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# Climate Change Mitigation Monitor

# 'PARIS' IS THE END OF THE BEGINNING

In order to assess whether the Paris Agreement of the United Nations climate change (UNFCCC) meeting in December 2015 ('COP21') is a success or a failure, we need to consider a couple of features. As with every issue, this also has two sides. It can be seen as a great opportunity yet to be turned into reality (the glass being half full for optimist parties); and as a failure for not being enough for the emission reductions necessary for keeping global warming below 2 °C (the glass being half empty for pessimist parties).

## PARIS AGREEMENT: IS THE GLASS HALF FULL?

We need to keep in mind that an international agreement cannot go further than previously prepared national decisions. The international process can at best serve to catalyse national climate policies to keep issues on the agenda and periodically revisit them.

The sum of the national commitments does not add up to have a likely chance of staying below a temperature increase of 2°C above pre-industrial levels, the target as determined in the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Nevertheless, it is characterised as a 'success' by Sir David King, UK Foreign Secretary's Special Representative for Climate Change, because it has given a push to the low carbon sector, which will be a major contributor to our economic growth by 2020. The agreement has boosted confidence in the rapidly emerging renewable energy, smart grid and energy storage markets as the mobilisation of businesses and cities is encompassed in the national bottom-up proposals.

The Paris Agreement may be considered as a significant step forward, as it has shifted from the top-down approach – failed in Copenhagen – to a bottom-up approach, with more than 180 countries submitting 'intended nationally determined contributions' (INDCs) prior to the summit. We may consider the following aspects of the Agreement successful:

It ensures all parties focus on the long-term goal to keep global mean temperature rise "well below 2 °C and to pursue efforts to limit the temperature increase to 1.5 °C".

Dora Fazekas
University of Graz

"The Paris Agreement provides a strong basis, but it is only the beginning of a process"

The Agreement includes a five-yearly review by summing up all commitments; although measurement, reporting, and verification (MRV) issues remain untouched.

Finance: the promise from Copenhagen to mobilise USD 100 billion annually of North-South financial flows in 2020 and beyond remains valid with the addition that it will be revised in 2025. The agreement does not contain any binding commitments to scale up climate finance.

Differentiation: this is the first agreement that envisages climate action by all nations. All countries recognise that the fight against climate change is a common global task, although with "common but differentiated responsibilities and respective capabilities" (CBDR-RC).

Loss and damage: the Agreement recognises that there are adverse climate change impacts that cannot be adapted to. Although 'Paris' focused more on mitigation than on adaptation, the inclusion of a separate article on loss and damage is seen as a victory for developing countries.

## In this issue

The Climate Change Mitigation Monitor is a continuation of the POLIMP project's 'Guide towards Paris COP21' series. The series will be continued by the CARISMA project.

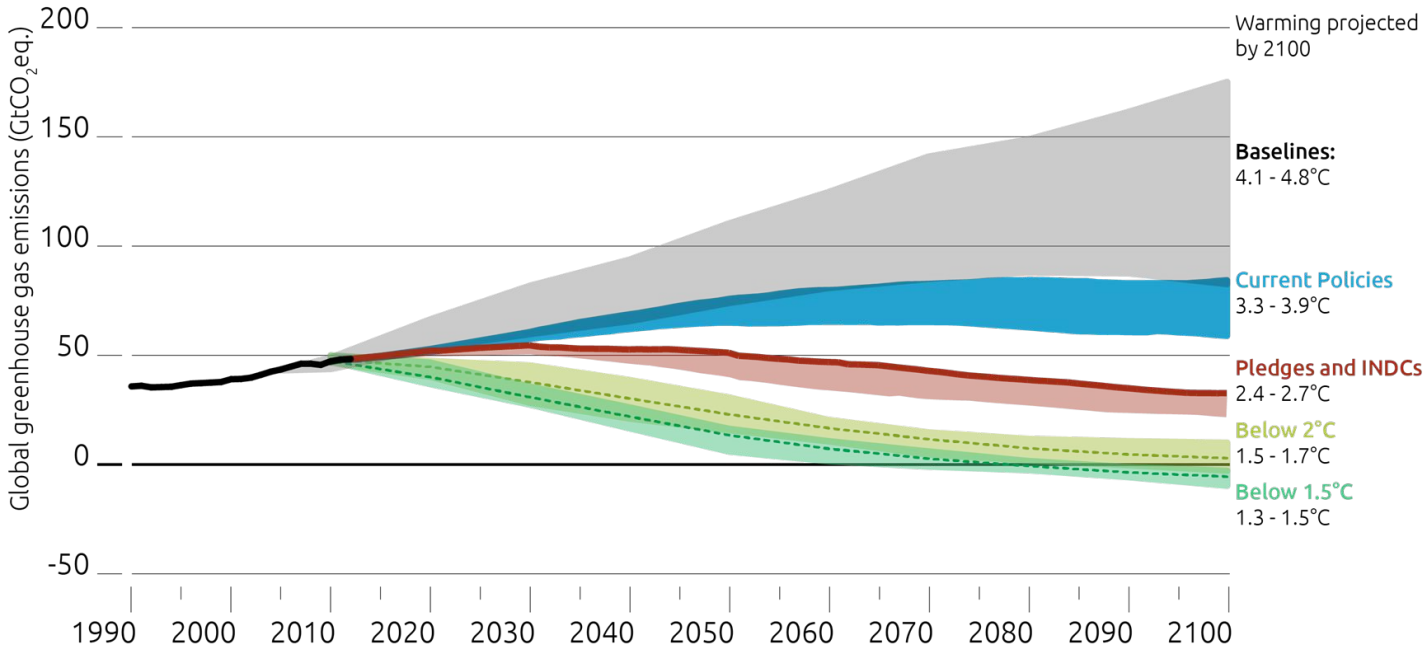


Figure 1. Effect of combined INDCs on global temperature: they are insufficient to reach the 2 °C target (by Climate Action Tracker)

## PARIS AGREEMENT: IS THE GLASS EMPTY?

The Paris Agreement may easily be criticised for setting objectives but failing to actually deliver. The insufficient and non-binding national contributions are not in line with global targets of "well below 2°C". If – and only if – implemented, the national measures will actually reduce emissions but only to the extent that global mean temperature would most likely still increase in the range of 2.4°C to 2.7°C.

Besides, there are no legally binding obligations to actually achieve the national contributions. Instead of binding commitments, the Paris Agreement relies on 'naming and shaming' – establishing a reputational risk through mandatory transparency and review provisions to ensure implementation.

## CONCLUSIONS

The task is before us to detail what we need to do to reach the low carbon future, or 'post-Paris energy transition'. We should consider INDCs as frames for action. Apart from increasing the level of ambition, the details of the transparency framework will be the most relevant field of work in the coming years.

The Paris Agreement provides a strong basis for future global action on climate change. But it is only the beginning of a process, the Agreement is not more than a book whose chapters are titled, with the last chapter defined – long term goal "well below 2°C and pursue 1.5°C" – other chapters' content varies, some still need to be written, some have some ideas and text already.

# EU COORDINATION AND SUPPORT FOR CLIMATE ACTION

Environmental and climate action are key topics within the EU's research and innovation programme Horizon 2020. Within this programme running from 2014 to 2020, and its predecessors such as FP7, apart from funding for research and innovation actions also funding is available for so-called coordination and support actions. The POLIMP and CARISMA projects are two of such actions, aimed at coordination and networking of climate change research and policies.

POLIMP aims at mobilising and transferring knowledge on climate policy implications. It is acknowledged that much information is already available, but the information is often difficult to access, not in the right format, or otherwise of limited use for stakeholders. After identifying knowledge needs of stakeholder groups, the needed information is collected and offered to stakeholders in intuitively easy formats and clear language. This is done through events, as well as the online climatepolicyinfohub.eu platform.

The CARISMA project, through extensive engagement with policy-makers and the business community, aims to improve the understanding of climate change mitigation options, and how the effectiveness of mitigation policies can be improved. Based on these improved insights, CARISMA intends to develop, discuss and disseminate recommendations on EU actions and international cooperation in climate change mitigation research and policy-making.

The POLIMP project will finalise by April 2016. CARISMA will continue until the summer of 2018, and will therefore continue the regular publication of the Climate Change Mitigation Monitor after POLIMP has finalised. See page X for more information on both projects.

# REVIEWING THE IMPLEMENTATION OF NDCs

The Paris Agreement adopted at COP21 commits all countries to undertake meaningful climate action. Although the Agreement does not prescribe how countries should exactly achieve this objective, it does stipulate that every five years countries need to submit their voluntary pledges (nationally determined contributions, NDCs). With the emergence of a system of voluntary pledges, attention will soon need to shift to the 'review' part of 'pledge and review'. Reviews can help to ensure that the voluntary contributions are in line with internationally agreed objectives, and can be considered fair.

In addition, reviews can help to enhance transparency, trust and accountability among Parties, and increase countries' ambitions by providing an opportunity for feedback and by encouraging additional reciprocal actions by other Parties.

"Review processes enhance transparency and trust, and can increase countries' ambitions"

The Paris Agreement provides for three types of reviews. First, it mandates a review of implementation through its 'enhanced transparency framework'. Second, it establishes an implementation and compliance mechanism allowing for a review of compliance. Third, a new 'global stocktake' offers a review of effectiveness. These three types respectively review whether countries carry out what they have pledged; whether they achieve what they have pledged; and whether the objectives of the Agreement as a whole are being met.

While the establishment of these processes is encouraging, the devil will be in the details: crucial decisions on the modalities and procedures of the review processes have been postponed to the first COP serving as the meeting of the Parties to the Paris Agreement. As a consequence, there will be a lot of debate this year on how to design the various review processes. Important questions include what exactly needs to be reviewed, how to differentiate among Parties, and how to organise the review process. A key challenge is that the intended nationally determined contributions (INDCs) submitted by Parties ahead of COP21 are very different: e.g. some Parties pledged absolute emission reductions, while others provided an emissions intensity target, or pledged to peak their emissions in a certain year. It is therefore important to better understand the specific policies and measures adopted to achieve these varying pledges. Without a proper appreciation of the progress made through concrete actions, it will be difficult to review the pledges as such.

The UNFCCC process has already generated a wealth of information through existing review processes. Regular reports by Parties, such as national communications, offer detailed and official accounts of emissions trends, policies and measures adopted, and how progress is made towards the targets. However, in addition, it should be noted that a variety of other organisations are collecting and analysing information on climate change policies, and making this data accessible. Research institutes, think tanks, and consultancies play an increasingly important role in collecting, analysing, and managing the vast amount of climate-related data.

Harro van Asselt & Stefan Bößner, Stockholm Environment Institute

Within the CARISMA project, SEI leads the work on mapping and assessing climate climate mitigation policies.

It is against this backdrop that the CARISMA project has reviewed various databases which deal with climate change mitigation policies. Preliminary findings from this analysis show that there is a lack of harmonised reporting and categorisation standards, and that information about climate change policies tends to be concentrated on developed countries. Generally, information on the costs of policies and on actual emissions savings are rarely found in the databases analysed. Likewise, existing information generally does not clarify the effects of policy interactions, and impacts of contextual developments. Also, the focus is often on renewable energy and energy efficiency policies, while other sectors are underrepresented.

Even when information is relatively abundant, it is unclear whether the available information matches stakeholder expectations and needs. It is for this reason that CARISMA will aim to match available information with the knowledge needs of stakeholders, including policy makers and private sector actors. The continuous engagement with a large variety of stakeholders will enable a better understanding of the context of climate change mitigation policies. Continuous evaluation and assessment of these policies and their implementation in a transparent and accessible manner is of utmost importance to facilitate effective climate action in the wake of the Paris Agreement.

➔ The full commentary on reviewing under the Paris Agreement is available at the CARISMA website: carisma-project.eu

## The Global Stocktake

Article 14 of the Paris Agreement introduces the so-called global stocktake: an assessment of the world's progress towards achieving the purpose of the Agreement and its long-term goals. The first global stocktake is to take place by 2023, and after that every five years.

All Parties will be required to take part in the stocktake, but only the 'collective' efforts will be assessed, and thus not whether the efforts by individual countries are sufficient. The stocktake gives an overview of the overall status, and what should be done, but not on who should do that.

The global stocktake will assess not only action on mitigation, but also on adaptation and (financial) support.

# IS CONSUMPTION-BASED ACCOUNTING THE MISSING LINK TO BOOST EMISSION REDUCTIONS?

Under the UNFCCC, the EU has targets to reduce greenhouse gas (GHG) emissions produced in its territory. However, this doesn't tell the whole story of the EU role in global emissions. Through globalisation, emission impacts go beyond borders, as materials act as a carrier of industrial energy resulting in the transfer of embodied emissions between countries.

With a growing share of emissions embodied in imports and exports, the emissions linked to consumption by a country can differ substantially from those linked to production within its borders. While emissions produced within the EU declined 13% from 1990 to 2010, its actual footprint including emissions embodied in imports increased 8%. This is as the growing demand for goods and services in the EU is increasingly being met by imports from countries without binding GHG emission reduction targets, driven by globalisation as markets chase the lowest labour, energy and materials costs.

The current production emissions accounting approach provides a mechanism in which countries can import carbon intensive products, yet they do not assume responsibility for the carbon emitted in producing those products. It makes it possible for the EU to outsource manufacturing – whether intentionally or through globalising market forces – and claim emissions reductions even though domestic consumption drives additional emissions elsewhere. The amount of net imported emissions to the EU so far has exceeded the size of its Kyoto emissions reduction target and there are no binding agreements to regulate the growth of this imported carbon.

The aim of the Carbon-CAP project is to quantify the mitigation potential of underexploited strategies that target the product consumption, and hence influence emissions embodied in trade. Demand-side strategies can intervene at the level of final producers (e.g. industry), intermediate producers (e.g. firms in the supply chain of final producers), intermediaries (e.g. the transport sector) or final consumers (e.g. shoppers). Consumption policies are seen as complementary to existing domestic mitigation efforts that have focused largely on production-based instruments. The project considers a range of strategies across the different stakeholders and prioritising those that have both the highest mitigation potential with respect to reducing emissions associated with consumption, but are also politically, legally and institutionally feasible and have the ability to significantly influence consumer behaviours.

This text is an excerpt of the Carbon-CAP Policy Brief 1. To read more and learn about the project please follow this link: www.carboncap.eu. POLIMP project partner Climate Strategies is also a partner in the Carbon-CAP project.

# OUTSOURCING OF GREEN R&D TO EMERGING MARKETS

Cecilie Larsen & Ulrich Elmer Hansen, UNEP DTU Partnership

Within the CARISMA project, UNEP DTU Partnership leads the work on international research collaboration.

On Wednesday 2 March 2016, CARISMA hosted a seminar in Copenhagen's UN City on outsourcing and offshoring of research and development (R&D) for green technology to emerging markets. As technology development is increasingly globalised, the seminar focused specifically on cooperation between Danish clean tech companies and emerging economy partners.

David Ryfisch (UNEP DTU Partnership) opened the floor with a presentation on internationalisation patterns of green R&D tracked through patenting; Peder Søberg (Aalborg University) introduced his research on captive R&D offshoring processes, Marcus Møller Larsen (Copenhagen Business School) presented his research on R&D internationalisation strategies in the wind turbine industry in Denmark and India; Arndt Nørgaard (DP CleanTech) outlined practical experience with placing knowledge-intensive activities of a biomass power company in China; and Anders Ødegaard (Danish Ministry of Higher Education and Science) discussed the impacts of growing globalisation on Danish R&D from a regulatory perspective.

The diverse group of participants at the seminar contributed with their take on and experience with related issues and trends. Valuable input from among others representatives of the Brazilian and Chinese embassies in Denmark, the Association of Danish Environmental Technology, and several research institutions, gave perspective to the presentations and spurred fruitful discussions throughout the day. The outcome of the seminar was three-fold:

- Obtaining perspectives from different stakeholder groups on the internationalisation of R&D activities, in order to give a more complete picture of trends, related challenges and opportunities and how green technology R&D can thrive under these conditions.
- Identifying the knowledge gaps and needs on this topic to shape further research. The learnings and conclusions from the presentations and discussions at the seminar will feed into a bigger report on globalisation of innovation and the implications for European green technology industries with the objective of bridging the gap between science and policy.
- Facilitating discussions among a broad group of stakeholders, allowing experience and perspectives to circulate for the benefit of all groups.

A CARISMA Policy Brief on the topic will be published shortly.

## CARISMA WORK PROGRESS

Stakeholder mapping: CARISMA partners have, led by JIN Climate and Sustainability, identified organisations and persons to participate in stakeholder consultation activities. Initially, some stakeholders have been consulted about the scope, approach and foreseen output of the project.

Options for climate change mitigation: Led by the Centre for European Policy Studies (CEPS) and researchers at Radboud University, an inventory of climate change mitigation options is created. 250 options of practices and technologies have been identified. For the list, an adapted version of the the IPCC sectoral categorisation is used. The list will serve as the basis for the work as CARISMA continues.

Assessment of mitigation technology options: Under coordination of the University of Piraeus Research Centre (UPRC), a review of existing indicator frameworks has been carried out, in order to identify a coherent set of indicators, which will be used to assess identified options for mitigations against their socio-economic and environmental benefits.

Climate change policies: The Oxford Centre of Stockholm Environment Institute (SEI) has analysed 25 databases on climate change policies, with a focus on mitigation. In a first step, data sources were clustered with a view to gauging the available information. Second, SEI Oxford will carry out a stakeholder consultation to assess the needs of users of climate policy databases to identify gaps and opportunities for data improvement. Results will be presented in a policy brief.

Policy interactions: To understand the impact on the effectiveness of a climate policy when it interacts with other climate or environmental policies, case study analysis is carried out, focusing on: (1) interaction of policies which are aimed at reducing GHG emissions, (2) interaction of a climate change policy with an environmental and/or energy policy, (3) interactions of policies at the EU level, (4) interactions of policies between national and sub-national levels.

Review on research & innovation initiatives: The UNEP DTU Partnership are currently reviewing the literature on Research & Innovation offshoring by western multinationals in green technology, and technology-seeking investments in Europe by emerging market multinationals.

The progress and the extracted outcomes of CARISMA will be announced at: www.carisma-project.eu/results

## CLIMATE CHANGE PLATFORMS

The POLIMP project has launched the Climate Policy Info Hub platform, which explores the impacts of EU and international climate policy for decision-makers in policy, business and civil society. The aim of the platform is to support informed science-based EU climate policy. On the website, background articles can be found about the EU climate policy mix, the history of UNFCCC negotiations, energy efficiency, emissions trading, renewable energy, adaptation, etc. The platform is available at www.ClimatePolicyInfoHub.eu.

The CARISMA project will develop a platform for exchange of information about research and innovation for climate change mitigation. The platform will not only focus on CARISMA results, but will also be open for publication of results from other EU-funded projects. The platform thus helps to collect and disseminate infomration from various projects in one place, which supports the dissemination of Horizon 2020 research results on climate change mitigation.

## POLIMP final conference

The POLIMP project will organise its final conference on Thursday 21 April at the Centre for European Policy Studies in Brussels (Place du Congrès 1). Apart from presentations on the POLIMP results and their policy implications, during the conference two topics will be discussed:

Mutual learning from global climate policies: how can the EU share its experiences gained? Likewise, how can EU policy-makers extract lessons from non-EU frameworks?

EU climate change policy 'post-Paris': how ambitious does EU policy need to be, pursuing max. 1.5°C global temperature increase?

For the agenda and registration: www.polimp.eu.

CARISMA
Innovation for Climate Change Mitigation

The CARISMA project intends to ensure a continuous coordination and assessment of climate change mitigation options.

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www.carisma-project.eu
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Climate - Policy
POLIMP

The POLIMP project aims to address gaps in knowledge on the implications of international climate policies under discussion.

This project has received funding from the EU's Seventh Framework Programme for Research, Technological Development and Demonstration under Grant Agreement No 603847.

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