

THE TRANSFORMATION OF GLOBAL GOVERNANCE PROJECT

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THE GOVERNANCE OF CLIMATE CHANGE: MAKING IT WORK

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1. Climate change is the most pressing and challenging collective action issue. Climate change mitigation exhibits all the characteristics which ought to drive collective action. The preservation of the climate is a paradigmatic public good problem whose urgency is underscored by abundant and unequivocal scientific evidence. Climate is also a policy area where delays may lead to potentially irreversible damage. At the same time, it involves an unavoidable risk of free-riding on any solutions commonly agreed upon, as regards governments' willingness to enter into commitments to reducing carbon emission or in implementing these. Furthermore, climate change raises daunting intergenerational and international equity issues that are hard to solve in theory and even harder in practice. Any solution involves distributional choices along those two dimensions, and also raises in all countries further issues of distributional equity amongst living citizens.

The transition to a socially superior equilibrium therefore creates both winners and losers across generations, between countries and within countries. For these reasons collective action in the field of climate requires solving major problems of intertemporal choice, international coordination and distributional equity, as well as tackling enforcement challenges.

2. The global climate governance framework is not up to the task. At its centre sits the 2015 Paris Agreement on mitigating climate change, which de facto substituted the more coercive but far less comprehensive Kyoto Protocol of 1997. After having failed in 2009 to negotiate and implement binding targets for each and every country, the eventual agreement on a series of nationally determined, non-strictly binding objectives was and remains indicative that the international community has chosen breadth at the expense of depth. Yet, despite the fact that “the house is burning”, the sum of individual commitments by countries, local authorities, businesses and investors do not add up to the collective objective set by the Paris Agreement: limiting the average temperature increase to well below 2°C, aiming for 1.5°C.

The Paris agreement reflected a new reality and a recognition that emission reduction pledges could not be limited to the advanced countries, that the model of timetables and targets could no longer work, that national sovereignty could not be circumvented, and that agreements needed to represent the diversity of the multiple players involved. It was a watershed as it represented a shift from negotiated national commitments to coordinated unilateral pledges. In essence, it defines a process, a learning method, an enabling framework coupled with a peer review and an agreement to assess at regular intervals whether intentions and actual actions measure up to the commonly agreed overall goal.

It is meant to be a platform for accelerating climate action, a way to motivate countries — but also the many other actors of the climate regime, through a process of information exchange, of constant benchmarking and pressure, with the aim of aligning objectives as a substitute to a centralised governance mechanism. Its effectiveness however is yet to be ascertained; it has certainly been hamstrung by political shifts since 2015, most notably the US withdrawal from the Agreement. Nevertheless, commitments under the Agreement must be revised and increased by 2020, when it starts its effective implementation. The idea is to progressively internalise the long-term goal as net zero GHG emissions by 2050, making it become the new reference point for governments and other actors.

As things stand, the intended contributions registered under the Paris agreement are grossly out of line with its stated goal. Incentives to free-ride by under-pledging and under-delivering remain massive. Furthermore, climate coalitions are by nature unstable and leadership risks being ineffective as first-movers in the emissions reduction game end up having made themselves, by their very success, irrelevant for the next step of climate action. This best-performer curse is inherent to the problem at hand.

3. Departure from the simplistic one-agent, one-period model may lead to more optimism.

Climate change mitigation strategies cannot be assessed through simplistic lenses. To start with, states are not the only players. Cities and local governments are also involved, especially as greenhouse gas emissions and local pollution are often correlated. Several have started using the regulatory means at their disposal to foster speedier decarbonisation than envisaged by national governments. Second, private companies have incentives to engage in the development of low-carbon technologies because of the first-mover advantage that may result from early research and investment. Third, states themselves have reasons to encourage such investment because of the comparative advantage that may result from having been involved in the shaping of new technologies.

The important point here is that for those dynamic forces to be set in motion and strengthen the drive towards decarbonisation, it may not be necessary that international agreements be credible and deliver decarbonisation with a high probability. It is sufficient that they credibly set the course towards an irreversibly greener economy. This may be enough to change the nature of the game and make it possible that a soft agreement such as the Paris Agreement provides enough incentives to action to affect private behaviour significantly.

4. A widening gap between frontrunners and laggards raises concerns about the adequacy and the viability of the current framework.

The Paris Agreement brings under the same umbrella front-runners (such as Scandinavian countries) actively engaged in the decarbonisation of their economy and laggards (such as Poland, the US or Gulf states), whose commitment to reducing emissions is at best shallow. The question is how long all of these can remain, nominally at least, part of the same endeavour. Front-runners are likely to be increasingly concerned that they are incurring the cost of climate action while others free-ride on their dedication while enjoying the benefits from lower production costs. Laggards meanwhile may feel that they are not part of the race for technology leadership and are unlikely to reap the benefits of investing into clean technology. The former may insist on more binding agreements or compensatory measures. The latter may fall further behind as following the lead is a challenge and there is little scope to expect being rewarded for one's effort.

This logic may result in an unstable bimodal distribution of efforts and outcome, with the consequence that an economically inefficient and politically toxic two-tier club structure may emerge. Solutions to such divergence may involve specific trade measures (such as adjustment taxes) and/or transfers on a wider scale than envisaged (and hardly implemented) thus far.

5. The plethora of available policy tools need to be harnessed to deliver the desired result.

The climate governance challenge today is to create a collective action framework which amounts to more than the sum of its parts; to reconcile precise and binding global top-down goals with voluntary bottom-up contributions that do not add up to the stated goals - certainly not to the aspirational goal of capping temperature increase to 1.5°C or carbon neutrality by 2050.

Given the size of the task and the collective action challenge, this necessitates an approach which combines incentives for behavioural change (such as agreements to reduce emissions in particular sectors) with direct action (such as direct carbon capture). It is also an approach which needs to pay more attention to the problems that both consumers and producers are faced with in the transition period, and to issues of burden-sharing and fairness. Practically speaking, this may also imply segmentation as a future policy direction: breaking up problems into pieces and looking to create

agreements on smaller climate-related issues, as a complement to the global climate framework rather than a substitute.

A number of policy tools have been used for climate change mitigation: Pigouvian price-based such as carbon taxes; Coasean rights-based such as emission trading permits; regulatory, driving the adoption of cleaner technologies; and legal requirements, which have helped phase out harmful substances. These have all individually contributed to climate change mitigation but have not however created the critical mass required.

Part of the reason lies in the lack of political support for tools such as a global carbon tax or the coordinated phasing out of fossil fuel subsidies. Such support has been undermined by policy design not taking into account distributional effects or failing to include side payments (for example incremental costs to developing countries being borne by richer countries). More broadly, an impact assessment on the various policy tools is required; a broader view incorporating their macro (economic and social) impact, and their potential to help tip the incentives from the static costs to the dynamic benefits of shifting to clean technologies.

- 6. The climate emergency is also a unique investment challenge.** Seen in a dynamic setting however, a major policy challenge is to change business expectations concerning the future in order to generate a critical mass of investment in clean technology, renew the capital stock, accelerate the transition and turn the climate issue from a catastrophic vision to a solution for growth. This requires the transformation of private finance to support such investments (some of which is already taking place), coupled with large public investments in the same direction that act as demonstration effects and as incentives.

It is often hoped that a change in investors' attitude and the promotion of green finance will be key drivers of the transition to a carbon-neutral economy. Despite the certainty about the impact of climate change, however, there is a case of market failure combined with information failure when it comes to forward-looking investments: the existing uncertainty as well as the increasing returns involved in clean technology are bound to generate investment below what is socially optimal in the longer run.

- 7. Climate action must not be left to specialised bodies and institutions.** Governance at global level is mostly driven by states; and it is most successful when political support (expressed for example at G7 or G20 level) combines with existing multilateral institutions to generate cooperative behaviour and solutions. This is unfortunately not the case in climate governance at the moment: the most effective global institutions such as the IMF and the WTO are supportive of climate action but not actively engaged in promoting it.

There is by now a clear need to mainstream climate change mitigation, so that it is taken on board in policy design, policy coordination and policy surveillance. This should apply for example to public finances, tax policy, financial stability policies (where action has started already) and trade and investment policies, to mention key fields only.

Climate governance furthermore exhibits some promising characteristics. One is the already mentioned mobilizing role of sub- and supra-national entities (cities and regions); these cannot substitute for action at state level, but act as complements, generating pressure as well as a real contribution towards attaining climate goals. A second is the political pressure from grass roots movements. Both in the US and in Europe, civil society is making up for lack of leadership at political level; as a result, climate issues have risen in the political agenda. This may help generate the required ambition in the governance framework, with the danger however that whatever positive governance developments materialize are swamped by the extent of the climate problem.

Keynote by Laurent Fabius, chairman of the French Constitutional Council, former chair of the COP21

The Paris Agreement and its future

Almost four years after the conclusion of the Paris Agreement (PA), the speaker made five points about it, followed by five forward-looking points.

- *There is an unfortunate discrepancy between goals, commitments, and results. The goals were simple and ambitious; commitments are looser; and results are far from satisfactory, putting the world on a track for 3-5°C of additional warming. The PA itself is criticised for this, despite the fact that it is states that are responsible for not fulfilling their commitments.*
- *Institutional fora are less and less efficient. This results from a decline in authority of COPs and G7-20s. This is in line with the crisis of multilateralism and international law, leaving irresponsible attitudes unpunished globally.*
- *The necessity of consensus made sense when multilateralism was vibrant; now it can only produce minimal results. The PA was made possible by an alignment of forces (US, EU, China) that no longer exists. Facing the ecocidal Trump and Bolsonaro administrations, the EU remains incapable of assuming a leadership role, and China is unlikely to move forward absent a richer counterpart. Worse, Trump's announced withdrawal from the PA gives other states license to do the same or ignore it.*
- *Meetings and coalitions between and with non-state actors (cities, regions, NGOs, PPPs) are developing and taking an important governance role. Subnational actors, scientist groups, youth movements and courts are having a growing influence on climate change governance. This is challenging the prevailing perception that climate change is a long-term, international issue whose solution cannot come from short-term oriented, democratic choices made within national contexts. States retain a decisive role, but subnational actors in particular can drive effective action. California, New York, universities, cannot force Trump back into the PA, but they can uphold its goals with significant effect.*
- *Different environmental problems are interrelated, whereas political agreements within the framework of the prevailing global governance regime are mostly sectoral. This creates a dangerous and underestimated potential for governance gaps.*

Complex governance structures and new international organisations could be dreamt up to deal with these points, but it is important to be realistic.

- *Political will must be insisted upon more than ever before. Epistemic communities and public opinion can block, sway or eventually replace ecocidal governments. Political will must also be deployed to at least maintain COPs as institutional fora for taking stock, reporting and comparing commitments; or more, to improve them. COPs should be better coordinated with IPCC reports to leverage effects of scientific work on public opinion and political leaders. Their core should be opened to non-state actors, who are for now kept to side-events. They should be prepared with Finance ministers to remind governments of the nature and structure of commitments made, and to highlight costs, benefits and opportunities of climate change mitigation and adaptation efforts for states. By the same token the IMF should get involved. They should pay serious attention to innovation in technology. In all of these respects, the 2020 COP26, where revised NDCs will be submitted, will be very important as a chance to enhance COPs as meaningful mechanisms of climate change governance.*
- *Focus must be brought to under-discussed sectors and themes, such as greening air travel, shipping, agriculture, finance, and technology, as well as drawing attention to the effects of climate change on global health. Immediate action on mitigation and adaptation is imperative, but two major*

mistakes must be avoided: losing the long-term, holistic vision, and framing the struggle exclusively as risks and negatives to be averted.

- *The EU has a role to play in multilateral fora, especially vis-à-vis China and India; discussions can be held on the basis of specific objectives. Action plans requiring consensus have foundered (e.g. recently the Global Pact for the Environment project orchestrated by President Macron): states should have the courage to start taking some decisions by QMV.*
- *Special attention must be paid to two issues. First is coal, which represents the bulk of the problem: if all currently projected projects are completed, there will be no way to avoid catastrophic climate change. Second is carbon pricing, which, as the only feasible tool in a market economy, commands widespread support in theory, but needs hard work to materialise in practice. Coalitions supporting it exist but are insufficient.*
- *Attention must also be paid to the question of a just transition. The PA addresses this only imperfectly, and frustrations due to mismatches between climate policies and poorer people have become glaringly obvious with the emergence of the Gilets Jaunes movement for example. This concern must include the issue of climate refugees.*

The 2019-21 period will be critical. NDCs will be reviewed and states will have to start integrating the 2050 horizon; there will be short-term consequences, but it is the first time so many states will have to look so far ahead, and that is worth supporting.

A daring comparison of the PA to the Final Act of the 1815 Congress of Vienna can be made. They were very different ways of doing diplomacy and tackling problems in two very different worlds. Vienna was secret; Paris had to deal with public opinion. Vienna involved only states through their Foreign Affairs ministers; Paris involved all relevant state and non-state stakeholders. The same format can and should be used in the future for other topics, though established institutions will still have a role to play. Optimism should be maintained moving ahead.

▪ **Session I – The framework for climate governance: Exploring international achievements and shortcomings at global level**

The first speaker explored what has been learned since the adoption of the PA. The Kyoto model of timetables and targets did not work, and the club model did not work alone. National sovereignty cannot be bypassed (especially relevant for the US, where the Senate is a near-insuperable barrier) and top-down measures do not work: there are multiple loci of decision. Climate change governance is a regime complex, which must be approached with tools of multilevel governance; its actors are engaged in a learning process to break through its impasses and achieve collective action that amounts to more than the sum of its parts. In this respect, the PA is meant to be a “hook” on which to hang more action on decarbonation.

The NDCs were designed to try to conciliate the (top-down) global goals and national sovereignty, by allowing states to determine their own contribution towards emissions reductions. While the numbers aren’t binding, the surrounding framework is; as are the hard-fought benchmarks of carbon neutrality by 2050 and the goal to limit warming at 1.5°C, which is where the battle will lie. The PA sets out a form of experimentalist, learning governance where numbers, metrics, and policy are uncertain, thus mandating stock-taking and revision every five years to update wrong predictions. Repetition is therefore a key condition to cooperation.

Implementation and enforcement thus rest upon peer pressure and common expectations of the future, which can be enhanced by state- and non-state actors (cities, regions, businesses, financial institutions...). The goal would be for all to integrate in their decision processes the PA’s goals, turning rational expectations into a self-fulfilling dynamic, with civil society as a watchdog. The scientific community has a role to play in shifting from catastrophistic, victim-mentality narratives to ones emphasising agency and opportunities.

Significant headwinds can be expected however, the most obvious being the Trump and Bolsonaro administrations. Subnational actors and civil society involvement, picking up the slack of national leadership, is vital, but needs to go further. It remains to be seen how far businesses and financial institutions will align with the PA's goals.

The second speaker took a historical look at climate negotiations. At the 1988 informal Toronto conference, a plurality of states (led by the EU) managed to set a collective target for emissions reductions, and agree on the instrument of a carbon tax to avoid free-riding, but the positions of the US (energy costs) and developing countries (differentiated responsibility) meant that negotiation was pushed back to the Rio conference. The Kyoto Protocol enshrined the principle of differentiated responsibility and top-down negotiated targets, but the US refused to ratify it; but on a deeper level, lack of enforcement mechanisms made it unworkable, and the same reason doomed the Copenhagen conference. This is where language shifted from commitments to contributions, diminishing countries' individual responsibility towards achieving a collective goal. The process was rescued at Cancun, leading to Paris.

The PA manages to state the collective goal more precisely than before, but at the price of leaving the means to achieve it severely undeveloped; it scrupulously respects national sovereignty while appealing to states' responsibilities and self-regard through peer pressure. Intended NDCs (I-NDCs) are very different from the negotiated targets of Kyoto, but even if all fulfilled and added up, emissions would still continue to rise, which is completely incompatible with the stated goal. While there has been a change in rhetoric, the free-rider problem remains intact.

"The Paris Agreement changes what the players say, if not what they do."

One successful instance of curbing free-riding while tackling a collective action problem is represented by the Montreal Protocol and its Kigali Amendment on curtailing HFC emissions. A key provision is its trade ban between parties and non-parties of HFC-containing goods, so that participating states can keep trusting others' commitments. It is an example of coordination, not voluntary cooperation, with no presumption of an inability to enforce its provisions. It would be possible to forge ahead on climate change governance in the same way as with HFCs, acting on different aspects of the problem discretely; the PA opens the door to this. A more radical approach would be a Nordhaus-style climate club with border tariffs, but it does not factor in potential retaliation, nor that its carbon pricing is too low. Thus, beyond the fact that coordination games are difficult to play, it is not even certain that their conditions are met; and were they met, and a critical mass of states assembled, the sum total of avoided emissions might not be sufficient. It may become necessary to seriously count on immature or speculative technologies such as mechanical carbon capture and storage (CCS), or solar geo-engineering.

In discussion, one participant proposed that when a problem can't be solved, the context should be widened. International tax reform coordination could ignite self-fulfilling expectations for business and the public, moving the politics and easing the way for governments. Another participant (Victor) agreed with the need for this, calling it "deep tax reform" as opposed to the (equally necessary) shallow tax reform of eliminating subsidies to emitting industries.

Post hoc ergo propter hoc fallacies should not be committed in assigning success to the Montreal Protocol cautioned one participant: the emissions it covers come from essentially a single technology (refrigeration); the US was favourable as Dupont was phasing out the gases; widespread anger in India helped ratification there. The alignment of a single issue with a clearly identifiable political economy made it an easy issue to tackle. Another participant opined that what had worked for Montreal and Kigali was a clear and mutually acceptable fixing of the distribution of short term-costs in the deal; but recognized this was difficult to attain, politically difficult to sell, and potentially socially divisive.

Selective history is indeed a danger agreed one participant, observing that Montreal was not simply a bargaining exercise but a learning one as well. It may not be an adequate bearer of lessons for the PA:

the prevailing, top-down bargain view of the world that produced an excellent but politically unworkable result at Toronto has given way to a learning view, where more actors than states are used to experiment in co-creating governance. Learning implies making mistakes however, and institutions and states must face the politics of admitting them. Learning is also a slow process — which, given the pace of climate change vs the uncertain possibilities of new technology, is likely lead to undermitigation or overadaptation.

One participant commented that the learning view of climate change governance implies analysing it as an information failure as well as a market failure. As such, like the keynote suggested, it would be

“Greenpeace has done a better job than the IEA in predicting the falling prices of renewable energies.”

good for COPs, which bring all actors together, to be coordinated with IPCC reports; though this would not be sufficient to shape expectations, as the first speaker called for. This is a big problem, as good forecasts are needed when commitments are being elaborated. One learned lesson is that the current system has perverse incentives to set low targets so they can be easily met

and revised. Another is that the sectoral approach (like Montreal) can be a useful complement, and should be applied to coal, aviation and maritime shipping, despite the difficulty. The WTO rules can also be leveraged.

To another participant, the PA is not just a learning model of governance, but an enabling one through its incentives. It has “carrots”, but only the weak “stick” of peer review. Incentives and disincentives should be seen as dynamic and kept on the agenda; the G7-20 should get more involved. Another participant agreed that leaders should actively explore what mitigation efforts could be pursued outside the PA. One called for radical ambitions to be set due to the discrepancy of PA goals and commitments, warning that if Trump is re-elected the PA risks falling apart and geoengineering becoming, frighteningly, necessary. There is no way of knowing what the costs might be and who would bear them, not to mention the global democratic problem this kind of scheme would pose.

“If we want to limit warming to 2°C, we need three times the NDCs’ ambition. If we want 1.5°C, that’s six times.”

The second speaker defended the positive, future-oriented effects of Montreal: it stimulated R&D, innovation and patent applications. The distributional and enforcement aspects are indeed crucial: richer countries should pay the incremental costs, e.g. of switching to less-emitting technologies for poorer countries. This kind of scheme exists in Montreal but not in the PA. Advancing CCS is the only way to stabilise temperatures without behavioural change; it just requires financing and is akin to a coordination problem. Other than technologically, this can be done by large-scale reforestation, though this poses land-use problems. Solar blocking should also be seriously examined. It will take decades to ascertain whether action has had the right impact, but the risk of inaction is much greater.

The first speaker recalled that the PA cannot be more than a hook on which outside action (such as sectoral action) should hang. G7-20 involvement may not be ideal however: the G20 in particular is disinclined to produce more global goods than in the financial domain, and that was spurred only by a huge, tangible crisis. There is a failure of global leadership and institutions here. Montreal will soon be truly tested, as CFC emissions are growing illegally, probably due to China; it remains to be seen how this will be dealt with. Informational failure is a reality: governments, but also businesses and civil society hold false beliefs about the costs and feasibility of renewable energy generation. This extends to the distributional issues: e.g. determining what is rent-seeking and what is a legitimate demand for assistance to transition for fossil fuel industries. Good governance is attained where there is the capacity to articulate different mechanisms and get to common measures, bridging power, bargaining interests, and the learning process.

- **Session II – Second-best solutions: Regional coalitions, creative coalitions and other alternatives to a global agreement**

The first speaker evoked the proliferation of non-state/subnational actors since the PA and the importance of supporting them to pressure governments, especially in non-democratic countries like China. China is guided by three principles: its self-interest; its sovereignty; and enhancing its international image. The PA was acceptable to China because China has redefined its self-interest as lying in clean energy. China does not want to be seen as lagging on targets, but will not commit to them unless it is certain it can attain them (unlike some other states). This domestic and international interplay can create virtuous circles, as happened with sulphur emissions in shipping: China figured out how to meet its own pollution targets, then supported the International Maritime Organisation's global cap, and then reinforced its own regulation. This highlights the importance of bringing together domestic coalitions and fostering local champions for effective sectoral action; these can be leveraged to raise China's long-term decarbonisation ambitions. To do so, it is necessary to collect detailed information on impacts and how to distribute efforts; develop good policies to propose to local governments; and dovetail with national priorities (like the 5-year plans). Globally, a carbon neutrality club will be key for the future. Many state and non-state actors have made ambitious commitments: coalitions should be built with a wide range of actors to work out how targets can be met at subnational level based on common goals.

The second speaker was more pessimistic, noting that while fostering virtuous circles and grassroots mobilisation is important, precise mechanisms of change are unknown. Mobilisation can be fungible (e.g. extending concern from plastic pollution to the petrochemical industry), and is increasingly questioning corporate concentration and financial power; but it can be a double-edged sword, helping or hindering action. Institutional investors and ratings agencies are beginning to demand and use better environmental impact assessments. These kinds of signals (also from business, courts, shifting consumption patterns) were important in getting to the PA, and will be more so moving ahead. Widening the scope (to tax, trade...) to tackle the problem is a good idea; all levers of action should be used by creative coalitions.

It is less important to analyse leadership than followership, proposed one participant. On the one hand, best performers become irrelevant: the more one actor does to attain their commitments, the more they marginalise themselves in terms of volume of emissions. A systemic view should be privileged. On the other hand, when experimentation yields good results, studies should be made on how these early "niches" of activity propagate: e.g. France's development of unprecedented ramping technology for its nuclear power plants, allowing greater contribution of renewable energy to the grid. Fragmentation is inherent to the experimentalist process, but governance and innovation are developed best organically at small-scale; there should be a mechanism to sift the chaff from the wheat. The lure of first-best coordinated strategies should be weighed carefully against the reality of second-best solutions.

Successful small-scale initiatives should be built on regionally to coordinate wider application added one participant. Another participant seemed the followership game view pertinent, as the EU represents 8-9% of global emissions now, 5% by 2050; other actors will matter far more. China's consulting the EU on carbon markets design in a context of comparable sub-unit diversity is a good case of followership exhibiting experimentation and learning. A darker example would be the EU imposing tariffs on the US, possibly in view of protecting the PA, following the Trump administration's "first shot" and continued assault on the WTO. One participant warned against using the trading system unilaterally for other policy goals: the use of trade measures in Montreal was multilaterally agreed upon and dissuasive only.

"Trade wars lead to real wars."

One participant argued in favour of leadership however, considering it counterproductive to introduce conditionality in emissions reducing schemes: a carbon border adjustment tax for example would just prompt other countries to tax the exported products at the same rate. The main question is distributive: the EU should unilaterally act in the global interest by complementing the ETS scheme with a carbon tax, and use its “carbon dividend” to support green investments and poorer regions.

“Macron has understood it is not possible to increase fuel taxes and cut tax rates on the rich.”

Another participant recalled the leadership role of non- and subnational actors. Business has a role to play as economic signal co-creators, but the PA is silent about accountability for its commitments. Cities played an important role in shaping and carrying out the PA. They experiment at a level close to their constituents, lead by example and put pressure on national governments; but also exacerbate a dangerous growing rural/urban political divide. This defined the last European election; better to focus on broader sectoral approaches (e.g. food production and land use, transport and energy, social cohesion).

One participant thought the first speaker’s bottom-up coalition building model could be usefully linked with development agencies’ practice. Direct involvement of Finance ministers is also important to mainstream green tools in their field; they should participate in COPs. The SDGs can serve to frame or hook climate issues. Another participant judged recent youth movements an effective form of creative coalition that has provided productive political pressure — but feared that pressure would also rise from catastrophic climate events.

The question should rather be which second-best to choose based on enforceability, argued one participant. The MARPOL Convention on maritime pollution has been successful as a coordination game with a critical mass of players, for example. Another participant expressed support for market mechanisms. A third participant added that much action has been focused on demonstrating immediate demand to provide political cover for governments for action; now action must be shown to be credibly taken. Another participant urged for widespread action with as many instruments as possible (markets, taxes, innovation support, public opinion leverage), recalling the role of contingency (e.g. Dieselgate spurring electrification) and the virtues of nimbleness and creativity in reacting to it to direct the political economy.

The session concluded with the first speaker commenting on the BRI: China is sensitive to criticisms of a project meant to enhance its international image, and has set up committees to deal with them (though some are hypocritical). The rural/urban divide is also relevant there, keeping the authorities from really cracking down on coal. The second speaker saw the PA less as a hook than as an umbrella, covering partial, second-best governance structures in need of coagulating mechanisms to make them tend towards the first-best solution. Instruments based on consumption emission measurement could be considered anew.

▪ **Session III – Taxes, subsidies, R&D and private finance for clean technologies: The battle between dirty and clean technologies as an instrument against climate change**

The chair drew attention to the wide variation in market and state instruments employed, from a US market extreme to a more statist China. The EU stands in between.

The first speaker enumerated several tools at states’ disposal to fulfil their commitments within the PA framework, which specifies none. Carbon taxes in particular are an effective instrument compared to e.g. grants, effectively leveraging an existing system and extracting revenue. The Swedish carbon tax has become a cornerstone of its climate policy: it started early and ramped up gradually, and has achieved decoupling, combining significant emissions reductions with economic growth (as currently measured). It is flexible: it abolished its remit over the covered industries when the ETS scheme was introduced; it was reintroduced in certain sectors (not subject to competition) when its price was too low; it was combined as necessary with time- and scope-limited grants or exceptions.

The speaker conceded that the Swedish carbon tax was adopted as part of a broader tax reform package, and that Sweden holds a higher preference for tax instruments than other countries. A carbon tax is politically difficult to introduce, but international organisations and national financial authorities are networking their experience and knowledge, including on cooperating to mobilise private investment and phase out fossil fuel subsidies. This and the “Greta effect” of new climate movements means international awareness and willingness to act is rising, but some sectoral issues (aviation, maritime shipping) are gridlocked due to existing international agreements. Bilateral arrangements to remedy the situation are being evoked.

The second speaker took the EU’s past and recent action as a case study for instruments used. Transition costs are estimated to be huge, and the big question is how to pay for them. Carbon pricing procures two dividends, by cutting emissions and raising revenue. In the EU, the ETS and renewable energy regulations, covering 45% of industry and energy production, have reduced emissions by 29% in 14 years while raising 14B€ in 2018. The speaker did concede however that it was unclear in what proportions the avoided emissions were attributable to the ETS, renewable energy production or energy efficiency amelioration. Industrial exports kept increasing (concrete, chemicals, textiles), but there is genuine reduction: emissions were not displaced by imports (Chinese steel). More energy-intensive states receive more revenue, and all mostly follow recommendations to spend the revenue on climate change adaptation and mitigation projects. Revenue is also used to constitute innovation and cohesion funds.

The EU budget is another instrument. Currently 20% of it is climate-related; there is ambition to increase it to 25%.

Despite all this, the sums do not nearly match the needs. Private investment must be leveraged, through e.g. public/private schemes. The EU must achieve a capital markets union, while devising an action plan on sustainable green finance; it is already making a taxonomy of green bonds. There is active demand and interest for this in central banks and by institutional investors, especially long term-looking ones (pension funds).

In addition, the EU contributes to international climate finance, raising 20B€/year for the whole range of climate expenditure. But in sum, much more is needed, and it is not clear what signals can produce the right incentives.

In discussion, one participant recalled a controversial statement by Tommaso Padoa-Schioppa on the usefulness of taxes in providing public goods. The remaining uncovered 55% of emissions in the EU could be dealt with by carbon taxation and if necessary border adjustment taxes. This would provide own resources to the EU, to be used on social cohesion and productive sustainable investment. A European Citizen’s Initiative on the topic is ongoing. The second speaker was sceptical however: national preferences on taxation instruments are very far apart; the EU lacks competence in the field; and border measures, attempted for e.g. aviation, were quickly abandoned due to international pressure. Carbon markets may be the more politically realistic instrument.

“I am reminded of something Tommaso Padoa-Schioppa said as Finance minister: ‘Taxes are a beautiful thing, a civilised way of contributing all together to indispensable public goods such as education, security, the environment and health.’”

Macroeconomic implications of massive renewable energy production deployment and infrastructure decarbonation needs are becoming clearer reported one participant: states and international financial institutions are beginning to apprehend the opportunities of zero- or negative interest rates for investing in the future. Economists are devising new macroeconomic models based on sustainability, e.g. Kate Raworth’s Doughnut Economics. Impact attribution of different measures remains a difficult problem however, and measurements and analytics are needed; better ones, integrating subsidy costs, would

show that investment in natural gas is a bad bet for example. Ex post assessment should also take place to transparently evaluate efficiency and social impact of the used instrument.

One participant drew attention to the distributive effect of climate policies, which tend to be more regressive than necessary. There is an opportunity to bridge policy and politics here: technocratically focusing on policy does not positively engage people.

Another participant drew attention to the need to set expectations, for renewable energy production in particular. Feed-in tariffs are useful instruments to develop new capacity, but the larger challenge is the decarbonation of installed capacity: an exit committee for coal on the German model could be set up, following the UN Secretary-General's call for no new coal plants to be built. Gas is defensible as cheaper than full electrification in some places, and can even be carbon-neutral if power-to-gas technology can be scaled up. Investments are plateauing, but are still sorely needed for innovation in electrical storage technology and efficiency projects.

The second speaker concluded by responding that innovation is also needed to decarbonise whole industrial sectors (concrete, steel, chemicals), not just energy production, to build the cities and infrastructure of the future. The question is how to incentivise the larger actors to do more; sometimes economic incentives don't work and regulation must be resorted to. The EU may be facing unique constraints due to the Euro and its debt and deficit rules. The first speaker concluded the session by agreeing that better measurements, ex ante and ex post, are indeed necessary; as is the inclusion of all stakeholders, and taking seriously the distributive aspects while ensuring alternatives and choices for citizens.

▪ **Session IV – Fostering popular and efficient policies conducive of political support: Framing the popular and political debate to achieve carbon emissions reduction goals**

The chair drew attention to the recent sharp politicisation of climate issues, and its mobilisation by all actors: the *Gilets Jaunes* affirm to be acting with ecological interests at heart. Equitable distribution and accountability issues are coming to the fore.

“The 1.5°C target should be our North Star. This is a unique, turning point in human history where the viability of the planet is at stake.”

The first speaker warned that latest IPCC reports predict significant differences between 2 and 1.5°C trajectories in terms of global warming and extreme climatic events: the lower target should guide the use of the full panoply of instruments available given the inevitable march of rising emissions pushing the planet dangerously beyond its boundaries.

Three doublings will occur: the global economy will double in the next 20 years, led by currently emerging economies. So will the stock of infrastructure and the extent of urban space and population. Lock-in effects of capital and spatial expenditure will resonate in the future: 9/10^{ths} of global urban areas are in floodable zones. This makes mitigation and adaptation a huge challenge.

The world stock of capital is 5-600T\$. Its doubling must be coupled with the imperative of getting to zero net emissions by 2050. Even if all this new capital stock is decarbonated, emissions must still be cut. The technology exists to accelerate phase-out of polluting assets and build new ones according to new standards, but investment choice issues and arbitrary debt ceilings obstruct the extraordinary level of needed investment. It will pay for itself (and ensure the viability on the planet), but clear models are needed to secure revenue over the long term and tap into spillover effects. Japan is a unique example.

Even as these models are needed, the urgency of change has to be imparted to the financial sector despite the immediate nature of capital. In DC, water and waste renovation faced huge capital requirements: smart metering provided a reliable long term revenue model, and once demonstrated, was used to raise capital for a 100-year green bond. This very long term timeframe is already a challenge; capital markets in emerging markets have even less depth or structure to take it up. The private sector won't simply step in with reasonably cost finance: development finance will be needed

at unprecedented scale. Nor will carbon pricing at the necessary scope and price. The UK model of infrastructure investment seems promising, mostly private-oriented but financially innovative and long term-driven.

The second speaker drew attention to the specific challenges of emerging economies, taking the example of Brazil. President Lula spearheaded climate action domestically and cooperation internationally on energy as well as land use and food production aspects. The current Bolsonaro administration is resolutely following an opposite path, instrumentalising global reproval to drum up domestic fervour and support. Private and financial actors are seeking bilateral solutions, especially with China, but they may still be open to other actors. Regional, but also national development banks can have an important role to play. Emerging markets should not be viewed as homogeneous; India is not Brazil. The G20 is not adapted to lead on holistic climate change action, but can work on some sectoral issues (energy). China's BRI is driving a massive demand of concrete, a significant source of emissions (global 3rd if the industry counted as a country). Bilateral and regional cooperation form a valuable "new multilateralism".

"30 million people live in the Amazon; not just monkeys."

The effects of catastrophic climate change will be huge. Brazil is already hosting climate refugees. Global health will become a strategic issue as endemic illnesses shift geographically. Worse, the science is still unclear on the possible tipping points at which damage becomes irreversible: preserving the Amazon and the oceans is vital to preserve and foster carbon sinks and biodiversity. In Brazil, the military considers climate as a strategic sovereignty issue, linked to securing territory and extracting its resources. Militaries have large carbon footprints (the US' would be global 3rd if counted as a country).

One participant noted the leading role of new youth movements for climate in mobilising and informing about the scale and urgency of the task, as well as the enthusiasm in the US around the Green New Deal; the rhetoric of both is infused with social justice, but their effects remain to be seen. Another participant reported that President Macron had become convinced of the necessity of more robust climate action internationally when President Trump withdrew from the PA, and domestically with the *Gilets Jaunes* movement. It remains to be seen what his international orchestration efforts on the Global Pact will bear.

Deliberative processes have been successful in managing complex trade-offs and engaging citizens recounted one participant, with better results than classical representative democratic processes;

"Humans are more concerned about future humans than politicians are about future politicians. Social justice rhetoric is not enough: you need to tell people, "You won't be able to buy your way out of this; they will."

though this might be attributable to their globally exceptional democratic environment. The framing must shift to the costs of inaction rather than action, and social justice rhetoric is an insufficient mobiliser. There will be distributional issues to face head-on, but the imperative seems to have penetrated in most quarters; even the CDU. It is telling that the extreme right is targeting climate

movements. Climate issues can be leveraged against populists to take the wind out of their sails: making them debate on the topic reveals their lack of seriousness and wider governance vision.

It has become acceptable to talk with the urgency that is truly needed, while states are beginning to take repressive measures pretexting climate imperatives argued one participant. Widespread societal destabilisation and civil wars are real threats. This urgency should be used to mobilise support on action, starting with collecting and using better data and measurements to deal with the distributional issues; e.g., the PNR for aviation carbon tax purposes, though some participants expressed doubts on the privacy aspects of such a scheme. Some participants thought catastrophist rhetoric counterproductive and potentially dangerous.

The session concluded with the first speaker insisting on the fact that worldwide opinion polls show the depth and breadth of concern over climate change. This must be translated to political action by building a new narrative; until now however this has not penetrated domestic or international orchestrators levels sufficiently. The 2000s debt relief campaign is an interesting parallel of mobilisation on a similarly neglected issue. Phasing out coal requires intense thinking in political economic terms: vested interests may weigh more towards capital than labour. The cost of capital is a key factor: infrastructure in emerging markets is not inherently riskier, but there are temporal, monetary and informational asymmetry issues that make it look astronomical. The second speaker stressed the contingency of politics and advocated acting bravely in peoples' needs at all governance levels; Parliaments are important democratic loci.

Wrap-up – Lessons for Global Governance

The speaker enumerated six insights from the seminar (c.f. supra).

Programme

Thursday 20 June 2019

19.30 Welcome dinner and keynote address: **Laurent Fabius** | French Constitutional Council

Friday 21 June 2019

09.00 - 09.15 *Welcome and introduction*

09.15 – 09.30 *Tour de table*

09.30 – 10.45 **Session I – The framework for climate governance:** Exploring international achievements and shortcomings at global level

Chair: **Jean Pisani-Ferry** | EUI

Introductory remarks: **Laurence Tubiana** | ECF, **Scott Barrett** | Columbia University

10.45 – 11.15 *Coffee break*

11.15 – 12.30 **Session II – Second-best solutions:** Regional coalitions, creative coalitions and other alternatives to a global agreement

Chair: **Sébastien Treyer** | IDDRI

Introductory remarks: **Barbara Finamore** | NRDC, **Bernice Lee** | Chatham House

12.30 – 14.00 *Lunch*

14.00 – 15.15 **Session III – Taxes, subsidies, R&D and private finance for clean technologies:** The battle between dirty and clean technologies as an instrument against climate change

Chair: **Heather Grabbe** | Open Society Foundation

Introductory remarks: **Jos Delbeke** | EPSC, **Susanne Åkerfeldt** | Ministry of Finance (Sweden)

15.15 – 16.30 **Session IV – Fostering popular and efficient policies conducive of political support:** Framing the popular and political debate to achieve carbon emissions reduction goals

Chair: **Laurence Tubiana** | ECF

Introductory remarks: **Amar Bhattacharya** | Brookings, **Izabella Teixeira** | UNEP

16.30 – 17.00 *Coffee break*

17.00 – 18.00 **Wrap-up** – Lessons for global governance

Introductory remarks: **George Papaconstantinou** | EUI

18.00 – 19.00 *Farewell cocktail*

▪ **Participants**

Susanne Åkerfeldt	Ministry of Finance (Sweden)
Scott Barrett	Columbia University
Amar Bhattacharya	Brookings
Simone Borghesi	Florence School of Regulation, EUI
Adrien Bradley	EUI
Jacqueline Cottrell	Green Budget Europe
Jos Delbeke	European Political Strategy Centre; EUI
Jacques Delpla	Economic Analysis Council (France)
Laurent Fabius	President of the French Constitutional Council; fmr. COP21 chair, fmr. French Prime Minister
Barbara Finamore	Natural Resources Defence Council
Heather Grabbe	Open Society European Policy Institute
Emmanuel Guérin	ECF
Tomáš Jungwirth	School of Transnational Governance, EUI
Bernice Lee	Chatham House
David Levai	Institute for Sustainable Development and International Relations (IDDRI)
Alberto Majocchi	University of Pavia
George Papaconstantinou	School of Transnational Governance, EUI
Andris Piebalgs	Florence School of Regulation, EUI; fmr. European Commissioner for Energy and for Development
Jean Pisani-Ferry	Tommaso Padoa-Schioppa Chair, Robert Schuman Centre for Advanced Studies, EUI
Alberto Pototschnig	Florence School of Regulation, EUI; Agency for the Cooperation of Energy Regulators
Artur Runge-Metzger	Climate strategy, Governance and Emissions from Non-trading Sectors Unit, DG CLIMA, European Commission
Saskia Sassen	Columbia University
Izabella Teixeira	UNEP International Resource Panel; fmr. Minister of the Environment of Brasil
Sebastian Treyer	Institute for Sustainable Development and International Relations (IDDRI)
Laurence Tubiana	ECF; fmr. COP21 Special Representative
David Victor	UC San Diego
Georg Zachmann	Bruegel