

Climate clubs: politically feasible and desirable?

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ABSTRACT

The idea of a stringent climate club, once the reserve of academic debates, is quickly gaining ground in international policy circles. This reflects dissatisfaction with the multilateral UNFCCC process, but also hope that a unilateral club could increase climate policy ambition, reinvigorate the Paris Agreement process, and make future emissions pledges stick. With the Biden Presidency renewing the US commitment toward climate action and the European Green Deal proposal for carbon border tariffs, some are advocating the creation of a transatlantic climate club. What could a club approach hope to achieve, and what do we know about its political feasibility and desirability? In this article, we seek conceptual clarification by establishing a typology of different club models; we inject a greater sense of political realism into current debates on the feasibility of these models; and we consider their legitimacy in the context of international climate cooperation.

Key policy insights

- Knowledge gaps and confusion regarding the nature of climate clubs hold back debates about what intergovernmental clubs can contribute to international climate policy.
- Club design matters: existing club models vary in terms of the proposed size, purpose, operational principles, legal strength, and relationship to the UNFCCC.
- Clubs focused on normative commitments face low barriers to establishment. They lack legal strength but can help raise policy ambition.
- Clubs aimed at negotiating targets and measures can increase bargaining efficiency, but struggle to deal with equity and distributional conflicts.
- Clubs seeking to change incentives via club benefits and sanctions face the highest hurdles to implementation. Their promise to tackle free-riding remains untested and difficult to achieve.
- Climate clubs face an international legitimacy deficit. Any club proposal needs to consider how to add to, and not distract from, the multilateral climate regime.

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1. Introduction

Achieving the Paris Agreement's goals requires a dramatic increase in climate action worldwide (Sharpe & Lenton, 2021). According to a growing number of scholars and practitioners, a stringent climate club is needed to save international climate cooperation from failure. The idea is for a smaller group of actors to take action outside the UN climate regime, with clearly defined targets and conditions for members, possibly involving sanctions against non-members (Paroussos et al., 2019; Hovi et al., 2016; Keohane & Victor, 2016; Nordhaus, 2015; Sabel & Victor, 2017). US President Biden's win in the 2020 election has given this debate a boost by opening the door to closer US-EU alignment in international climate politics. While there have

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been calls for creating climate clubs for years, more tangible proposals are now being discussed at major think-tanks (e.g. Bruegel (Tagliapietra & Wolff, 2021; Wolff, 2020); Watson Institute (Shaia & Colgan, 2020)) as well as by prominent practitioners (e.g. Podesta & Stern, 2020), including calls for the creation of a US-EU climate club.

This debate raises three key questions. First, given the wide range of proposals – from informal settings in which countries commit to net-zero targets to more demanding arrangements for cross-border carbon pricing and carbon tariffs – do we actually know what it means to create a climate club, and what it would seek to achieve? Second, what are the chances of climate clubs actually improving the state of international climate policy? What do we know about their respective political feasibility and usefulness? Third, if climate clubs are meant to strengthen rather than replace the UNFCCC regime, this raises questions about the link between unilateral and multilateral climate policy and the legitimacy of the club idea in the context of the UNFCCC.

We address these questions in order to improve conceptual clarity in this debate. In a first step, we propose a typology of climate clubs: we are dealing not with a single club model, but three. In a second step, we identify potential barriers to their implementation, and in a third step we consider perceptions of club legitimacy with the help of exploratory interviews with climate diplomats, practitioners and academics. Our interviews show a general lack of knowledge of the climate club idea outside academic circles and raise some specific concerns regarding its potential impact.

2. Climate clubs: a typology

The climate club idea is in urgent need of conceptual clarification. As our interview results show (see below), significant knowledge gaps exist about the different varieties of climate clubs. A large number of club proposals have been made in recent years, but little agreement exists on their nature and purpose, and what distinguishes them. In fact, individual proposals differ in terms of club size, purpose, operational principles, legal strength, and relationship to the UN climate regime. At the less ambitious end of the spectrum are those comprising any international forum with less than universal membership that is aimed simply at fostering dialogue and cooperation (e.g. Hovi et al., 2019, p. 1072). More demanding models envisage countries negotiating legally binding mitigation measures and enforcing them with sanctioning mechanisms (e.g. Nordhaus, 2015; Parousos et al., 2019; van den Bergh et al., 2020). Yet other models focus on sectoral approaches that target certain industries (Kulovesi, 2012; Banks & Fitzgerald, 2020) or multilevel clubs involving sub-national actors (Martin & van den Bergh, 2019).

To bring clarity and structure to this debate, we propose three ideal types of climate clubs (for similar categorizations, see Stua, 2017; Falkner, 2016a): (a) *normative clubs*, consisting of countries that make a normative commitment to certain climate policy objectives; (b) *bargaining clubs*, which facilitate more effective negotiation of climate mitigation targets, measures and rules among significant powers; and (c) *transformational clubs*, with legally binding membership rules, tangible club benefits and sanctioning mechanisms that seek to change the incentive structure of a select group of members (see table 1). All club types share certain characteristics. They comprise countries that meet certain membership criteria. Countries usually join such groups in the expectation of producing specific benefits that are reserved to members (club goods) rather than those that are available to non-members as well (public goods), though climate clubs may aim at producing both types of goods. Clubs can be small or large in size. Due to more or less demanding entry rules, they would tend to start out as small unilateral forums, but can grow into larger multilateral bodies, as is the case with the GATT/WTO trade regime. In the climate field, where the United Nations Framework Convention on Climate Change

Table 1. Climate club ideal types and their characteristics.

	Raise climate policy ambition	Negotiate measures and rules	Club goods/sanctions to change incentives
Normative club	Yes	No	No
Bargaining club	Yes	Yes	No
Transformational club	Yes	Yes	Yes

(UNFCCC) serves as the central multilateral regime with near-universal membership, most clubs are smaller and often unilateral in nature. Unlike ad-hoc coalitions in multilateral negotiations or one-off gatherings of state representatives, clubs are permanent creations, whether formally or informally constituted, that are built around a common purpose and with rules governing membership.

A *normative club* brings together countries that share a normative commitment to achieving certain objectives. The key membership criterion is adherence to the shared climate policy ambition. Its membership is usually open-ended in that any country (or even nonstate actor) that supports this commitment (e.g. net-zero target; coal phase-out) can join, whether or not they are a significant emitter. Normative clubs do not require elaborate and legally binding rules for club membership; their main purpose is to rally actors behind a specific climate policy ambition through ‘coalitions of the willing’ (Hale, 2011). Normative clubs seek strength from the combination of moral ambition and the size of their membership.

The main purpose of a *bargaining club* is to facilitate more efficient negotiations of common objectives, targets and policies, especially among powerful or significant players in a given issue area. The key membership criterion is significant international status, power and relevant capabilities (Naím, 2009), which in the climate area relate to countries’ global carbon footprint and economic clout. Rather than rally like-minded actors behind an ambitious normative commitment, a bargaining club seeks to promote compromise-seeking among relevant players, including those with diverging normative ambition. The unilateral form is the main reason for their greater bargaining efficiency: it reduces the number of countries’ interests and circumstances that need to be taken into account and allows for linkage politics with fewer side-deals to be struck (Falkner, 2016a, p. 90; Victor, 2011). Bargaining clubs can serve as an alternative to multilateral forums when they achieve deeper levels of cooperation (e.g. G7) but frequently support multilateral processes by allowing major powers to reach an initial political agreement that then paves the way for successful negotiations in a multilateral setting.

Transformational clubs are the most demanding type of climate clubs. They comprise countries that share a common purpose but also seek to change members’ incentive structure. In doing so, they seek to overcome the free-riding problem and enhance compliance with ambitious climate targets. This works in two principal ways: by creating club benefits that are available only to members (e.g. preferential trading, access to technology and finance), and by sanctioning members that are non-compliant (e.g. withdrawal of club benefits, expulsion) or non-members that are unwilling to join (e.g. carbon duties or uniform percentage tariffs on imports) (Nordhaus, 2015). As with bargaining clubs, transformational clubs involve the negotiation of objectives, rules and policies, and they will initially attract those countries that share a certain normative commitment. They can thus be seen as a club of ambitious members, but with strings attached. By creating tangible membership-based benefits, however, they hope to widen the circle of participants to those that do not initially share the club members’ higher ambition.

As is apparent, club models vary considerably in terms of their aims, the members they attract, and how demanding they are. As we discuss below, they also vary with regard to their political feasibility and usefulness. It is thus important to keep these different rationales and operating logics in mind when considering whether the creation of a new climate club can achieve its desired result.

3. Politically feasible and useful?

The expansion of the international climate agenda has led to a proliferation of international networks, initiatives and coalitions. *Normative clubs* that advocate certain policy goals and promote the sharing of best practices have proved particularly popular. Examples include the Powering Past Coal Alliance and Friends of Fossil Fuel Subsidy Reform. Acting as policy entrepreneurs, they advance innovative policy solutions and set the pace in climate mitigation. Shared normative beliefs, not legally binding rules and sanctions, provide the glue that keeps them together. They have low entry barriers as they do not involve difficult negotiations over distributional conflicts. Membership usually only requires a normative commitment and voluntary contributions towards common objectives. They serve as a signalling device for governments, both internationally towards other governments and domestically towards their own populations. As such, normative clubs are politically feasible and easy to create.

Are normative clubs also politically useful? At their best, they drive up normative ambition, create momentum behind specific targets and galvanize action within and outside the multilateral framework. Building on the Paris Agreement's net-zero emissions target, several initiatives have emerged that seek to rally state and non-state actors behind this goal (e.g. Carbon Neutrality Coalition; Leadership Group for Industry Transition). They allow frontrunners to set an example and exert moral pressure on others to raise their game, and they may adopt principles that guide voluntary action (e.g. Helsinki Principles adopted by the Coalition of Finance Ministers for Climate Action). However, normative clubs risk elevating cheap talk and symbolic gestures over substantial action. Many have adopted goals that apply 30 years hence (e.g. net-zero emissions by 2050). Without interim targets, they only bind future, not current, governments. The key question, then, is whether the signing of declarations of intent goes beyond symbolic action, and whether normative entrapment and the threat of reputational damage are sufficient to change states' actions.

Bargaining clubs are primarily aimed at resolving differences between major actors and paving the way towards firmer international agreements. Their key contribution is to increase bargaining efficiency by reducing the number of parties engaged in negotiations. This, it is hoped, will help break deadlocks in multilateral negotiations and achieve more ambitious agreements among a select group of countries. Even if smaller groups cannot always overcome deep-seated interest or value conflicts, operating in a minilateral forum can help enhance political dialogue and ultimately build trust between key players. For instance, minilateral bodies such as the G7/8 and G20 can inject new political dynamism into multilateral negotiations even when their own resolutions fail to reach the highest level of ambition. Minilateral forums, both formal and informal, are widely used in international diplomacy, including in climate politics (Falkner, 2016a). As such, their political feasibility is beyond doubt.

What is less clear is their usefulness for advancing global climate policy. As bargaining clubs are meant to facilitate agreement amongst the most powerful, rather than the most ambitious, countries, they usually end up with lowest common denominator outcomes (Weischer et al., 2012). They are often characterized by lower policy ambition than normative clubs, and unlike transformational clubs they struggle to significantly alter the incentive structure for their members.

The experience with the Major Economies Forum on Energy and Climate (MEF) is instructive in this regard. Building on the Major Economies Meeting on Energy Security and Climate Change established by President George W. Bush in 2007, it launched in March 2009, and was originally meant to bring together large emitters from the North and South and generate leadership for a successful conclusion of the 2009 Copenhagen Conference. After Copenhagen, the MEF largely served as a discussion club for its 17 member states and did not achieve any agreement on actual emission reductions (Andresen, 2014) before falling dormant under President Trump. In a recent executive order, President Biden announced the reconvening of the MEF, suggesting it could advance a potential agreement to phase out coal (United States, 2021; see also Shaia & Colgan, 2020). Unlike the Powering Past Coal Alliance, which acts as a normative club, the MEF could serve as a minilateral bargaining club for a coal ban given its more balanced membership, but doubts remain about its ability to overcome resistance by major coal powers.

The *transformational club* is the most far-reaching and demanding model as it requires countries to agree on legally binding rules and sanctions against rule-breakers. It offers an elegant solution (incentives + enforcement) to a difficult problem (free-riding), yet this elegant simplicity, which is rooted in economic reasoning (e.g. Nordhaus, 2015), also explains why it is the least politically feasible of all club models. Indeed, existing proposals fail to chart a realistic path towards implementation that reflects the shortcomings of the international system. As international relations scholarship has shown, issue complexity and interest diversity lead most major powers to reject comprehensive and binding rules (Keohane & Victor, 2016). There are good reasons why international climate policy has converged around the Paris Agreement approach of combining voluntary pledges with an international review mechanism. It is not for lack of imagining a strong sanctions regime but the inability to overcome the distributional conflicts inherent in collective mitigation action that the Kyoto-style approach has fallen out of favour (Falkner, 2016b). Nordhaus' club model offers a cogent explanation of how it would work once in place, but cannot explain how to achieve enforceable climate agreements (see also Haites, 2020).

To be sure, such a club could be easier to achieve among a small group of like-minded countries, and recent proposals have focused on the US and EU, involving joint carbon pricing and external carbon tariffs (Tagliapietra, 2020). The EU has included such measures in its Green Deal, of December 2019, while the Biden administration's Democratic Party platform promised to 'apply a carbon adjustment fee at the border to products from countries that fail to live up to their commitments under the Paris Climate Agreement' (Democratic Party Platform, 2020). However, to be truly transformational, a US-EU club would need to eventually include other major emitters, such as China, India, Japan, and Russia. According to Wolff (2020), 'such a common external tariff would not only prevent undue carbon leakage. It would also be a strong incentive for other countries to join the club. After all, together, the two economies still make for some 40% of global GDP'.

As tempting as the prospect of a US-EU transformational climate club seems, it raises difficult questions about feasibility and usefulness. For one, creating joint carbon pricing schemes and tariffs requires a strong legislative framework in both jurisdictions and, if legally binding sanctions are to be included, a bilateral treaty. Both elements are a big ask particularly for the US, given domestic political polarization over climate change. Furthermore, high external carbon tariffs would more likely provoke trade retaliation or legal challenges at the WTO than attract other major emitters to join. They would also raise North-South equity concerns around the UNFCCC's common but differentiated responsibilities and respective capabilities principle. In short, the main appeal of a transformational club – its policy stringency and legal strength – is the very reason why it would prove difficult to create it in the first place, and why it might unravel the existing multilateral framework for addressing climate change (Dervis, 2020; Morgan, 2020; Appunn, 2020).

4. The international legitimacy of climate clubs

To assess how climate club proposals are currently viewed by researchers and practitioners of international climate policy, we conducted 24 interviews with academics (5), policy-makers (4) and diplomats (14), plus one UNFCCC official, working at the national and international levels on addressing climate change (see Methods Appendix for details). Asked about their opinions of climate clubs to help accelerate climate action, most interviewees (except 7) replied that they were not familiar with the concept, which suggests that it has barely left the realm of academic debate. Six mentioned less stringent forms of climate clubs (highlighting their usefulness in addressing issues of mutual interest while acknowledging difficulties in maintaining momentum in voluntary clubs and limits to their effectiveness) while one mentioned carbon border adjustments. When offered details about the idea of a transformational club, many argued that the EU comes closest to it – especially given current discussions about introducing a carbon border tax. One interviewee noted the need to include major emitters: 'if you operate in a small group and that group is 80% of the global emissions, I think it's a great idea' (Interview 11). Others welcomed the benefit of negotiating within a small group of countries rather than through a cumbersome universal process based on the consensus principle.

Our interviewees also brought up considerable doubt about the political feasibility and implications of creating a stringent climate club. Some highlighted the risk that it would distract from multilateral efforts already underway: 'I think it's fine to have coalitions ... [b]ut if you close it and make it stringent as a club, I'm sure it will bring benefits to those in the club, but I'm not sure that it will bring benefits overall to the topic' (Interview 5). Interviewees from developing countries argued climate clubs could detract from other policy issues, while a developed country interviewee warned that it could lead to protectionism. The proliferation of minilateral clubs was seen by some as potentially undermining collective international efforts, setting off a competitive dynamic of countries joining rival clubs. This is in line with literature that highlights the problem of free-riding between rival clubs (Asheim et al., 2006; Hagen & Eisenack, 2019). Most respondents did not regard a stringent climate club as a silver bullet, arguing that it would be difficult to design it in a politically acceptable manner and that a broader set of international cooperation mechanisms is needed to address climate change.

In short, the results from our exploratory interviews show that practitioners of international climate diplomacy raise specific concerns over issues of legitimacy and equity. This finding is in line with previous literature that has examined minilateral climate approaches (Gampfer, 2016; Hjerpe & Nasiritousi, 2015). These concerns also tie in with literature that identifies the core climate problem not as one of free riding, but rather one of

unequal distribution of power and resources (Eckersley, 2012; Colgan et al 2021; Aklin & Mildenerger, 2020). The most stringent climate club proposals are focused on overcoming the free-riding problem by changing national incentives and on lowering the transaction costs of global negotiations, rather than addressing distributional issues.

5. Conclusions

This analysis has sought to clarify the debate on climate clubs by establishing a typology of club models and assessing their respective feasibility and usefulness. Climate clubs have gained in popularity because they raise the hope of greater effectiveness as they usually involve a smaller group of countries and (potentially) allow for incentives to be changed and rules to be enforced. Yet in reality, most existing clubs tend to be at the less demanding end of the spectrum, without the power to enforce rules. Given the high barriers to creating a stringent climate club with legal force, realism is needed about what can be achieved in the US-EU context. While it is worth pursuing greater alignment and coordination of climate policies across the Atlantic, possibly as part of a normative club that raises policy ambition, our analysis has shown that a climate club focused on altering incentives and enforcing rules may not be as feasible as it appears.

Furthermore, it is important to recognize broader legitimacy concerns about the relationship between clubs and the UNFCCC regime. The history of international climate negotiations has shown deep suspicion about rich and powerful emitters taking control of the process and eroding trust between parties. Club proponents thus need to think more carefully about the architecture of international climate action and compatibility with the Paris Agreement. Club design matters in this regard. Normative clubs acting as policy entrepreneurs can drive and enrich multilateral processes, as can be seen from the growing number of countries adopting net-zero targets (Dunn, 2021). Bargaining clubs can facilitate progress in multilateral settings by helping to break political deadlock among powerful countries, though the real challenge will be how to accelerate decarbonization and make countries keep their promises. In this respect, experimentation with other governance arrangements may be more promising than pursuing the holy grail of enforceable climate clubs. Targeted agreements to, inter alia, limit fossil fuel subsidies, phase out coal production, set rules for high-emitting industries and greening financial flows can complement the Paris Agreement (Piggot et al., 2018; Sharpe & Lenton, 2021), and some may involve state-centric or sectoral club approaches. In sum, the climate club idea has certain attractions but is no panacea.

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References

- Democratic Party Platform. (2020). <https://www.demconvention.com/wp-content/uploads/2020/08/2020-07-31-Democratic-Party-Platform-For-Distribution.pdf>
- United States. (2021). Executive order on tackling the climate crisis at home and abroad. 27 January 2021. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>
- Akliin, M., & Mildenberger, M. (2020). Prisoners of the wrong dilemma: Why distributive conflict, Not collective action, characterizes the Politics of climate change. *Global Environmental Politics*, 20(4), 4–27. https://doi.org/10.1162/glep_a_00578
- Andresen, S. (2014). Exclusive approaches to climate governance: More Effective than the UNFCCC?. In Cherry, T. L., Hovi, J., & McEvoy, D. M. (Eds.), *Toward a new climate agreement: Conflict, resolution and governance* (pp. 185–196). Routledge.
- Appunn, K. (2020). Emission reduction panacea or recipe for trade war? The EU's carbon border tax debate. *Clean Energy Wire* 30 November 2020. <https://www.cleanenergywire.org/factsheets/emission-reduction-panacea-or-recipe-trade-war-eus-carbon-border-tax-debate>
- Asheim, G. B., Froyen, C. B., Hovi, J., & Menz, F. C. (2006). Regional versus global cooperation for climate control. *Journal of Environmental Economics and Management*, 51(1), 93–109. <https://doi.org/10.1016/j.jeeem.2005.04.004>
- Banks, G. D., & Fitzgerald, T. (2020). A sectoral approach allows an artful merger of climate and trade policy. *Climatic Change*, 162(2), 165–173. <https://doi.org/10.1007/s10584-020-02822-2>
- Colgan, J., Green, J., & Hale, T. (2021, Spring). Asset revaluation and the existential politics of climate change. *International Organization*, 75(2), 586–610. <https://doi.org/10.1017/S0020818320000296>.
- Dervis, K. (2020). Keep climate commitments voluntary. Brookings 2020. <https://www.brookings.edu/opinions/keep-climate-commitments-voluntary/>
- Dunn, K. (2021). 2020 was the year of the 'net zero by 2050' commitment. Will 2021 be the year we get details?. *Fortune* 1 January 2021. <https://fortune.com/2021/01/01/climate-change-paris-agreement-cop26-net-zero-2050-commitments-biden-policy-zero-emissions/>
- Eckersley, R. (2012). Moving forward in the climate negotiations: Multilateralism or unilateralism? *Global Environmental Politics*, 12(2), 24–42. https://doi.org/10.1162/GLEP_a_00107
- Falkner, R. (2016a). A unilateral solution for global climate change? On bargaining efficiency, club benefits, and international legitimacy. *Perspectives on Politics*, 14(01), 87–101. <https://doi.org/10.1017/S1537592715003242>
- Falkner, R. (2016b). The Paris agreement and the new logic of international climate politics. *International Affairs*, 92(5), 1107–1125. <https://doi.org/10.1111/1468-2346.12708>
- Gampfer, R. (2016). Unilateralism or the UNFCCC? The political feasibility of climate clubs. *Global Environmental Politics*, 16(3), 62–88. https://doi.org/10.1162/GLEP_a_00366
- Hagen, A., & Eisenack, K. (2019). Climate clubs versus single coalitions: The ambition of international environmental agreements. *Climate Change Economics*, 10(03), 1950011. <https://doi.org/10.1142/S2010007819500118>
- Haites, E. (2020). A dual-track transition to global carbon pricing: Nice idea, but doomed to fail. *Climate Policy*, 20(10), 1344–1348. <https://doi.org/10.1080/14693062.2020.1816888>
- Hale, T. (2011). A climate coalition of the willing. *The Washington Quarterly*, 34(1), 89–101. <https://doi.org/10.1080/0163660X.2011.534971>
- Hjerpe, M., & Nasiritousi, N. (2015). Views on alternative forums for effectively tackling climate change. *Nature Climate Change*, 5(9), 864–867. <https://doi.org/10.1038/nclimate2684>
- Hovi, J., Sprinz, D. F., Sælen, H., & Underdal, A. (2016). Climate change mitigation: A role for climate clubs? *Palgrave Communications*, 2(1), 16020. <https://doi.org/10.1057/palcomms.2016.20>
- Hovi, J., Sprinz, D. F., Sælen, H., & Underdal, A. (2019). The club approach: A gateway to effective climate co-operation? *British Journal of Political Science*, 49(3), 1071–1096. <https://doi.org/10.1017/S0007123416000788>
- Keohane, R. O., & Victor, D. G. (2016). Cooperation and discord in global climate policy. *Nature Climate Change*, 6(6), 570–575. <https://doi.org/10.1038/nclimate2937>
- Kulovesi, K. (2012). Addressing sectoral emissions outside the United Nations Framework Convention on Climate Change: What roles for multilateralism, Unilateralism and unilateralism? *Review of European Community & International Environmental Law*, 21(3), 193–203. <https://doi.org/10.1111/reel.12005>
- Martin, N., & van den Bergh, J. C. (2019). A multi-level climate club with national and sub-national members: Theory and application to US states. *Environmental Research Letters*, 14(12), 124049. <https://doi.org/10.1088/1748-9326/ab5045>
- Morgan, S. (2020). Taxing times as EU mulls best way to price carbon at the border. *Euractiv* 2020. <https://www.euractiv.com/section/energy-environment/news/taxing-times-as-eu-mulls-best-way-to-price-carbon-at-the-border/>
- Naím, M. (2009, July/August). Unilateralism: The magic number to get real international action. *Foreign Policy*, (no. 173), 135–136. <https://www.jstor.org/stable/i20684883>
- Nordhaus, W. D. (2015). Climate clubs: Overcoming free-riding in international climate policy. *American Economic Review*, 105(4), 1339–1370. <https://doi.org/10.1257/aer.15000001>
- 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. <https://doi.org/10.1038/s41558-019-0501-1>
- Piggot, G., Erickson, P., van Asselt, H., & Lazarus, M. (2018). Swimming upstream: Addressing fossil fuel supply under the UNFCCC. *Climate Policy*, 18(9), 1189–1202. <https://doi.org/10.1080/14693062.2018.1494535>

- Podesta, J., & Stern, T. (2020). A foreign policy for the climate. *Foreign Policy*, May/June 2020. <https://www.foreignaffairs.com/articles/united-states/2020-04-13/foreign-policy-climate>
- Sabel, C. F., & Victor, D. G. (2017). Governing global problems under uncertainty: Making bottom-up climate policy work. *Climatic Change*, 144(1), 15–27. <https://doi.org/10.1007/s10584-015-1507-y>
- Shaia, F., & Colgan, J. (2020). Presidential climate action on day one: A foreign-policy guide for the next U.S. president. Watson Institute, 2020. <https://watson.brown.edu/files/watson/imce/news/explore/2020/Final%20CSL%20Report.pdf>
- Sharpe, S., & Lenton, T. M. (2021). Upward-scaling tipping cascades to meet climate goals: Plausible grounds for hope. *Climate Policy*, 21(4), 421–433. <https://doi.org/10.1080/14693062.2020.1870097>
- 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.
- Tagliapietra, S. (2020). 2021 can be a climate breakthrough, but Biden and Europe need to talk. Bruegel. <https://www.bruegel.org/2020/11/2021-can-be-a-climate-breakthrough-but-biden-and-europe-need-to-talk/>
- Tagliapietra, S., & Wolff, G. (2021). Form a climate club: United States, European Union and China. *Nature*, 591(7851), 526–528. <https://doi.org/10.1038/d41586-021-00736-2>
- van den Bergh, J. C. J. M., Angelsen, A., Baranzini, A., Botzen, W. J. W., Carattini, S., Drews, S., Dunlop, T., Galbraith, E., Gsottbauer, E., Howarth, R. B., Padilla, E., Roca, J., & Schmidt, R. C. (2020). A dual-track transition to global carbon pricing. *Climate Policy*, 20(9), 1057–1069. <https://doi.org/10.1080/14693062.2020.1797618>
- Victor, D. G. (2011). *Global warming gridlock: Creating more effective strategies for protecting the planet*. Cambridge University Press.
- Weischer, L., Morgan, J., & Patel, M. (2012). Climate clubs: Can small groups of countries make a big difference in addressing climate change? *Review of European Community & International Environmental Law*, 21(3), 177–192. <https://doi.org/10.1111/reel.12007>
- Wolff, G. (2020). Europe should promote a climate club after the US elections. Bruegel 2020. <https://www.bruegel.org/2020/12/europe-should-promote-a-climate-club-after-the-us-elections/>

Appendix: Note on methods

In order to gauge perceptions of academics and policy-makers on the idea using a climate club to accelerate global decarbonization, we conducted 24 interviews with academics, policy-makers and climate diplomats working at the national and international levels on addressing climate change. The interviews were carried out via Zoom between April and July 2020. The interviewees were 14 diplomats, 4 practitioners, and 5 researchers from the following countries: Australia, Canada, Costa Rica, Denmark, Estonia, Finland, Iceland, India, Ireland, Latvia, Netherlands, Nigeria, Poland, Seychelles, Sweden, UK, United Arab Emirates, and US, as well as an official from the UNFCCC.

The semi-structured interviews were recorded, transcribed, and anonymized. They asked a series of questions on achieving the Paris Agreement goals and the concept of climate club. The interviewees had the opportunity to reflect on the questions and bring up issues that were not asked in the interview-guide. The key interview question analysed in this paper was intentionally open-ended and focused on the generic club idea rather than a specific club model. It reads: Do you believe a climate club could form to drive decarbonization and incentivize reluctant countries to join? This allowed for a discussion of interviewees' familiarity with the club concept, how they interpret it, and perceptions of usefulness and political feasibility. Of the total 24 interviewees, 17 were not familiar with the club idea. For these interviewees the stringent type of club based on William Nordhaus' proposal was outlined before re-posing the question. We chose to focus on the stringent type as it is the most ambitious but least explored club model, compared to the other types that are prevalent in the climate governance literature.