

These energy benefits are not inevitable, however. Energy use is one factor among many that affects how autonomous taxis will be developed and used. Greenblatt and Saxena's approach is a useful starting point but, like all analyses so far in this nascent research space, it can't yet account for the complexities that we expect as the system develops. The future of transportation energy consumption depends on how the system is used by people, and there are reasons to be cautious. For instance, it's unclear how commuters will behave if autonomous taxis give them the choice either to get to their destinations efficiently or to get there fast; it is arguably human nature to choose convenience in the absence

of incentives to do otherwise. Small, efficient vehicles will have to compete for customers with larger, comfort- or productivity-focused models, such as recent concept cars that resemble mobile living rooms. Additionally, travel by car is currently limited by its cost in personal time — there is no reliable estimate of how much demand may increase by when driving no longer requires drivers' attention.

CAVs, and autonomous taxis in particular, offer great promise for creating a better transportation system while mitigating climate change, but only if policymakers go in with both hands on the wheel instead of letting this exciting new technology develop on autopilot. □

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## INTERNATIONAL NEGOTIATIONS

# Towards minilateralism

The UN's climate negotiation process is no longer the 'only show in town', but there is little agreement among participants on alternatives to replace it.

Robert Falkner

**T**he end of 2015 will see the return of a familiar ritual in international climate politics. Thousands of government delegates, industry lobbyists and environmental campaigners will gather in Paris for the 21st annual Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC), ready to go through the usual rollercoaster of politicking, strategizing, and emotional calls for action.

The chances are that COP21 will not be the breakthrough summit that the world needs. In all likelihood, scientists will call on the international community to rise to the occasion and strike a deal on emissions reductions<sup>1</sup>; activists will stage spectacular stunts to dramatize the significance of the make-or-break summit; and at the end, after two weeks of painstaking talks, diplomats will ask for patience and a sense of realism when announcing that they could only reach a modest agreement with more talks to follow. So is it time to consider alternative forums for negotiating climate mitigation, such as the G20 or subnational networks?

In *Nature Climate Change*, Mattias Hjerpe and Naghmeh Nasiritousi<sup>2</sup> report the findings of a survey of climate negotiators and observers on the importance they attach to such alternative international climate forums. Their analysis

suggests that no clear rival to the UNFCCC has emerged, with respondents expressing sharply divergent views on their preferred minilateral or regional setting.

International climate governance has evolved considerably from its state-centric origins in the early 1990s, when the UNFCCC regime was created. A growing number of trans- and subnational initiatives now provide forums for climate mitigation efforts: the G20 and the Major Economies Forum on Energy and Climate (MEF) allow small groups of leading economies to coordinate mitigation strategies, the CDP (formerly the Carbon Disclosure Project) invites large corporations to report their carbon emissions and informs investors about climate risks, and the C40 Cities network connects more than 75 major cities and their climate strategies. Governments and international organizations themselves have encouraged the growth of such novel initiatives outside the intergovernmental regime. At the UN climate summit in September 2014, the Secretary-General of the UN sought to galvanize the creation of multi-stakeholder initiatives that promote emissions reductions and climate resilience.

Just as the number of climate actors and initiatives has increased, so has the risk of fragmentation in global climate governance. In their analysis of 922 responses from the International Negotiations Survey, carried

out at two consecutive COPs in 2013 and 2014, Hjerpe and Nasiritousi point to a widely diverging range of opinion with regard to the ever more complex field of climate initiatives<sup>2</sup>.

It is clear from their findings that there is no frontrunner that could claim to have widespread support and legitimacy outside the UNFCCC. While the G20 is mentioned by 14% of the respondents, the MEF and the Montreal Protocol are only noted by 5% and 4% respectively. Other forums receive even less support. Most government officials favour UN-style multilateralism, while non-governmental organizations generally focus more on domestic and non-traditional initiatives involving non-state actors. Minilateral forums are of particular interest to officials from European and North American governments, but find few supporters in other regions of the world.

Hjerpe and Nasiritousi's research<sup>2</sup> offers a valuable glimpse into the minds of climate negotiators and observers at a critical time in the international process. Whatever the outcome of the Paris climate summit, the search for novel governance mechanisms is likely to intensify. As the authors note, "the UNFCCC is no longer the only show in town", but none of the emerging minilateral forums has gathered any significant recognition and support among practitioners to offer a legitimate alternative

to the multilateral approach. Of course, whether minilateralism can ever hope to provide a more realistic answer to the global climate problem is a question that requires further investigation and goes beyond the scope of their study (see ref. 3).

Hjerpe and Nasiritousi's research has certain limitations that should be noted. The short time horizon of the survey — just two years, between 2013 and 2014 — does not allow for meaningful conclusions about trends in practitioners' views. Should the forthcoming Paris COP21 fail to produce a strong outcome, as expected, we may see government delegates' interest in minilateral forums picking up. By the same token, a breakthrough deal in Paris that puts the multilateral mitigation strategy back on

track could lead to a dramatic decline in practitioners' interest in such alternatives.

As the authors acknowledge<sup>2</sup>, their survey suffers from considerable selection bias. Attendees at climate COPs have usually invested a great deal of time and energy in the UNFCCC negotiations, and it is therefore hardly surprising that government officials should express a "preference for state-led, multilateral forums", according to Hjerpe and Nasiritousi. Actors operating outside the UNFCCC context may take a different view.

The UNFCCC process has come in for a lot of criticism in recent years, but Hjerpe and Nasiritousi's research suggests there is no viable alternative at the moment. The search may be on for alternative

forums, but no minilateral club has as yet garnered enough support to be a legitimate alternative to the multilateral regime. □

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## CARBON PLEDGES

# Alliances and ambitions

Some countries have pledged to become carbon neutral, while others' emissions continue to rise. Differences in their political attributes could explain the discrepancy in ambitions.

Andrew Kythreotis

Countries will come together this December for the latest round of international climate negotiations in Paris. But countries' ambitions are likely to vary widely. So, why are some nations more willing to commit to larger emissions reductions than others?

That question is the subject of a recent article by Julia Flagg in *Environmental Sociology*<sup>1</sup>, where she examines why nine nations have pledged to be carbon neutral.

Flagg argues that political alliance building has been integral to the emergence of the carbon-neutral pledges. She says pledge states have better governance scores, more environmental non-governmental organizations, smaller populations and lower income inequality. These conditions, she argues, facilitate greater collective action.

Using world society theory, particularly the work of Meyer and colleagues<sup>2</sup>, Flagg explains how states have been embedded in a global culture where a script or blueprint of how they should act on the global stage has been created. These states are reluctant to diverge from this script and adhere to particular norms, such as the need for environmental protection, with other states creating a check through international political pressure. Hence, there can be a spill-over effect of other nations adopting

similar pledges. Such pledges can have their provenance in the global south — interesting, given that international climate governance under the United Nations Framework Convention on Climate Change (UNFCCC) has been historically dominated by the global north.

World systems theory, using the ideas of Wallerstein<sup>3</sup>, argues that nations' actions are a reflection of their position in the world economy. This hinders action being catalysed by the global south because such countries would blame the global north for emitting the most and causing the problem in the first place. Hence, only developed economy states might be expected to adopt carbon-neutral pledges.

But this has not been the case. Flagg says this is because these two theories do

not explain local actions in individual countries. Rather, state-in-society theory explains how local actions can shape domestic policy, which then has an influence on how states act on the international stage. Flagg arrives at four hypotheses regarding pledge and non-pledge states, summarized in Box 1.

Many would agree with these attributes of states, and that countries dependent on extractive industries, such as the United States, Russia and Canada, are unlikely to make carbon-neutral pledges. The track record of these states in relation to the Kyoto Protocol process seems to validate Flagg's first hypothesis.

But the key question is how the characteristics of carbon-neutral pledge states can be translated to the current

#### Box 1 | Flagg's attributes of carbon-neutral pledge and non-pledge states.

1. States dependent on extractive industries are less likely to make carbon-neutral pledges.
2. States dependent on industries such as tourism are more likely to make carbon-neutral pledges.
3. Corrupt states led by small elites tend to ignore public good and so are less likely to make carbon-neutral pledges.
4. More environmental non-governmental organizations would result in greater access to elite decision-makers making it more likely that the state will make a carbon-neutral pledge.