



# NDC ASPECTS

## **D6.3 – Report and academic article manuscripts on sectoral climate clubs (one on the political economy of sectoral climate clubs, and one on the modelling results)**

WP6 – Global Governance and International Cooperation

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March 2024

[www.ndc-aspects.eu](http://www.ndc-aspects.eu)

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

## D6.3 – Report and academic article manuscripts on sectoral climate clubs

NDC ASPECTS PROJECT & DELIVERABLE PROFILE	
Project Acronym and Full Name:	NDC ASPECTS – Assessing Sectoral Perspectives on Climate Transitions to support the Global Stocktake and subsequent NDCs
Grant Agreement No.:	101003866
Programme:	H2020-EU.3.5.1. – Fighting and adapting to climate change
Topic:	LC-CLA-10-2020 – Scientific support to designing mitigation pathways and policies
Funding Type:	RIA - Research and Innovation action
Deliverable:	D6.3 – Report and academic article manuscripts on sectoral climate clubs (one on the political economy of sectoral climate clubs, and one on the modelling results)
Work Package:	WP6 – Global Governance and International Cooperation
Deliverable Due Date:	Project month 30 (30/10/2023)
Actual Date of Submission:	13/03/2024
Dissemination Level:	Public
Lead Beneficiary:	UEF
Responsible Author:	Lukas Hermwille (WI) and Catherine Hall (UEF)
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### Preface

The NDC ASPECTS project will provide inputs to the Global Stocktake under the Paris Agreement (PA) and support the potential revision of existing Nationally Determined Contributions (NDCs) of the PA's parties, as well as development of new NDCs for the post 2030 period. The project will focus on four sectoral systems that are highly relevant in terms of the greenhouse gas emissions they produce yet have thus far made only limited progress in decarbonization. To advance these transformations will require to understand and leverage the Eigenlogic of those systems and take into account specific transformation challenges. These sectors are transport & mobility (land-based transport and international aviation & shipping), emission intensive industries, buildings, and agriculture, forestry & land-use, including their supply by and interaction with the energy conversion sector.

### 1. Changes with respect to the DoA

Overall, the deliverable was largely executed in line with the original Description of Work (DoW). However, while a quantitative analysis focused specifically on climate clubs was originally proposed, we have deviated slightly from this. This decision was the result of recent geopolitical developments which provided the opportunity to develop an analysis more relevant to current political developments. In doing so, we aim to achieve a broader impact than we likely would have in our original proposal, which had an exclusive and narrow focus on climate clubs. While the idea of a climate club is not the explicit or sole focus of our analysis, the 'transatlantic friendshoring scenario' that is included in the quantitative manuscript is nevertheless reminiscent of the climate club idea.

In addition, we have also deviated slightly from the original DoW with respect to the qualitative manuscript, which originally proposed a concrete focus on and exploration of three potential sectoral climate clubs. Instead, we draw on three existing climate clubs, namely the Climate Club launched at COP28 in December 2023, the Clean Energy Ministerial (CEM), and the proposed EU-US Global Arrangement on Sustainable Steel and Aluminium. This decision was the result of current international policy developments in the climate clubs landscape. In doing so, we aim to achieve results that relate to current political developments, thereby producing a more relevant analysis with broader impact. Nevertheless, each of the chosen case studies do have a specific focus on certain sectors. The Climate Club has a concrete focus on decarbonising industry, the proposed GASSA has a concrete focus on decarbonising the steel and aluminium sectors, and the CEM explicitly works on advancing clean energy.

### 2. Dissemination and uptake

As detailed in the DoW and the project's Communication, Dissemination and Exploitation Plan, the deliverable will be made available on the project website and advertised via the project's newsletter and social media channels. Additionally, the qualitative manuscript has been submitted to the journal *Review of European, Comparative & International Environmental Law*, and the quantitative manuscript will be submitted to the journal *Nature Climate Change*. Both will be made available in Open Access. The two articles are:

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- › Hall, C. (2024, forthcoming). Towards unilateral climate governance? Analysing climate club design options through the lens of CBDR-RC. Submitted to: *Review of European, Comparative & International Environmental Law*.
- › Hermwille, L., Fragkos, P., & Fragkiadakis, K. (2024, forthcoming). A Race at All Costs? Economic and Environmental Effects of Industrial Policy Nationalism. To be submitted to: *Nature Climate Change*.

Relevant work was presented at the following events:

- › IUCN AEL Colloquium 2023 conference, Joensuu, Finland (in-person presentation), 3 August 2023, <https://sites.uef.fi/iucn-ael-2023/programme/>
- › Centre for Climate Change Law and Governance Seminar Series, Copenhagen, Denmark, 28 September 2023, <https://jura.ku.dk/cilg/calendar/past-events/>

In addition to the manuscripts, three milestone outputs developed in the context of the deliverable were produced, focused on sectoral climate clubs (MS51). This includes a comment published in the journal *Nature Climate Change* on a climate club for the steel industry, a policy paper on a climate club for the plastics industry, and a policy brief on strengthening the Breakthrough on Road Transport:

- › L, Hermwille., Lechtenböhrer, S., Åhman, M., van Asselt, H., Bataille, C., Kronshage, S., Tönjes, A., Fischedick, M., Oberthür, 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, 494-496. <https://doi.org/10.1038/s41558-022-01383-9>
- › Hermwille, L., & Diek, A. (2023). Contours of an International Plastics Climate Club. *NDC ASPECTS Policy Paper*. [https://ndc-aspects.eu/sites/default/files/2023-11/20230929\\_NDC%20ASPECTS\\_Plastic%20Club\\_final.pdf](https://ndc-aspects.eu/sites/default/files/2023-11/20230929_NDC%20ASPECTS_Plastic%20Club_final.pdf)
- › Hall, C. (2023). Accelerating towards Zero-Emission Vehicles: Options for Strengthening the Breakthrough on Road Transport. *NDC ASPECTS Policy Brief*. <https://ndc-aspects.eu/sites/default/files/2023-11/Breakthrough%20Road%20Transport%20Final%20Version.pdf>

The deliverable will be of use to different groups of stakeholders:

- › The study is of particular relevance for national policymakers, especially those involved in and championing climate clubs, who can gain insights on how to design climate clubs for maximum effectiveness and draw on the results concerning the possible implications that they may raise in practice
- › More generally, the results that this study yields provide an important contribution to academic and scholarly debates on the potential, feasibility and effectiveness of climate clubs

- › Policy makers at the nexus of trade, industrial and climate policy might find the analysis of effects of industrial policy nationalism insightful since it provides meaningful science-based arguments for a current political debate. It might be especially important for the incoming new European Commission as it will have to balance its domestic industrial transformation ambitions with its stance on global cooperation on combating climate change.

### 3. Short Summary of results

This report comprises two manuscripts (which will both be submitted for publication) that analyse the potential for climate clubs in the context of the global political and economic landscape, especially regarding the emerging geopolitical rivalry and increasing industrial policy nationalism. More specifically, the studies provide qualitative insights into different design options of climate clubs and their possible implications. The second manuscript analyses quantitatively the economic and environmental effects of protectionist and nationalist industrial policies.

The first study (Hall, 2024) critically examines different climate club design options, to determine whether these are (likely to be) compatible with the climate regime, specifically the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC). The study draws on current club-like arrangements to conduct this analysis, including: (1) the Climate Club, (2) the Clean Energy Ministerial (CEM), and (3) the proposed EU-US Global Arrangement on Sustainable Steel and Aluminium (GASSA). The study finds that the Climate Club is the least problematic of the three design options, primarily due to its open and inclusive character. While there are some important considerations with respect to CBDR-RC, the study shows that these could be managed through differential treatment between developed and developing country members. Unlike the Climate Club, the CEM is representative of an exclusive club that is limited to the world's key economies. Due to this particular design structure, the study determines that the CEM is difficult to reconcile with CBDR-RC, given that it suffers from a lack of inclusivity and specifically excludes less powerful countries. In relation to the GASSA, the study finds that several of its core design features undermine CBDR-RC. In addition to providing a forum for countries to strategically exclude certain countries from joining (namely China), the GASSA also presents tensions with respect to the content and bindingness of members' obligations, in addition to the inclusion of uniform trade tariffs against non-participants. Drawing on some existing minilateral climate governance arrangements, the study concludes that CBDR-RC can be woven into the design of future climate clubs in several ways, including differentiation through (1) membership tiers, (2) members' commitments, (3) mechanisms for means of implementation, and (4) compliance mechanisms.

The second study (Hermwille, Fragkos & Fragkiadakis, 2024) develops three scenarios:

- › Strong Industrial Policy Nationalism: leading industrial rivals (EU, US, CN, IN, JP) restrict trade of selected clean energy technologies and key commodities. Restrictions apply globally.
- › Weak Industrial Policy Nationalism: leading industrial rivals (EU, US, CN, IN, JP) restrict trade of selected clean energy technologies and key commodities. Restrictions apply only between the five countries but not to the rest of the world.

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- › Transatlantic friendshoring: trade restrictions are lifted between the EU and US.

We compare these scenarios with a baseline representing the status quo of trade in the selected commodities and technologies. We find that the environmental effects are surprisingly small. (Strong) Industrial Policy Nationalism can even be good for the climate (lower global emissions), but only because it is so bad for the economy (it suppresses economic development and leads to unemployment). Secondly, industrial policy nationalism can cause collateral damage. The rest of the world actually suffers from the implementation of strong industrial policy nationalism. And thirdly, weak industrial policy nationalism does not work. Unless strict trade restrictions are imposed, industrial policy nationalism fails to achieve its purpose to build globally competitive industries and significantly reduce import dependency for key green technologies. While we need a technology race against climate change, the analysis demonstrates that it needs to be a race in a collaborative spirit in which all contestants encourage each other to perform at their best. But a race in the spirit of geopolitical rivalry fuelled by industrial policy nationalism may ultimately cost us the climate.

### 4. Evidence of accomplishment

The evidence of accomplishment of this deliverable is provided through the submission of this report. In addition, the manuscripts will also be submitted to journals for publication.

### LIST OF PARTICIPANTS

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4	Deutsches Zentrum für Luft- und Raumfahrt e.V.	DLR	Germany	
5	E3-MODELLING S.A.	E3M	Greece	
6	Asociacion BC3 Basque Centre for Climate Change – Klima Aldaketa Ikergai	BC3	Spain	
7	Ita-Suomen Yliopisto	UEF	Finland	
8	Indian Institute of Management	IIMA	India	
9	University of Cape Town	UCT	South Africa	
10	Tsinghua University	TU	China	
11	Institut Pertanian Bogor	IPB	Indonesia	
12	University System of Maryland	UMD	USA	
13	HOLISTIC P.C.	HOLISTIC	Greece	



### Executive Summary

The analysis is captured in two article manuscripts, which are summarised below and can be found in the NDC ASPECTS website.

#### **Towards Minilateral Climate Governance? Analysing Climate Club Design Options through the lens of CBDR-RC (D6.3a)**

By Catherine Hall

[https://www.ndc-aspects.eu/sites/default/files/2024-03/20240313\\_NDC%20ASPECTS\\_D6-3\\_paperA.pdf](https://www.ndc-aspects.eu/sites/default/files/2024-03/20240313_NDC%20ASPECTS_D6-3_paperA.pdf)

In response to the limitations and failings of the multilateral UN climate change law regime, a range of new and dynamic climate governance arrangements have emerged. This includes minilateral ‘climate clubs’, which enable a subset of countries to tackle climate change beyond the UNFCCC. While proposed as a solution to move international climate policy forward, depending on their specific design, climate clubs could raise implications from the perspective of the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC) that is enshrined in the climate regime. Accordingly, this paper aims to analyse different design options of climate clubs through the lens of CBDR-RC. First, it explains the general rationale for climate clubs and presents a spectrum of key club design features. Second, it conceptualises the principle of CBDR-RC and describes how this has been operationalised. Third, it draws on existing club-like arrangements – namely, the Climate Club launched at COP28, the Clean Energy Ministerial, and the proposed EU-US Global Arrangement on Sustainable Steel and Aluminium – to critically examine whether different design options are (likely to be) compatible with the principle of CBDR-RC. Last, the paper explores how differentiation could be woven into the architecture of future climate clubs.

#### **A Race at All Costs? Economic and Environmental Effects of Industrial Policy Nationalism (D6.3b)**

By Panagiotis Fragkos, Lukas Hermwille and Kostas Fragkiadakis

[https://www.ndc-aspects.eu/sites/default/files/2024-03/20240313\\_NDC%20ASPECTS\\_D6-3\\_paperB.pdf](https://www.ndc-aspects.eu/sites/default/files/2024-03/20240313_NDC%20ASPECTS_D6-3_paperB.pdf)

Industrial policy nationalism threatens international collaboration on climate change mitigation. Using regulatory, fiscal, or trade policies to protect and promote the interests of national industries against external competition may increase the cost of transformation and delay the diffusion of key low-carbon technologies. While we need a technology race against climate change, it needs to be a race in a collaborative spirit in which all contestants encourage each other to perform at their best. But a race in the spirit of geopolitical rivalry may cost us the climate.

## PARTICIPANTS



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