to put the sector on track to reach near-zero emissions by mid-century by 2030:

- (1) Internationally **harmonised standards for decarbonised basic materials** to determine common benchmarks on emission intensity of basic materials, a pre-condition for implementing (common) policies.
- (2) **International lead markets** to foster global demand for decarbonised basic materials despite higher prices.
- (3) Lack of **means of implementation** for the development of technologies and technology transfer to emerging and developing economies to ensure global market availability by 2030s.
- (4) Rules to address **international competition** and avoid **carbon leakage** despite ambitious climate policies.
- (5) **Orchestration** of the governance landscape to exploit synergies and identify and address gaps.

## The potential of existing international institutions

To advance international cooperation on EII decarbonisation, relevant institutions need the right membership, sufficient institutional capacity, and high legitimacy, and its required action must be politically feasible (Otto & Oberthür, 2022). Considering this, existing institutions can be developed to address the key gaps of means of implementation, international lead markets, orchestration and, to a more limited extent, harmonised standards.

The lack of **means of implementation** can be addressed by scaling-up existing international finance and investment channels. Initiatives such as the Leadership Group for Industry Transition (LeadIT) or Mission Innovation can be strengthened to enhance technology development, since they already have the required institutional capacity and its members possess the means to strengthen the financing for technology transfer to emerging and developing economies, which is key for the global transformation of EIs. International financial institutions such as the Green Climate Fund (GCF), the World Bank and Multilateral Development Banks (MDBs), or the Climate Investment Fund (CIF) provide existing vehicles to scale up finance. These institutions can also establish moratoriums on (re-)investing in EII facilities above a certain emission threshold (Hermwille et al., 2022). In addition, bi- or plurilateral

cooperation can provide finance for the decarbonisation of EIs in specific countries, following the model of Just Energy Transition Partnerships (JETPs).

Similarly, ongoing efforts **to create international lead markets** for decarbonised basic materials can be expanded, such as the Industrial Deep Decarbonisation Initiative (IDDI) or the First Movers Coalition (FMC). They can actively foster new procurement commitments for existing initiatives (i.e. on steel and cement) and/or expand their activities to new industries (i.e. on chemicals). To **harmonise standards** for decarbonised basic materials, state-led institutions and initiatives, such as the G7 or G20, IDDI, or the OECD, can endorse or agree on common standards. Similarly, international financial institutions (e.g. GCF, CIF) can include near-zero emission standards in their financing requirements. However, existing institutions lack the legitimacy and/or the membership required to establish near-universally accepted standards, limiting the potential of existing institutions to address this gap.

The UNFCCC, being the most central and authoritative institution in the global climate governance landscape, has the potential to provide high-level **orchestration**. As part of the Paris Agreement's Global Stocktake, it can review the coherence of ongoing sectoral governance efforts with its objectives and identify synergies and gaps. It can also provide high-level guidance and endorsement of specific activities in COP decisions or through sectoral initiatives, including a potential Climate Club. The UNFCCC can also provide sector-specific **signal and guidance** through EII-specific decarbonisation visions, building on the Marrakesh Partnership or the Breakthrough Agenda.

By contrast, existing institutions lack the necessary institutional capacity and legitimacy to address **international competition** and **carbon leakage**. Emerging unilateral measures to address carbon leakage, such as the EU Carbon Border Adjustment Mechanism (CBAM), might provide a stepping-stone for bi- or plurilateral cooperation (Mehling et al., 2022). However, contemporary geopolitical competition and rivalry among countries key to the decarbonisation of EIs sharply limits the feasibility of broader governance on competition and carbon leakage. Efforts to enhance international cooperation may therefore best focus on filling the other identified gaps (Falkner et al., 2022).

## The Climate Club: potential and shortcomings

The creation of a new institution could help to address the identified governance gaps more fully. In December 2022, the G7 decided to establish an “open, cooperative and inclusive Climate Club (..) to support the effective implementation of the Paris Agreement” with an initial focus on “unlocking potential for the decarbonisation of hard-to-abate industrial sectors” (Germany, 2022). The G7 Climate Club is the most concrete and ambitious new initiative on the table. It is expected to be fully launched towards COP28 in 2023 and will be built on three pillars: (1) advancing ambitious and transparent climate change mitigation policies, (2) transforming industries, and (3) boosting international climate cooperation and partnerships. An informal Task Force was set up to further support the development of the Club and discuss the details of the arrangement, which is to be co-chaired by Germany and a potential non-G7 country.

Although subject to ongoing negotiations, the proposed Club activities have the potential to address several but not all of the key gaps as shown in Table 2. First, **harmonised standards** among Club members would be a step in the right direction, but the acceptance (and ultimate application) of standards beyond the Club will depend on its perceived legitimacy and the market share of basic material demand of its members.

Table 2: Potential of the Climate Club to address key governance gaps

Key Gap	The potential supply of the Climate Club
Harmonised Standards	› Find common definitions for near-zero emission materials and accounting standards, incl. common accounting system for hydrogen GHG footprints
Lead Markets	› Promote markets for near-zero GHG emissions materials › Cooperation on enabling policies for making decarbonised industrial production default business case.
Means of Implementation	› Cooperation on enabling conditions for large-scale investments in RD&D, innovation and infrastructure. › Voluntary bilateral support for developing countries, incl. capacity building, cooperation and technology transfer
Competition & Carbon leakage	› Strategic dialogue on industrial carbon leakage mitigation & green growth, incl. exploration of potential cooperation
Orchestration	› High-level forum for alignment of existing cooperation and how to address developing countries' needs › Platform for matchmaking and creating synergies between cooperation and funding instruments

*Based on the 'Terms of Reference for the Climate Club' (see Germany, 2022)*

Second, regarding **lead markets**, the G7 alone could trigger a significant market-pull effect, increasing further with broader membership (IEA, 2022). Third, as a 'high-level forum' the Club can **orchestrate** the existing governance landscape, at least for institutions with overlapping membership (e.g. IDDI). On **means of implementation** and **carbon leakage**, however, the emerging Club lacks concrete ideas for progress, with the proposed 'strategic dialogue' at best providing a stepping-stone for further bi- or plurilateral cooperation.

In general, the potential of the proposed Climate Club to drive the global decarbonisation of EIs is considerably constrained by limits of its membership, legitimacy and political feasibility. First, the **membership** of the G7 as well as other current and future major EI producers such as China, India, Indonesia, South Africa, Brazil, and Saudi Arabia (among others) is essential to advance the decarbonisation of EIs. Accordingly, the inclusion of "interested major emitters, G20 partners and other developing partners and emerging economies" in the Task Force is foreseen to discuss the Club's further development (Germany, 2022). India, Brazil, South Africa and others are already actively involved in international cooperation on decarbonising EIs. However, few countries beyond the G7 have so far signalled interest in joining. While membership could also grow over time, G7-only participation would limit the Club's legitimacy and its potential to drive the global decarbonisation of EIs.

Second, to successfully harmonise standards and orchestrate the governance landscape, the club requires a high degree of **legitimacy** and authority as perceived by others (Bäckstrand et al., 2018). Legitimacy in turn requires a broad and inclusive membership base, adequately addressing the issue of equity of decarbonisation efforts in a South-North context and ensuring the consistency of the Club with other international agendas such as the Paris Agreement. In this respect, the planned co-chairing of the Task Force by a non-G7 country is only a good first step. Beyond that, determined efforts are needed to ensure that the Club is not just an industrialised country project.

Finally, the **political feasibility** of establishing an effective Club not least depends on the provision of sufficient incentives for emerging economies to join. Whereas political leadership exists and a pathway towards establishing the Club has been charted out, the **incentives** for emerging economies to join likely remain insufficient. Under conditions of increasing geopolitical competition, they seem to be limited to participation in designing the framework conditions for decarbonising EIs and potential lead markets.

## Recommendations

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- Several options exist to **exploit the potential of existing institutions** more fully:
  - Scale-up of means of implementation, incl. technology transfer to emerging and developing economies.
  - Scale-up and expansion of international lead-market initiatives such as IDDI and FMC.
  - Harmonisation of standards across initiatives with overlapping membership (e.g. IDDI, Mission Innovation, LeadIT, FMC).
  - High-level review and orchestration of the sectoral landscape, especially through the UNFCCC and the Paris Agreement's Global Stocktake.
- To **address the shortcomings of the Climate Club proposal** on membership, legitimacy and political feasibility the following can be undertaken:
  - To broaden the Club's membership, the G7 can specifically target countries already actively involved in international cooperation on EIs decarbonisation, such as India, South Africa, Indonesia, or Brazil.
  - Clear commitments by G7 countries on finance for technology cooperation and transfer, privileged access to lead markets, and a more proactive consideration of equity issues can enhance the incentive for non-G7 countries to join.
  - Ensuring the consistency of the Climate Club with the broader objectives and processes of the UNFCCC and the Paris Agreement and avoiding duplication of existing international cooperation efforts can also strengthen legitimacy.
- Reinforced by increased geopolitical competition and rivalry, neither existing institutions nor the Climate Club as proposed offer much potential to address competition and carbon leakage. Therefore, focusing international cooperation on addressing the other key gaps appears to be most sensible in the short to medium term.

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## POLICY BRIEF

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NDC ASPECTS has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 101003866

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