

# ZEW policy brief

by Christiane Reif and Oliver Schenker – Centre for European Economic Research (ZEW)

## The Road to Paris: Towards a Fair and Effective Climate Agreement?

### Approaching the Problem

Currently, global climate policy focuses on the upcoming UNFCCC Conference of the Parties (COP) in Paris. In the run-up to COP21, parties submit pledges to reduce carbon emissions called “intended nationally determined contributions” (INDCs). This bottom-up approach is characterised by voluntary unilateral actions rather than top-down regulation like the Kyoto Protocol, in which international parties determined binding targets through a process of negotiation.

The current approach yields substantial INDCs from major emitters that did not participate in the Kyoto Protocol while including actions already taken on a national level. Yet, though countries have shown a willingness to combat climate change, the efforts they have pledged so far will not reach the two-degree target set at COP16 in Cancún. While the bottom-up approach may have convinced major players to participate, the tragedy of the commons endures. Moreover, unilateral actions will result in a cost-effective greenhouse gas reduction only if they are coordinated. This means that Paris will be a point of departure, not a place of arrival. The main challenge for the negotiations in Paris and the talks that follow is to find a mechanism that allows evolving levels of ambition and coordination and so results in a fair and effective climate treaty.

**Voluntary unilateral actions**

**Tragedy of the commons remains**

The research conducted at the Research Department “Environmental and Resource Economics, Environmental Management” at ZEW provides a better understanding of environmental policy instruments, national sensitivities, and strategies for overcoming the impediments to global climate policy. The findings of this research can be subsumed by the following key messages:

- ▶ Even in situations of uncertainty, early and credible commitments like “intended nationally determined contributions” (INDCs) serve as important signals for future climate cooperation (Dannenberget al. 2015).
- ▶ Given that situations and needs vary among countries, discussions on minimum participation rules can be expected to remain controversial among key players (Kesternich forthcoming).
- ▶ Coordinated emission reductions through the linking of different emission trading systems reduce the price tag of global climate policy goals (Hübler et al. 2014).
- ▶ Funding from industrialised countries for adaptation measures in developing countries – a potentially important part of a fair and effective global climate agreement – can be driven by the funders’ own self-interest and motivated by international trade (Schenker and Stephan 2014).

**Key messages of ZEW research on climate policy**

## Aspects to Be Addressed for a Future Climate Treaty

What makes climate protection so difficult? Climate protection is a global public good: everyone is better off when it is provided and none can be excluded. Even unilateral climate action from a single country benefits the rest of the world. But as climate protection measures are costly, the incentives for free-riding are high. Those countries responsible for greenhouse gas (GHG) emissions in the past and in the present might not be the same countries suffering most from the effects of climate change, whether today or in the future. Costly measures taken today might not have an immediate effect; their benefits might become noticeable only in the future. Meeting these challenges requires coordinated collective action.

**EU's commitment is designed to be a legally binding target**

The European Union (EU) is already taking unilateral climate actions. Latvia and the European Commission submitted their INDCs on behalf of the EU and its member states in March 2015. Their commitment is said to be a legally binding target aiming at a domestic reduction in GHG emissions of at least 40% by 2030 relative to levels in 1990. These actions are part of an effort to find a common framework with fair targets and binding mitigation commitments (EC 2015) that will keep global warming below a two-degree rise. As a leader in climate policy, the EU has contributed to another important public good, namely, providing examples of good climate policy measures. Various experiences made within the EU have shown that a moderate price tag can achieve ambitious climate policy targets. But those experiences also show how complicated climate policy making is: interactions of different instruments, multiple market failures, and understanding the general economic conditions. But what makes a climate treaty effective and fair? The outcome of COP21 remains unknown, not only in terms of how much emission reduction it will finally deliver, but also regarding the legal form any agreement will take. At any rate, several aspects need to be addressed for a future climate treaty. An effective agreement requires the participation of the main players and a long-term perspective, which is only possible when unilateral actions are coordinated. Fairness considerations are substantial for reaching an agreement. Though, cooperation and reciprocity as well as the general acknowledgment of the Rio Principles for shared but differentiated responsibilities are important. The current bottom-up approach is not necessarily any better at providing a fair and effective agreement and at meeting the challenges that stand in the way of global action.

## Research on the Economics of Climate Change in Detail

**Early action and fair burden sharing are credible signals for conditional cooperators**

The research on the economics of climate change can be a guiding principle for climate policy making. The “Environmental and Resource Economics, Environmental Management” Research Department at ZEW has studied four areas related to climate change economics:

The first area is coalition formation and cooperative behaviour. This work provides a comprehensive view of how COP21 could come to a climate agreement. Previous research has stressed the importance of reciprocity and communication in fostering cooperation on climate policy. But climate change also contains elements of uncertainty that impede cooperation even when there is fairness and communication. A study by Dannenberg et al. (2015) analyses cooperative behaviour, meaning that subjects determine investments in disaster prevention without knowing how much effort is necessary. This uncertainty applies also to the prevention of climate catastrophes, as the amount of GHG reduction needed to avoid climate change is unknown. Dannenberg et al. (2015) have found that communication in the form of non-binding pledges is very beneficial. Their results show that early actions in terms of fair contributions are making others more likely to contribute, especially in the case of uncertainty. INDCs are similar to the study's non-binding pledges that signal a willingness to cooperate. Nevertheless, a fair share of burdens is essential for successful cooperation.

The second area of research is identifying instruments that expand participation in terms of the number of parties and the share of global GHG emissions. Minimum participation rules (MPRs) are a common institutional instrument in many international agreements because they ensure that a treaty only enters into force when a certain threshold such as a minimum number of ratifying countries is met. Based on a survey of delegates in international climate negotiations, Kesternich (forthcoming publication) studies the perception towards different MPRs in future climate agreements. His findings indicate that highly developed countries tend to opt for a focal treaty including only the largest emitters, whereas developing countries call for broad participation. While such “carbon clubs” made up of a few key players may provide an effective pathway to accelerate negotiations, a consensus treaty such as the INDC approach ultimately enhances the overall activity of every coalition member.

Another aspect of successful global climate policy research is the coordination of unilateral actions. This is particularly important seeing how several UN member states, including the EU, consider emissions trading systems (ETS) as a key instrument in future climate policy. Although the negotiations in Paris are not expected to discuss the linking of these systems explicitly, trading permits between different systems may allow a cost reduction of the overall GHG reduction. The EU has already started the process of negotiating bilateral and transnational agreements for linking ETS systems. Recent research by Gavard et al. (2011, 2013) has shown that coupling emissions trading in the Chinese electricity sector with the EU ETS would reduce the aggregate cost of these policies. There are various conditions needed for this concept to be feasible, such as setting a limit on the volume of permits traded and designing the coupling mechanism so that it benefits the developing country. Another study, by Hübler et al. (2014), focuses on the design of an ETS in China and linking it with the European ETS. Limiting the volume of CO<sub>2</sub> allowances transferred between the two systems, the study’s authors find higher benefits for the EU than for China. If such coupling mechanisms were used to increase the effectiveness and ambition of future international climate policies, a careful design of the institutional form these links may take would be needed to ensure the involvement of developing countries.

The final area of research concerns support from industrialised countries for adaptation measures in developing countries. Though global climate action focuses on mitigation, climate change seems – at least to some extent – unavoidable, thus making adaptation difficult to administer. Although mitigation is a global public good and adaptation measures are primarily local, measures are inter-linked. The lower the mitigation level, the more adaptation measures are needed to cope with climate change. Yet responsibility for GHG emissions and vulnerability to climate change are unequally distributed, and fairness considerations are crucial for reaching a climate agreement. Although developing countries bear little past responsibility for current CO<sub>2</sub> concentrations, they may be more susceptible to the effects of climate change. This is why industrialised countries should help to fund adaptation measures in developing countries if an effective climate agreement is to be reached. Recent research by Schenker and Stephan (2014) has found that industrial countries could be indirectly affected by climate change via international trade even if they are able to protect themselves from its direct effects. Hence, funding climate change adaptation could lead to a win-win situation, benefiting the donating country as well as the receiving one. Industrialised countries ought to take this into consideration when negotiating financial transfers for adaptation measures.

**Minimum participation rules still controversial**

**Linking ETS needs careful design to bring benefits for all**

**Even the donor can benefit from climate change adaptation**

## Conclusion

The research findings point to several elements that could support global policy in developing a fair and effective climate treaty:

- ▶ Communication and signalling cooperation by unilateral actions
- ▶ Creating win-win situations for early actors and followers as well as for donors and receivers
- ▶ Awareness of the situations and needs of different countries
- ▶ Focus on main players to start

Despite the impediments to climate policy, there is light at the end of the tunnel: Most countries acknowledge the challenges created by climate change and understand that their own self-interests – growth, energy independence, cleaner air – align with reductions in GHG emissions.

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## Further Information

### Contact

**Dr. Oliver Schenker**, Acting Head of the ZEW Research Department “Environmental and Resource Economics, Environmental Management”, email: [schenker@zew.de](mailto:schenker@zew.de), phone: +49 621 1235-229

**Dr. Christiane Reif**, ZEW Research Department “Environmental and Resource Economics, Environmental Management”, email: [reif@zew.de](mailto:reif@zew.de), phone: +49 621 1235-209

### Website

<http://www.zew.de/environmentaleconomics>

# ZEW

Zentrum für Europäische  
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Centre for European  
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