



CARBON MECHANISMS REVIEW

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Where Next for Carbon Markets?

**While Article 6 negotiations in
Katowice end in limbo, carbon
pricing policies are on the rise
around the world**

**Enhancing Scientific
Exchange**

Report on Carbon Pricing
Research Conference

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editorial

Dear Reader!

Where next for carbon markets? There are currently several answers to this question. While the markets section of the Paris Agreement rulebook talks at last year's UN conference clearly failed, market-based mitigation policies are spreading around the world. Last year, the World Bank counted 25 emissions trading systems, mostly in subnational jurisdictions, and 26 national carbon tax schemes. Taken together, these pricing initiatives cover 11 GtCO₂e or about 20% of global greenhouse gas emissions.

In this issue of the Carbon Mechanisms Review we look at these trends and present related analyses and backgrounders: we briefly summarise last year's COP and cover two emerging markets – the ICAO's aviation offsetting scheme and plans to curb emissions in shipping. Particular focus is placed on carbon market development in Africa, with reports on the Africa Climate Week as well as a meeting of the West African Alliance on Carbon Markets and Climate Finance (WAA), a regional network of currently 16 member states which, through cooperation and capacity building, provides countries in the West African Economic Area with early access to carbon markets and climate finance.

Climate action is gaining traction, not least thanks to the impact of the Friday4Future protests. Market-based mitigation instruments can play a crucial role in achieving climate policy goals. Yet it is equally important to purposefully design and communicate climate policy, as the yellow vest protests in France have shown. Our analysis of the first research conference specifically dedicated to carbon pricing touches on these and other insights shared at the Carbon Pricing Leadership conference in Delhi.

On behalf of the editorial team, I wish you an interesting and informative read.

Christof Arens, Editor-in-chief



Wuppertal Institut

Carbon Mechanisms Review (CMR) is a specialist magazine on cooperative market-based climate action. CMR covers mainly the cooperative approaches under the Paris Agreement's Article 6, but also the broader carbon pricing debate worldwide. This includes, for example, emission trading schemes worldwide and their linkages, or project-based approaches such as Japan's bilateral offsetting mechanism, and the Kyoto Protocol's flexible mechanisms CDM/JI. CMR appears quarterly in electronic form. All articles undergo an editorial review process. The editors are pleased to receive suggestions for topics or articles.

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The Rulebook with a Missing Chapter

Katowice climate summit adopts Paris Agreement implementation rules, postpones decisions on Art. 6

by Christof Arens

The 2018 UN climate change conference in Katowice delivered an important milestone in adopting the Paris Agreement rulebook. However, negotiations on Art. 6 of the agreement could not be finalized, leaving this page of the rulebook blank. CMR provides a wrap up of all major decisions adopted in Poland in order to facilitate understanding of the broader context and the current state of play of the Art. 6 negotiations.

The Paris Rulebook

NDC Guidelines

An important part of the rulebook negotiations revolved around the question of how to make NDCs more uniform. This was because in the run-up to the Paris climate conference countries had failed to agree on common information requirements and a uniform format for the then intended nationally determined contributions (INDCs). As a consequence, current NDCs display a great diversity in essentially every aspect of them, e.g. in terms of the types of targets, time frames, reference years.

A key task for the Paris Rulebook negotiations was therefore to develop guidelines on how to make future NDCs more comparable as well as to make the assumptions and calculations behind them more transparent. At COP24, countries agreed to the following aspects:

- the reference point of the target;
- the timeframe and the implementation period;
- the scope (what gases and what sectors are covered?);
- the planning process;
- underlying assumptions and methodologies;
- considerations of in how far the NDC is fair and ambitious;
- information on how the NDC contributes to the long-term goals of the Paris Agreement.

These features are to be applied for the second round NDCs, but the decision text “strongly encouraged” countries to apply them for updates of the first NDCs in 2020.

A second task was to provide guidance on how to report on the implementation of NDCs (cp. ‘transparency framework’ further below). Countries are now required to follow IPCC guidelines for accounting GHG emissions or explain their methodology if they have opted for targets that cannot be assessed with existing IPCC-approved methodologies. If countries opted for including adaptation measures in their NDC, they can now also rely on guidance for providing clarity on their efforts to adapt to climate change.



Source: Martti/Flickr/CC BY 2.0

Bringing things to a close: COP 24 delivered the desired outcome in most respects.

What was not achieved, however, was to establish a common time frame for NDC implementation. Countries only decided that they want to see a uniform time frame to be valid from 2031 onwards but did not set a deadline when to finalize the respective negotiations.

Global Stocktake

Within the Paris Agreement's ratchet mechanism approach, the Global Stocktake is supposed to serve as a catalyst for increasing ambition over time. As of 2023, this process will assess collective progress of countries towards the goals of the agreement every five years. The analysis, in turn, is to feed into the update process of the subsequent round of NDCs.

At Katowice, negotiators agreed that the Global Stocktake will be conducted in three phases: information collection and preparation, technical assessment and a political phase of the "consideration of outputs". The work will focus on three "thematic areas" – mitigation, adaptation, as well as means of imple-

mentation and support. The assessment is also to cover loss and damage associated with the adverse effects of climate change. It will involve participation by non-state actors, yet with limited access to the process than during the 2018, 'test run' of the Global Stocktake, the so-called, 'Talanoa Dialogue'.

Transparency Framework

The transparency framework defines the rules for countries' reports on their GHG emissions and progress towards implementing their NDCs. It also establishes an international process to review these reports. The key question at Katowice was how to establish a reporting system for all countries while at the same time providing flexibility to developing countries with capacity constraints.

The agreed rules for the transparency framework require all countries from 2024 onwards to submit greenhouse gas inventories, to provide information on the progress towards meeting their NDC as well as other types of information. The system comprises



Source: UNClimate Change/Flickr/CC BY-NC-SA 2.0

Ambition? What ambition? Youth point to the lack of tangible emission reductions.

flexibility provisions for developing countries with limited capacities. All deviations must be accompanied with information on which capacity constraints are relevant for which provisions as well as the time needed for overcoming the barriers encountered.

Countries in Katowice also agreed on how, when and by whom the information biannually provided by countries is to be reviewed: the technical expert review teams are to check the consistency of the reports with the rules of the transparency framework and highlight areas of improvement. In line with the bottom-up spirit of the Paris Agreement, assessing the appropriateness of a country's NDC and the adequacy of domestic actions, however, are explicitly not within the mandate of these reviews.

Finance

The Katowice decisions on finance include relatively soft rules, providing developed countries with great flexibility on what and how to report on climate finance: developed countries shall biennially communicate indicative quantitative and qualitative information on, among others, projected levels of public financial resources to be provided to developing countries.

Other countries providing resources are encouraged to do so on a voluntary basis. Countries may not only report grants, equity and guarantees as climate finance, but also concessional and non-concessional loans. Reporting of grant-equivalent values remains voluntary. This provides great leeway for developing countries on accounting of financial support. Moreover, the final decision does not require climate finance to be new and additional, but only asks countries to provide information of what new and additional financial resources have been provided.

In Katowice, countries also decided that the Adaptation Fund shall be financed from the Paris Agreement's Art. 6.4 mechanism's share of proceeds once the mechanism is operational as well as from public and private sources. Before the conference, the fund saw substantial annual pledges amounting to EUR 115 million, including EUR 70 million from Germany and smaller donations from France, Sweden, Italy and the EU.

Finally, countries decided to start negotiations in 2020 on an increased, collective, and quantified goal for climate finance for the period after 2025. This will be preceded by the first replenishment of the GreenClimateFund, which is due in 2019.

In Focus: Cooperative approaches at COP 24

Negotiations on Art. 6 at COP 24 had started in upbeat mood when the Independent Alliance of Latin America and the Caribbean (AILAC), Australia, Canada, the European Union, Japan, Mexico, New Zealand and Switzerland submitted a joint proposal on the need for corresponding adjustments when transferring mitigation outcomes under Article 6. Unfortunately, this momentum did not last long. At the beginning of week two, countries had covered numerous issues regarding guidance for the cooperative approaches in Art. 6.2 as well as elements for the rules, modalities and procedures of the mechanism according to Art. 6.4. However, the text was full of options and brackets. Moreover, as had already become clear in the Bangkok session some months earlier, a substantial number of technical questions would need to be resolved the following year.

Towards the end of the conference, it became clear that the issue of corresponding adjustments could become a deal breaker. Mainly Brazil, but also the Arab Group strongly and continuously opposed respective language on safeguarding environmental integrity and transparent reporting. Yet the absence of corresponding adjustments would not only have created accounting loopholes for the Paris Agreement, it could also have led to double counting of mitigation outcomes authorized by countries for use towards fulfilling other international mitigation obligations, e.g. under the International Civil Aviation Organization.

Despite compromise proposals by the Presidency, the controversies lasted well into the last day plus one of the conference. When still no common ground could be found, the complete text was taken back on Saturday afternoon and the Art. 6 rulebook decisions were deferred in their entirety to future sessions. The CMA called upon SBSTA to build negotiations on different text versions used in Katowice in order to finalize deliberations by COP 25 in 2019.

However, within the Transparency Framework (see above), countries were able to agree on minimum requirements to safeguard environmental integrity of Art. 6 transfers: the respective decision in § 77(d) requires all countries that would like to transfer mitigation outcomes to report on corresponding adjustments of their NDC, no matter if used towards an NDC or for purposes other than achievement of NDCs. The latter refers to schemes like the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) established by the International Civil Aviation Organisation, which plans to use, inter alia, credits generated under Art. 6 of the Paris Agreement. Further reporting requirements for Art. 13 comprise information on sustainable development promotion, environmental integrity and transparency.

As a result, basic safeguards for a robust accounting system for market mechanisms were achieved, while detailed decisions on how to govern the PA's Article 6 were shelved for the UN climate summit in Chile in December 2019.

Stepping up ambition

The Paris Agreement requires countries to produce new or updated NDCs by 2020.

To inform the process until 2020, countries conducted the so-called 'Talanoa Dialogue' over the course of 2018. 'Talanoa' is a concept introduced by the Fijian presidency of the 2017 climate conference and denotes an open sharing of views. The dialogue concluded in Katowice with the 'Talanoa Call for Action', which calls upon all countries and stakeholders to act

with urgency. The process also produced a synthesis report of all the inputs received and discussions held over the course of the year.

One key input to the Talanoa Dialogue was the IPCC's special report on the 1.5°C warming limit laid down in the Paris Agreement. The report confirms that for a good chance of staying below 1.5°C, global emissions will essentially need to be halved by 2030 and be reduced to net zero by 2050. Yet, the US, Saudi Arabia, Russia and Kuwait caused substantial delays by refusing to "welcome" the report; Saudi Arabia argued that they



Source: ISD/Kiara.Worth emb.jisd.org/climate/cop24/enb/12dec.html

Navigating the conference: COP President Kurtyka.

could not welcome the report as it contained substantial open questions and uncertainties. Ultimately, countries resolved to welcome the report's "timely completion" and "invited" countries to make use of the report in their further work.

Moreover, the Katowice outcome states that revised NDCs should be informed by the deliberations of the Talanoa Dialogue, while also calling upon all countries to develop and communicate long-term decarbonisation strategies. This was accompanied by numerous pleas for enhanced ambition including, for example, by the Climate Vulnerable Forum and the High Ambition Coalition, which issued the, 'Stepping Up Climate Ambition' declaration.

Conclusion

COP 24 delivered a solid technical basis for implementing the Paris Agreement. The Katowice decisions form a robust operating manual covering rules

how to plan, implement and review countries' climate actions from 2020 on when the agreement enters into force.

The Katowice climate package can also be seen as a victory for multilateralism. It shows that the global community despite the rise of authoritarian tendencies in key countries is still able to reach consensus in a multilateral forum, and that the vast majority of countries still sees climate change as a major concern.

However, the adoption of the rulebook is just a procedural step. The rules are clear now, the wrangling about details of the implementation rules is over. This clears the way for the principle task: stepping up national and international efforts to achieve a zero-carbon and climate-resilient future. And this step is urgently needed, given the emissions gap of 12–14 GtCO₂e in 2025 and 26–29 GtCO₂e in 2030, released by the Climate Action Tracker in December 2018.



Towards a greener future: UNFCCC Executive Secretary Espinosa with the outgoing EU Climate Commissioner Miguel Arias Cañete.

Against this background, the COP dramatically failed to spur clear common commitments for raising ambition and explicitly enhance NDCs. 2019 therefore needs to urgently see real climate action. The UN Climate Summit in September will be a crucial date for world leaders to step forward and present new and ambitious NDCs.

As for the market mechanisms part of the rulebook, the breakdown of the negotiations leaves a blank page in the rulebook that needs to be filled out quickly, even if the provisions in the transparency framework and in NDC accounting constitute a robust framework for prohibiting double counting in principle.

It has to be noted that promising draft Art. 6 texts with consensus potential were developed during the COP. Important issues to solve include, among others, single / multi-year NDC accounting, dealing with mitigation actions inside / outside the NDC coverage, ITMOs in metrics other than CO₂e, and the transition of the Kyoto mechanisms. Negotiators produced various text versions in Poland, which now need to be taken up again with a view to finalising the missing chapter of the rulebook at this year's COP in Chile.

When doing so, negotiators should also take into account an additional aspect widely neglected so far: opening Art. 6.4 for upscaled cooperative mitigation action, such as policy-based or sectoral crediting. This was, after all, a decisive factor for developing new market mechanisms.

Further information:

A subjective collection of COP 24 analyses:

Carbon Brief: <https://www.carbonbrief.org/cop24-key-outcomes-agreed-at-the-un-climate-talks-in-katowice>

Climate Focus: <https://climatefocus.com/sites/default/files/20190107%20COP24%20Brief%20FIN.pdf>

WRI: <https://www.wri.org/print/64637>

A detailed account of the Art. 6 negotiations and the respective documents can be found at <https://ercst.org/publication-rulebook-for-article-6-of-the-paris-agreement-takeaway-from-the-cop-24-outcome/>

Source: IISD/Klara Worth (enb.isca.org/climate/cop24/enb/ndec.htm)

Enhancing Scientific Exchange

Reflections on the first Carbon Pricing Leadership Coalition Research Conference

by Nicolas Kreibich, Wuppertal Institute and Malin Ahlberg, BMU

Carbon pricing is spreading worldwide and ever more jurisdictions are gaining practical experience with carbon taxes and emissions trading systems (ETS). While some are fine-tuning their existing policies, others are in the process of launching third generation carbon pricing instruments like hybrid solutions building on experiences of about 30 years with carbon taxes and 15 years with emissions trading systems. There is an ongoing need to adapt carbon pricing instruments to continuously changing circumstances. At the same time, evidence-based research on carbon pricing is gaining ground and ever more empirical analyses on carbon pricing are being published.

Strengthening the exchange between policy makers and researchers therefore holds vast potential to further enhance carbon pricing instruments and improve evidence-based research. With the idea of linking research to policy and implementation, the world's first International Research Conference on Carbon Pricing was held on February 14-15 in New Delhi, India. The two-day Carbon Pricing Leadership Coalition (CPLC) event convened by the World Bank Group brought together researchers, practitioners, policy makers, business leaders, and other carbon pricing and carbon market experts to discuss the challenges of adopting and implementing carbon pricing and market-based instruments.

The Carbon Pricing Leadership Coalition

The Carbon Pricing Leadership Coalition (CPLC) is a voluntary partnership of national and sub-national governments, businesses, and civil society organizations aiming to expand the use of carbon pricing across the globe. Founded in 2015, CPLC serves as a platform for dialogue, enabling participants to exchange views and experience with carbon pricing policies and instruments. Through dialogue and collaboration, the introduction of carbon pricing policies and instruments is to be promoted and implementation of existing policies strengthened. The CPLC Secretariat is administered by The World Bank Group.

Find out more at
www.carbonpricingleadership.org

With the objective to better inform public and private decision makers on how to design and implement carbon pricing instruments, the CPLC had invited thirty presenters to showcase their latest research findings. The papers, which had been selected and reviewed in a call for papers led by an international scientific committee (Link:

<https://www.carbonpricingleadership.org/cplc-research-conference-scientific-committee>), were presented in individual sessions focusing on six key themes: (1) Learning from Experience, (2) Carbon Pricing Design, (3) Concepts and Methods, (4) Political Economy, (5) Decarbonizing the Economy, and (6) Emerging Frontiers. These thematic sessions were complemented by plenary sessions which covered key issues around carbon pricing, including experience gained across the globe in implementing carbon pricing instruments, options to further promote carbon pricing and issues requiring further consideration in future research.

In the following, we will discuss a selection of three presentations held at the conference with the focus being put on their contribution to international and domestic policy making. Through this approach we would like to show how research findings may inform policy makers in the design and implementation of climate change mitigation policies, highlighting the potential (and limits) of an increased exchange between both communities.

Example 1:

The Use of Revenues from Carbon Pricing, Melanie Marten and Kurt Van Dender, presentation held by Luisa Dressler (OECD)

The political economy of carbon pricing was one of the key topics of the conference and numerous presentations and discussion sessions revolved around the question of how to enhance political support for carbon pricing instruments. One possibility to increase public support and to enhance endorsement of the policy instrument by other stakeholders is a dedicated use of the revenues from carbon pricing: by constraining the use of revenues from carbon pricing these can be used for specific measures, either in form of a legal prescription (earmarking) or through a political commitment not enshrined into legislation. Possible uses may include compensation to vulnerable households or financing of renewable energy support schemes.

In her presentation, Luisa Dressler (OECD) presented preliminary findings of a meta study conducted by the Centre for Tax Policy and Administration at the OECD. The authors of the OECD study analysed revenue use patterns of different carbon pricing instruments across 40 OECD and G20 countries. By building on the definition of “Effective Carbon Rates” (OECD 2018), the authors did not only consider the use of revenues from auctioning of allowances under emissions trading systems and carbon tax revenues but also included revenues from excise taxes on energy use.



Source: Kiryanov/unsplash.com

From dusk till dawn: Can political support for carbon pricing instruments be enhanced?

The comparison of the three carbon pricing instruments revealed that constraints on revenues use are more common under emissions trading systems than with carbon taxes and excise taxes: While the share of unconstrained revenues from ETS permit auctions lies at about 14%, more than 60% of the revenues from excise taxes are unconstrained. With a share of 35%, carbon taxes lie in the middle ground. The authors also distinguished different types of revenue use categories and found that green and energy-related spending is much more common among ETSs. Revenues from carbon taxes, by contrast, are much more often used to support or justify the implementation of other tax policy measures, while constrained use of revenues from excise taxes is largely concentrated in transport-related funding.

The authors suggest that these patterns might be explained with a different perception of the policy instruments: While emissions trading schemes are seen as environmental instruments, carbon taxes are being used as a tool for sound tax policy making. The large share of unconstrained revenues from excise taxes might in turn indicate a greater role of this instrument for fiscal purposes. The author's observation hence highlights how the perceived (!) functions of policy instruments are largely influencing their design in terms of revenue use.

In our view, the information on how revenues are being used by each type of policy instrument are much more enlightening than the differences across the instruments. While all three policy instruments are similar in terms of their carbon pricing function, excise taxes do not put an explicit price on carbon. This can be expected to significantly impact the political economy of their introduction when compared to carbon taxes and ETSs. Another factor leading to different revenue use patterns could be the historical context of the instrument's introduction. Many carbon taxes and emissions trading systems have been introduced over the last years, while excise taxes have been operational for decades.

What conclusions can be drawn from this observation for policy making? Political circumstances have

changed dramatically and policy makers must be much more cautious when introducing carbon pricing instruments. As concluded by the authors, constraining revenue use can be as an important measure to seek support for the policy from different stakeholders and increase transparency as long as it is not too narrow or too strict. At the same time, constraining revenue use should not take place at the expense of the mitigation impact of the policy instrument itself, thus interlinkages between the objective of the instrument and the compensation measures need to be scrutinised thoroughly.

Example 2:

Carbon pricing of international transport fuels: Impacts on carbon emissions and trade activity,

Gabriela Mundaca, Jon Strand and Heinrich Bofinger (World Bank)

How to target emissions from international transportation has been a question for researchers and policymakers alike, with the focus in the past being put on civil aviation. In 2010, the International Civil Air Organization (ICAO) adopted a carbon neutral growth target to keep net emissions at 2020 levels. One key instrument to achieve this goal is CORSIA, the Carbon Offset and Reduction Scheme for International Aviation, cp. article 'CORSIA: Formally on track, but key offsetting features unresolved' elsewhere in this issue.

While many questions on how to implement CORSIA are still to be answered, the focus now shifts to international shipping, which is responsible for more than 2% of global GHG emissions. In April 2018, the International Maritime Organisation (IMO) has adopted an initial strategy on reducing GHG emissions from ships establishing the target to peak GHG emissions from international shipping as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 levels (cp. also article 'Setting sail for low-carbon shipping' in this issue) how this is to be achieved is still unclear.

Against this backdrop, Gabriela Mundaca from the World Bank gave a presentation on carbon pricing of



Source: Kaia Rose / Carbon Pricing Leadership Coalition

Explaining the benefits: Jackie Mercer, Canada, discusses carbon pricing policy options

international transport fuels in which key preliminary findings from a World Bank paper were presented. The paper analyses the potential impact of fuel pricing (through taxation) on shipping activities and their carbon emissions. It is focused on the good categories with the greatest weights. The study then correlates travel distances with pairs of countries that trade products. Using an econometric model for global bilateral trade, the authors look at how changes in the shipping bunker fuel price, used as a proxy for carbon tax, would impact this bilateral trade.

The findings indicate that there will be substantial impacts of carbon taxation on the structure of international trade and related carbon emissions. These impacts would be particularly strong for goods that have a low value relative to their weight. The authors' estimates further indicate that a tax of USD 40 per ton of CO₂ on maritime transport could reduce carbon emissions from the heaviest product categories by up to 100 million tons CO₂ by 2020. These products, which inter alia include cereals, mineral fuels,

iron and cement, constitute about 75% of all weight of international trade carried by sea.

In our view, these findings are meaningful in three ways. First, they show the overall potential of a carbon tax and carbon pricing more generally can have on international transport. Second, the authors draw attention to the fact that the impact of carbon pricing on individual companies and industries depends on the characteristics of their products. Third, and closely related to the latter aspect, the analysis shows that countries that export goods with a low value relative to their trade will be impacted more strongly by a globally uniform carbon price on maritime trade than exporters of high value products. This of course raises equity concerns since the product exporting role correlates with a country's stage of development.

How can these findings inform policy making at the international and domestic level? For policy processes at the international level, the findings shed some light on the political economy implications and the challenges of introducing carbon pricing in the shipping sector. Policy makers could hence take these findings



Talking the numbers: Lord Stern addresses the conference

into account when developing climate change mitigation solutions for the global shipping sector. The impacts from carbon pricing on international transport fuels could also inform domestic policy making. When developing appropriate domestic policy instruments, countries could align their trade patterns with the anticipated introduction of a carbon pricing instrument at the international level and bring themselves in a better position to advance this process internationally.

Example 3:

Cooperative carbon taxes under the Paris Agreement that even fuel exporters could like, Grzegorz Peszko (World Bank), Alexander Golub (American University) and Dominique van der Mensbrugge (Prudue University)

The research of the three authors started with the assumption that the goals of the Paris Agreement can only be reached when the self-interests between a “club” of movers on climate action and more reluctant parties are aligned. This hypothesis was explored by looking at a cooperation between an importing and an exporting country of fossil fuels. Traditionally, fossil fuel exporting countries are reluctant to introduce a carbon price on their products, as they fear a global decline in fossil fuel industries and related value chains that are vital to their economies. At the same time, these countries will face anyway

the challenge of decreased future demand for fossil fuel due to the introduction of climate policies in fossil fuel importing countries that aim to promote alternative technologies and reduce fossil fuel dependence.

The authors argue that one way to deal with this challenge and to align incentives for increased climate action is to shift the point of carbon pricing up to where the fossil fuel is extracted from the ground. This would allow the exporting country to collect revenues that otherwise are captured abroad and to use these revenues to incentivize deeper diversification and transformation of its economy to get adapted to the Paris goals.

However, with such an approach, the fossil fuel producers would still have to tackle the risk of market share loss. This is where according to the authors the international cooperation with the fossil fuel importing country can make a difference. If the importing country would commit to purchase the fuel from the cooperating country, the risk of market share loss could be mitigated. At home, both countries would have to convince domestic users to accept higher fuel prices. The interest of the importing country would be to mitigate carbon leakage and to act to stabilise the climate unilaterally. The authors argue that such cooperative carbon tax agreements

can align the self-interests of both parties and open the space for negotiations of comprehensive and stable cooperation towards the goals of the Paris Agreement.

In our view, this is an interesting approach to think about new opportunities of cooperation. So far, there have been few compelling arguments how to convince reluctant countries to introduce a carbon price. The pros of carbon pricing conflicts with the interests of the fossil fuel exporting countries. These countries regard carbon pricing as a regressive instrument that forces rapid transition away from established fossil fuel-based industries and creates stranded assets, job losses and slower growth. If these countries may obtain the benefit of collecting revenues that can be used to adapt their economy while at the same time having the guarantee to be able to sell their product, this could be a way to smoothen the transformational path of the countries and thus help to overcome the dissent of both parties and create a common ground to act.

However, in order to be effective, the cooperation would have to include two large trading partners. Since the importing countries' commitment to purchase the taxed fuel from the cooperation partner would at the same time exclude other potential suppliers, compatibility with international trade agreements seems questionable. The feasibility of the approach is further challenged by the fact that fossil fuel exporters are protecting their collective interests through cooperation in international organizations, such as the Organization of the Petroleum Exporting Countries (OPEC).

Therefore, we think that such an approach can only be successful if it is implemented multilaterally. This would also be more convincing for importing countries to pay a higher price for fossil fuels and the carbon leakage effect would be tackled more effectively. Another approach – which was not discussed by the authors – would be to come to a tax rate agreement among all fossil fuel exporting countries. With this cooperative action the price on fossil fuel would raise globally and the revenues would remain in the

exporting countries to stimulate economic development. Such an approach could also be explored in further detail.

Conclusions

This conference was a unique and inspiring opportunity for us to learn more about the latest findings from recent and ongoing research projects. It was encouraging to see the keen participation by researchers from all over the world to present their research, exchange on methodological challenges and evaluate empirical findings. Moreover, the participation of young and emerging scholars – several also from developing countries – was of great value to the conference.

We think such type of conference should take place on a regular basis (e.g. every two years) as it facilitates knowledge sharing and allows identifying new research issues. For a fruitful exchange, it is important to strive for an international audience and a stronger exchange between the scientific community and policy makers.

In this regard, we would recommend improving the output of the conference and increasing the involvement of government and businesses. This could be done by placing such a conference back-to-back to an international event. The UNFCCC negotiations, be it the annual Conference of the Parties or the Subsidiary Bodies meeting in Bonn, could be one possibility but also the annual meeting of the Carbon Market Platform could serve as a virtual partner of such a conference. Furthermore, we recommend that the scientific steering committee develops key conclusions for the research community to make greater use of the research work presented and discussed at the conference.

In addition, we think that the CPLC partners should support such a conference type as the outcome of these events are very much in line with the interest of their stakeholders. At the same time, we consider research conferences of this size and setting as a unique selling point for CPLC.

CORSIA: Formally on Track, but Key Offsetting Features Unresolved

by Thomas Forth

While aviation GHG emissions have been growing rapidly in recent times, the emission level is not comparable with when CORSIA negotiations started in the ICAO. Recent figures for the EU show an increase of 5% in 2018 against 2017 and around 25% compared to 2013. The global figures indicate even higher growth rates. This massive growth will not be captured by the sector's CORSIA offsetting scheme, as the measure only covers emissions growth from 2019/2020 onwards. However, not counting the actual GHG emission stock of the aviation sector with the offsetting activities, CORSIA should be seen as the first major effort in tackling climate change at scale. Therefore, the offsetting arrangement must be purposefully designed, and greater efforts are also needed concerning the other elements of CORSIA, especially alternative fuels.

CORSIA in the broader perspective

What are the issues with offsetting from an international market perspective? Obviously, CORSIA offsetting cannot cover the emissions growth in the period before 2019/2020, the period in which the CORSIA MRV begins. It is thus relevant to highlight the fact that CORSIA addresses only the emissions growth, while for the existing high level of aviation emissions

no target and no instrument is in place or under discussion. This reluctance must be overcome when the process of alignment with the Paris Agreement goals comes up for debate later this year. The general carbon pricing debate, which includes heads of states, is the right place to discuss instruments other than offsetting or to re-define CORSIA as a completely carbon neutral based approach. This may also foster the long-term deliberations within the ICAO. The first CORSIA review is planned for 2022 and will be given prior consideration by the Committee on Aviation Environmental Protection (CAEP).

Current issues

But again, CORSIA in its current version is just the first step. To implement CORSIA resolutely and purposefully, as it stands by now, we should try to get a far better grip on the carbon profile of the compliance units in order to avoid greenwashing and de-risking multilateralism in the aviation sector.

Assembly Resolution A39-3 (2016) requested the recent ICAO Council, with technical support from the ICAO CAEP, to establish a Technical Advisory Body (TAB) which will make recommendations to the Council on eligible emissions units for use under CORSIA. The recent Council meeting 216 adopted several implementing elements of the scheme: For the

offsetting part, this includes the “CORSIA Emissions Unit Eligibility Criteria”¹, allowing the newly established Technical Advisory Body (TAB) with its 19 members² to start work. This is a real step towards implementation and necessary decisions could be taken in the time that remains to get the system up and running ahead of the pilot phase. Important achievements in 2019 are planned with the recommendations on technical approaches to management of the Emissions Units Criteria (EUC).

A few topics remain critical, however, and it is up to ICAO member states to explain why decisions on the avoidance of double counting of emission reductions and on the so-called vintage date excluding units from outdated periods are being shifted from one meeting to the next. This leads to the situation we are now facing, where decisions must be taken at the last minute and under pressure. A “take it or leave it” situation is very likely, where one could normally assume that ICAO member states do not want to be responsible for the collapse of the whole CORSIA system.

The following aspects and elements urgently need greater attention:

Timing

The General Assembly is expected to take decisions on the eligibility of programmes, delivering emission units for offsetting within the concept of carbon neutral growth from 2021 onwards. The TAB must prepare the recommendations for consideration of the ICAO members, the CAEP and the General Assembly, including the final decision making. The available time for TAB is extremely short. Whether they manage the job in time or not depends on the number of program applications and the clarity of the criteria.

It is not given that TAB can resolve the issues at hand. Here I point to the late finalization of the work done by the Program Testing Group (PTG) last year. The PTG



Colour spectrum: CORSIA needs clear criteria to allow a choice of credible carbon credits.

delivered the assessment very late and in a comprehensive, but non-transparent manner. Should this happen with the TAB output once again, ICAO members may or may not be able to trust the TAB recommendations. For ICAO members, who are very familiar with the supply programmes and their deficits, trust is not a category and nor is silence. Otherwise, there will be great political pressure to accept a sufficient number of programmes delivering units for offsetting at the end of year.

Avoidance of double counting

For international carbon markets the avoidance of double counting of tradable assets should be matter of course. Who wants to pay for an asset that they cannot eventually own or even claim? And who would accept such valueless certificates for compliance? Unfortunately, insights into UNFCCC and ICAO

¹ Available at: <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Emissions-Units.aspx>

² The list of TAB members is available under <https://www.icao.int/environmental-protection/CORSIA/Pages/TAB.aspx>. The Terms of Reference were still to be published at the time of writing.



Outlook: A review of the CORSIA system will be on the ICAO agenda in 2022.

negotiations show that this approach does not make sense. The Article 6 negotiations, among other reasons, failed on the exemption from corresponding adjustments from first transfer in relation to the issuance of certificates under the Article 6.4 mechanism from an UNFCCC account because every mitigation activity under Article 6.4 has a first transfer.

Such an exemption could lead to double counting of units through the entire lifetime of CORSIA. The decision on the first transfer might be taken or sorted out at COP 25 or later with consequence that the UNFCCC failed to deliver the legal basis for avoidance of double counting under CORSIA. There is no other way to prevent the risk of the ICAO deciding in favour of an appropriate technical solution based on the EUCs. Article 77 (d) of the Enhanced Transparency Framework (ETF) does not deliver a convincing story line on excluding individual transfers from double counting.

The reason for this is very simple, because the interpretation of the international transfers being used for NDC compliance or for other purposes depends on the answer one gives or must give when defining something as an international transfer. Here we can

go around in circles on the first transfer concept under Article 6.4, both in and outside NDC coverage and additionality, on the need for NDC compliance. To ensure that CORSIA is successful, legally binding confirmation is needed from the transferring party that no further claims and uses of the transferred units will be made.

Vintage of units: Starting and cut-off dates

There is a concern that there are not enough project activities being undertaken that will be able to deliver sufficient supply to meet the CORSIA demand and allow airlines to buy certificates out of a portfolio of high-quality projects at a fair price. For airlines, the oversupply of the providing programmes will lower the price of the units. One of the tasks of the actual CAEP work programme, therefore, was the request to the EUC Working Group to analyse demand from and supply for airlines. This might shed light on whether the system will actually function. If it does not, the foreseeable demand in the pilot phase is very limited. The calculations now point

³ The Oeko-Institute checked the figures for the Federal Ministry of Environment in 2017. At that time, China was assumed to be participating in the pilot phase. There have been no dramatic changes concerning future demand since then.

to about 100 million CO₂e in the first three years and without China the figure is even less.³ What this means is that there is no need to request the use of old CERs that were generated prior to the adoption of the CORSIA passage at the 39th General Assembly in 2016.

Regarding the expected shift from the CDM to the Article 6.4 mechanisms, a cut-off date for the use of CERs will be helpful to incentivize the earliest-possible use of Article 6.4 activities. In the event such a decision is reached, CORSIA will benefit from a lasting and reliable mechanism under UNFCCC supervision. The foreseeable delay in Article 6.4 supply of new project activities is a strong argument – one that may well generate certificates at scale more towards the end of the pilot phase rather than at the beginning. However, the question at hand is whether airlines should be privileged with access opportunities to previously issued certificates or should play an active role on the primary market, thus helping to introduce the new mechanism on the ground. A further argument for an early cut-off date for CERs is the chance of transitioning active CDM project activities to Article 6.4. This issue has not been discussed in detail during the UNFCCC negotiations so far, but it must be resolved with regard to a positive output for Article 6 at COP25 in Santiago this year.

Conclusions for 2019

The delayed decision on Article 6 impacts finalization of CORSIA's offsetting part.

Of course, with decisions on Article 6, paras 3 and 5, it would be much easier for CORSIA to operationalize the emission unit criteria on double counting. However, the issue to be resolved in CORSIA is the same as that formulated in the two paras cited. Transferring countries must confirm in a legally binding manner that they will make no further use of the transferred emission rights, neither for their NDCs nor for other carbon market purposes.

Different cut-off dates for CERs under the UNFCCC and the ICAO apparently cause no technical prob-

lems if CORSIA decides in favour of pre2020 vintages, so that the CDM countdown could happen at the start of the first NDC period. In this case, the CDM supply for CORSIA does not lead to zero for airlines.

For ongoing CDM project activities, the outlook is very complex. The mitigation activities may lead to new and additional emission reductions, but there are reasons not to allow them to proceed under the conditions of the CDM. The implementing countries may need these emission reductions to fulfil their NDC mitigation targets, their low emission strategy could set other priorities and they may want to channel demand into relevant fields of that strategy. While there are more aspects involved than these, they make it pretty clear that automatic transition of these activities is unlikely. Negotiations on conditions for a CDM transition should thus start soon. If they don't, we should be aware of possible repercussions for vintage determination under CORSIA.

As already mentioned above, the CORSIA review will be on the ICAO agenda in 2022. There is no question that CORSIA's current design is not the answer to climate change. The aviation sector with its rapidly growing GHG emissions counteracts any efforts that might be made by implementing the current NDCs. However, such reflections and negotiations will start this year at the 40th General Assembly, when an agreement should be reached on the long-term-goal (LTG) for the ICAO in line with the long-term goals of the Paris Agreement.

Finalization of the rules for offsetting under CORSIA, acceptance of programmes for offsetting and completion of the implementing rules of the Paris Agreement can strengthen multilateral approaches. On the other hand, if we fail by allowing greenwashing and double counting, we will burden multilateralism across the board. Multilateral means rules for all and not just for others. Broad participation in CORSIA phases 2 and 3 will only be encouraged if the pilot phase is a success.

Setting Sail for Low-Carbon Shipping

Carbon pricing options for international maritime emissions

by Silke Mooldijk and Aki Kachi, NewClimate Institute

According to the IPCC, in order to avoid dangerous climate change, GHG emissions must reach net zero by 2050. The Paris Agreement doesn't mention international aviation and shipping although they are significant contributors to global GHG emissions. Most countries' NDCs', although often vague, don't include these sectors. While shipping is an extremely emissions efficient mode of transport, the sector still contributed about 2.5% on an annual basis from 2007-2012. Indeed, assigning maritime GHG emissions to one single country is complicated, because ships have a tenuous relationship to where they are registered, move cargo for a number of global companies between many different ports, and often have multinational financiers and crews. For this reason, climate policy for international shipping has mostly been left to the International Maritime Organization (IMO). In April 2018 the IMO agreed on an Initial Strategy on the Reduction of GHG Emissions, setting out three goals (cp. CMR 04/2018):

- 1) Reduce individual ship's carbon intensity;
- 2) Reduce the carbon intensity of international shipping (i.e. CO₂ per transport work) by at least 40% in 2030 and pursuing efforts toward 70% in 2050, compared to 2008 levels; and
- 3) Peak international shipping GHG emissions as soon as possible, reduce total annual GHG emissions by at least 50% by 2050, compared to 2008

levels; pursue to phase out emissions on a pathway consistent with the Paris Agreement temperature goals.

The strategy includes market-based measures as a potential mid-term measure. A work stream on market-based measures in the IMO previously explored a number of measures including levies, an ETS, and subsidies (IMO, 2010). Based on a recent NewClimate study on carbon pricing options for international shipping the following summarises important points to keep in mind in this discussion.

Barriers to reducing maritime emissions

Aligning international shipping with the Paris Agreement and decarbonising the sector before 2050 is not an easy task, but possible. A large part of the emission reductions could be realised using existing technical and operational measures, including propeller polishing, hull cleaning, and speed optimisation, many of which can be carried out at low to negative cost (ICCT, 2011; Maddox Consulting, 2012). Switching from Heavy Fuel Oil to renewable energy, such as rotor sails providing ships with auxiliary wind propulsion, and alternative fuels, such as ammonia and hydrogen are further potential measures (OECD/ITF, 2018a). An important question is how to develop a policy and incentive framework so



Figure 1. Whose emissions? Schematic overview of different actors in the shipping sector (NewClimate Institute, 2019)

that these technical and operational measures are implemented and mainstreamed into the shipping industry to quickly decarbonise the sector in line with the Paris Agreement goals.

There are several barriers to shipping companies taking measures to reduce emissions even if they would save money doing so. These include the “principle agent” problem for some ships, where the owner who makes investment decisions about the ship does not benefit from efficiency measures because they do not pay for the fuel when they let out the ship to others (see Figure 1). However, the most prominent barrier to cost effective and longer-term emissions reductions is uncertainty: uncertainty about what measures are available, how much they cost, how fast the investment will pay for itself based on fluctuating fuel prices; uncertainty about future demand for international shipping; and uncertainty about the

evolving regulatory regime (Maddox Consulting, 2012).

However, data shows that in times of high fuel prices, charterers do take operational measures and actively seek out more efficient ships, creating an incentive for owners to invest in such vessels. Hence, a carbon price could incentivise the shipping sector in deploying technical and operational measures to reduce emissions.

Considerations for market-based measures

Prerequisites for any market-based measure

When implementing a market-based measure for international shipping, several important decisions

need to be made, regardless of what measure is implemented. These are: the definition and selection of compliance and enforcement entities, and how emissions are monitored, reported, and verified (MRV).

- 1) Compliance entity: in theory, it would be easiest to implement a market-based measure upstream, i.e. charge the fuel suppliers, which would then pass on the cost of the market-based measure to ship operators. However, ships can travel long distances without refuelling, so “carbon leakage” is a considerable risk, if ships are able to divert refuelling to ports that do not participate in the market-based measure. Thus, rather than implement the measure upstream, the operator is likely the best suited compliance entity. The carbon price will serve as an incentive for the operator to take operational measures to reduce fuel consumption and GHG emissions.
- 2) Enforcement entity: both flag and port states could enforce a market-based measure. However, various flag states lack the capacity for rigorous enforcement of international standards. Since it is easy for ships to register under a different flag, a market-based measure that relies on flag state enforcement is unlikely to be effective. Therefore, enforcement of a market-based mechanism at ship-level when ships enter a port seems the most promising approach. Approximately 28 of the 100 largest ports in terms of total volume handled already apply environmentally differentiated port fees, where more efficient ships or ships willing to reduce speed in their approach pay a reduced docking fee (OECD/ITF, 2018b). Combined with MRV data (see below) a port could include an emissions levy on ship operators with the payment of port fees that includes the emissions from the vessel since the last time the vessel entered a participating port. This may require a ship charter to verify that previous levy obligations have been paid for previous voyages to avoid having to pay for emissions that occurred previous to the charter’s contract.
- 3) MRV: regardless of the market-based measure selected, data on GHG emissions from each individual ship, and likely for each individual voyage will be necessary to implement the measure. Currently, there are two MRV systems for international shipping: the EU MRV, which applies to all ships sailing to and from EU ports, and the IMO Data Collection System (DCS), which applies to all ships globally. Both systems apply to ships above 5,000 gross tonnage, covering more than 80% of GHG emissions from international shipping. Neither MRV system in its current form suffices for a carbon price, in that the EU system only covers routes to and from EU ports, while the IMO system is not public and does not cover individual journeys. However, both systems could serve as a blue print for a data collection system that would support the implementation of a carbon price.

Four criteria to assess market-based measures

Having established the prerequisites any carbon pricing option must meet, four criteria are especially relevant to assess different market-based measure options:

- 1) Effectiveness in reducing GHG emissions and steering the shipping sector toward decarbonisation;
- 2) Compatibility with the IMO principle of No More Favourable Treatment (NMFT). This principle prescribes that states that have ratified a certain international standard, shall apply this standard to all ships coming into their waters, regardless of flag state.
- 3) Adherence to the UNFCCC principle of Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC). Any market-based measure not including some recognition of CBDR-RC is unlikely to attract widespread support among developing states. However, considering that developing countries account for 76%

of the global national flag tonnage (UNCTAD, 2018), their participation is required to make a market-based measure successful.

- 4) The market-based measure's efficiency in minimising transaction costs and administrative burden.

It is important to note that the fact that a market-based measure should ideally comply with both the NMFT and the CBDTRC principle, but that assigning responsibility for emissions from international maritime traffic is not straight forward, represents a challenge unique to international shipping.

Overview of different market-based measures

We consider three possible market-based measures for international shipping: an offsetting scheme, an emission trading scheme, and a climate levy.

Offsetting

An offsetting scheme requires compliance entities / participants to purchase offset credits to compensate for all or a portion of GHG emissions covered by the measure. These offset credits are generated by reductions elsewhere and would lead to investments outside the sector covered by the scheme. Given that IMO's 'Initial Strategy' specifically calls for *shipping's emissions* to be reduced by 50%, not net emissions, an offsetting scheme that relies on reductions from other sectors may not be an option. An offsetting scheme could, however, theoretically have an impact on emissions from ships, depending on the price level of eligible offsets. We therefore assess the hypothetical option of offsetting international maritime emissions with a focus on what impact such a scheme would have on emissions in the sector.

Low prices will not be **effective** in incentivising the industry to reduce emissions in the shipping sector if buying offset credits is cheaper than reducing their own GHG emissions. In such a case, it is possible that shipping emissions are not reduced by at least 50% by 2050, but instead continue to increase in the com-

ing decades, undermining the temperature limits of the Paris Agreement as well as the Initial Strategy's 50% reduction target.

Furthermore, in order to stay below the 1.5°C temperature limit, it is necessary that all sectors decarbonise. Indeed, the shipping sector has many opportunities to reduce GHG emissions and could radically reduce emission using existing technology and operational measures (OECD/ITF, 2018a). Also, many mitigation opportunities in the shipping sector are relatively inexpensive. Focusing on offsetting emissions rather than investing in mitigation measures and innovation would therefore be a lost opportunity for the shipping sector.

An offsetting scheme could be implemented to adhere with the principle of **NMFT**, but not **CBDR-RC**, as it is not possible to exempt least developing states from the scheme (depending on prices, this could lead to carbon leakage). Moreover, an offsetting scheme does not generate revenues that can be used to compensate developing states for the negative effects of a carbon price¹. Finally, an offsetting scheme would be relatively expensive in terms of **transaction costs** to implement, administer, and compliance, as participants need to purchase offset credits and the scheme would require robust system oversight. Hence, an offsetting scheme would not be a suitable or effective market-based measure for the maritime sector.

Emission trading scheme

The idea of emissions trading schemes is to control the total amount of GHG emitted, but not the price for allowances. The **effectiveness** of an ETS therefore depends on the overall cap and the price level generated. While an ETS provides a high degree of certainty for the overall environmental outcome, the incentive to invest in more efficient technology is variable, which may not ensure a clear transition towards cleaner fuels and may not meet a certain target (such as decarbonisation) in a certain year (for example 2050). Demand for allowances and prices in an



Shifting the load: IMO's strategy calls for shipping emissions to be reduced by 50%.

ETS depends on a large number of factors including overall demand and technological progression.

With an economic slowdown and a corresponding reduction in demand for world trade, carbon prices would fall, and the opposite if economic activity accelerates. Such volatility causes unpredictability for investors. Uncertainty and volatility mean that higher prices would be required to induce the same emission reduction investment behaviour than if future prices rise predictably (Laurikka, 2006; Blyth et al., 2007). The IMO could revise the cap of the ETS, but

such adjustments would likely require lengthy political debates on a regular basis, which would provide further uncertainty to market participants. Therefore, an ETS is likely to represent a suboptimal policy measure to incentivise investments in more efficient low carbon shipping technology.

An Emissions Trading System could be implemented to adhere to the **NMFT** principle. Importantly, because an ETS can generate revenues that could be used to compensate developing countries, it could also support the principle of **CBDR-RC**. ETSs are how-

¹ Under the CDM, a share of proceeds from the sale of certified emission reductions is used to fund the Adaptation Fund. One could theoretically follow the CDM Adaptation Fund approach, where a share of proceeds of offset trading flows to the Fund. It is however unlikely that such a fund would generate sufficient revenues to satisfy CBDR demands.

ever associated with relatively high **transaction costs**, in particular for small shipping companies, because participants in the scheme would have to trade emission allowances – this would likely put smaller companies at a significant disadvantage to larger companies, which have more capacity for hedging with more complex financial contracts.

Climate levy

A climate levy would impose a fee or tax tied to the fuel's carbon intensity or ship's GHG emissions price level could be relatively low in the first year, preventing market distortion or a shock to world trade. The levy could then be increased on an annual basis to provide certainty for investors and make the transition to zero-carbon fuels and technologies attractive such that fossil fuels are phased out by around 2050. By increasing the levy each year, the IMO could account for technological changes in the shipping sector. Several jurisdictions with carbon prices have taken this approach of gradually increasing the carbon price, for example in British Columbia (British Columbia, 2018). A robust predictably rising climate levy could be **effective** in incentivising shipping companies to take operational and technical measures to reduce GHG emissions.

Like an emission trading scheme, a climate levy could be implemented to adhere with both **NMFT** and **CBDR-RC**, by using revenues to compensate developing countries for the adverse impact of the levy on their economies. Moreover, **transaction costs** and administrative burden are likely lower for a climate levy than for an offsetting scheme or an ETS, because participants do not have to engage in purchasing and selling offset credits or allowances and because there does not need to be any market oversight to guard against price manipulation. A levy, when designed properly, provides the most certainty for investors with regard to the future carbon price. For these reasons, a climate levy would be the most promising market-based measure for international shipping.

Next steps

Considering the urgency of addressing the sources of climate change, the IMO should take concrete action with regard to market-based measures soon. The earliest opportunity for IMO Members to further discuss market-based measures and consider proposals is at the next meeting of the Maritime Environmental Protection Committee (MEPC) in 2019. The MEPC is responsible for addressing environmental issues within the IMO. Parties could theoretically adopt a measure at MEPC77 in 2021. Soon after, decisions on the price level, point of application and enforcement, collection of required data, and compensation for developing states could be made.

In the meantime, the IMO should continue to consider additional measures to decarbonise the shipping sector, including a ratcheting of existing efficiency standards, such as the Energy Efficiency Design Index (EEDI), as well as further guidance for operational measures.

Conclusion

International maritime emissions are considerable and expected to increase significantly in the next few decades. However, in order to reach the Paris Agreement temperature goals, it is necessary for all sectors to decarbonise, including the shipping. A carbon price can enhance the development and application of technical and operational measures by incentivising actors in the shipping industry to invest in alternative – low-carbon – fuels and renewable energy; to improve ship design efficiency; and to improve the logistic supply chain. A climate levy is likely to be the most effective market-based measure in reducing maritime GHG emissions, because unlike an ETS, it offers the sector with a stable carbon price. How high the carbon price should be exactly depends on various factors, including fuel prices and the costs of alternatives. Since ships have a life span of 20-30 years, the price on carbon should be high enough that renewable alternatives are competitive with conventional shipping by 2030.

This article is based on a recent NewClimate study on carbon pricing options for maritime emissions. For more information, please see: <https://newclimate.org/2019/03/19/carbon-pricing-options-for-international-maritime-emissions/>.

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Climate Action in Africa: “A Race We Can Win”

A report on the Africa Climate Week in Accra / Ghana

“African policymakers highlight opportunities of National Climate Plans” and “Carbon pricing seen as key tool to drive sustainable development and social benefit”. These are the headlines used on the UNFCCC website to sum up Africa Climate Week.

Organised by the UNFCCC, Africa Climate Week 2019 was held in Accra in Ghana. The entire Climate Week focused on the outcomes from COP24 in Katowice and the upcoming Climate Change Summit hosted by the UN Secretary-General in September this year. The week-long event covered a wide range of climate policy issues and attracted great interest in West Africa. Below, the CMR team presents a brief overview of the event, looking in particular at topics involving the carbon market.

Huge policy relevance in Ghana and in Africa as a whole

In the policy segment at Africa Climate Week (ACW), speakers included Ghana’s President Nana Akufo-Addo, Ghana’s Minister for the Environment, Science, Technology and Innovations Professor Kwabena Frimpong-Boateng, Accra’s Mayor Adjel Sowah, COP24 President Michał Kurtyka and UNFCCC Deputy Executive Secretary Ovais Sarmad. COP President Kurtyka pointed to the dynamic development seen in Africa and the resulting role the continent plays in implementing the Paris Agreement. Deputy Executive Secretary Ovais stressed the importance of climate

change in relation to the SDGs. Many of the presentations focused on how climate action can help to promote sustainable development. President Akufo-Addo underlined the fact that climate change is the biggest threat faced in achieving the SDGs, saying the next twelve years will be decisive. He pointed to Ghana’s efforts in areas such as renewable energy use, e-mobility and afforestation – and to its plans to develop its gas resources. Turning to the donor community, Akufo-Addo called for the provision of simplified access to climate finance.

ACW 2019 sent out positive signals and diverse messages in preparation for the upcoming UN Climate Change Summit to be held in September in New York. Many African states reported enthusiastically on progress achieved at ministerial level in implementing their nationally determined contributions (NDCs). ACW host Ghana is almost ready to publish its NDC implementation strategy. With the new regional Climate Week format, the UNFCCC has succeeded in turning the former regional carbon market conferences (Carbon Forum) into an application-oriented forum for exchange to aid implementation of the Paris Agreement.

Carbon market-focused events

On Tuesday, March 19, a Carbon Pricing & International Markets Day was held by the World Bank’s Carbon Pricing Leadership Coalition (CPLC) in

Carbon Pricing, Markets and Sustainable Development in Africa

On March 19, the Carbon Pricing Leadership Coalition held a full-day event on the topic of carbon pricing. From an African perspective, given the continent's low contribution of just 3% to global emissions, mitigation action alone is not the central issue. What is crucial for the continent is the possibility of making financial resources available to the benefit of broad sections of the African population and to promote sustainable development in Africa – by means of, for example, withdrawing subsidies on fossil fuels or introducing a carbon tax.

Obakeng Molabi, from the private South African utility “Pele Green Energy”, views the carbon tax plus offset option positively and especially welcomes the planning certainty of fixed tax rates and the creation of jobs through a variety of offset projects conducted in the country. Trading emissions with stock prices on the stock market is considered too risky. However, Mandy Rambharos of the South African energy supplier ESKOM expects this to have competitive disadvantages for the steel industry and believes the “just transition” question comes into play in this case. More than 100,000 people are employed in South Africa's coal mining sector.

A Rwandan cooker project funded by the World Bank under the Climate Initiative for Development (CiDev) was presented as an example of the transformation of classic CDM

projects into a larger, sectoral approach. This sees the distribution of modern cookers equipped with biomass gasification technology, fuel being provided in the form of waste wood pellets sold in a subscription scheme at a price of approximately USD 2.15 per week. The model is to be extended to other countries in the region and in the future it will also run under the World Bank's “Standardized Crediting Framework for Scaling Up Energy Access”.

Whether market mechanisms can be used under the Paris Agreement still remains unclear: Does the sale of ITMOs/credits contribute to NDC compliance or climate finance? Can ITMOs only be transferred once an NDC has been achieved? Can ITMOs be sold in the period up to 2029 without affecting the 2030 target? Are only pre-defined sectors entitled to use market mechanisms? Equally important will be the options for transferring current projects from the CDM to Article 6. Interested project developers are invited to secure buyers at an early stage and seek contact with the national climate protection authorities, who in the future will play an extremely important role under Article 6.

More about the CPLC:

<https://www.carbonpricingleadership.org/>

About the Rwandan cooker project:

<https://www.inyenyeri.com/>

Karsten Karschunke

collaboration with the International Emissions Trading Association (IETA). The event was held for the first time in this format during the ACW and attendance was high.

On Thursday, March 21, an event on Piloting Art. 6 - Opportunities and Experiences in Africa was jointly hosted by UNFCCC RCC Kampala, UNDP and GIZ. Issues concerning pilot activities and design elements as well as existing initiatives and pilot projects involving Article 6 activities in Africa were discussed at the event. One important outcome was that, despite the lack of related UN decisions, a great

deal of interest is being shown both by African countries and the private sector in promoting Article 6 in Africa. Exchange of experience between the different regions and countries appears to play an important role in terms of how well prepared and coordinated the countries will be in the upcoming negotiations on Article 6.

From 17 to 18 March, a meeting of the West African Alliance on Carbon Markets and Climate Finance was held. The two-day event comprised a strategic members meeting, a steering committee meeting and a specialist workshop on operationalisation of Article 6



Source: UNFCCC

Carbon pricing as a tool to drive sustainable development and social benefit: Ghana's president Akufo-Addo at the Africa Climate Week.

of the Paris Agreement. For more information, see the article in this issue.

On Friday, March 22, a closed-door meeting was held to discuss the creation of an East African Alliance. East African countries such as Uganda, Kenya, Tanzania, Ethiopia and Rwanda are following the example of the West African Alliance on Carbon Markets and Climate Finance and are developing a similar model for subregional cooperation and exchange. Countries in Africa's southern region are also showing interest in forming a carbon market alliance.

Finally, the Partnership on Transparency in the Paris Agreement, FAO and UNEP DTU presented their support programs and highlighted their cooperation activities to provide regional support. Some countries reported on specific national challenges and their experience with support programmes, and pointed to current capacity gaps. Although many countries are already on the right track, when it comes to MRV systems they continue to require a great deal of support.

Fostering Market Access through Regional Cooperation

West African Climate Alliance Workshop held during African Climate Week

by Karsten Karschunke

The West African Alliance on Carbon Markets and Climate Finance (WAA), which currently comprises 16 member states, aims to provide the states of the West African Economic Area (ECOWAS) with early access to carbon markets and climate finance by means of cooperation and capacity building in line with the Paris Agreement. Back to back with African Climate Week, the Alliance held a two-day workshop on 17-18 March, providing an excellent platform for stocktaking and regional exchange on the current status in climate negotiations. Almost all countries in the WAA and numerous international guests took the opportunity to attend.

Katowice and the remaining points for clarification

Perumal Arumugam, UNFCCC, gave an overview of the status of the negotiations on the rules of implementation for Article 6 of the Paris Agreement following the Climate Change Conference in Katowice (COP24) (cp. 'The rulebook with a missing chapter' elsewhere in this issue). Arumugam made it clear that the failure of the Article 6 negotiations was not only due to the tough position taken by Brazil, but also to the fact that many other Parties could not

agree to some elements of the draft text (for example, non-CO₂ metrics, transfers from inside/outside NDCs, governance of the mechanism, accounting for Article 6.4), thus making it necessary to continue the intensive negotiations in 2019.

It would seem that one especially critical issue for Africa is the possible disadvantage of Article 6.4 in relation to Article 6.2 arising from contributions to the Adaptation Fund, the so-called "Share of Proceeds" (SOPs). When discussing SOPs, the spotlight is placed in particular on the EU, which rejects SOPs not included in the Paris Agreement for Article 6.2. From an African perspective, at a minimum, projects that generate a comparable amount, meaning via a reduction rather than a baseline, should be charged a share of proceeds. No agreement was reached on this in Katowice.

In contrast, according to the negotiators at COP24, the African Group of Negotiators (AGN) is willing to compromise on the "governance structure" for Article 6: The AGN originally believed that the Supervisory Body (SB) should be responsible for Article 6 as a whole, but has now accepted that the Paris Agreement only provides for SB-responsibility in relation to the mechanism under Article 6.4. The African side also regretted the lack of involvement of African min-



Regional cooperation: Participants at a West African Alliance on Carbon Markets workshop.

isters in the last round of negotiations in Katowice, an omission that should be avoided in this year's negotiations so as to increase political representation for African interests.

Work on the ground

The “Climate Finance Innovators”, comprising Perspectives Climate Group and Climatefocus as technical partners of the Climate Alliance, gave an overview of pilot projects for Article 6. Several World Bank programmes were presented, as well as activities in Sweden, Switzerland (Klimarappen, Klik-Stiftung), Japan (JCM) and Canada. For the West African Climate Alliance, “readiness for NDC implementation of Article 6 activities” in Togo and Nigeria was examined. Key elements include building on existing CDM activities, involving local experts and stakeholders, and close coordination of long-term priorities with national climate policy institutions.

AERA, a Climate Alliance contractor, has mapped the West African project pipeline, taking in not just existing CDM activities, but also Gold Standard and VCS/Verra projects. The idea of a West African Carbon Facility was presented, which, in conjunction with Green Bonds, would take over the development and financing of climate project activities and the marketing of ITMOs. In many host countries, this would make it necessary to flesh out the contents of the NDCs, as there is often either no use of market mechanisms (unconditional NDC) or insufficient conditionality in the conditional NDCs, meaning that their use for international transfers appears impossible without modification. An exchange of ITMOs within the Climate Alliance to achieve national NDCs in the sense of a regional emissions trading scheme (ETS) was also mentioned as a possible option for the future.



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Increased visibility: Reaping the benefits of regional cooperation.

Representatives from the World Bank presented a number of pilot initiatives on the carbon market, including an overarching “Standardized Crediting Framework for Scaling Up Energy Access” which, as part of the World Bank’s Climate Initiative for Development (CiDev), is to be used to transition the CDM world into the architecture of the Paris Agreement.

The framework is intended to set out the conditions for national offset projects and is also designed for use in the international carbon market (see CMR 3/2018). For the international marketing of co-benefits in the form of emission reductions, which are the result of many of its projects, the World Bank plans to set up a “warehouse facility” which should also be open to external projects of all kinds and serve as a climate action information and marketing platform.

A consultant working for Environment and Climate Canada reported on his experience with the Pacific Alliance (PA), a free trade alliance between Canada, Colombia, Chile and Mexico. The Alliance had discussed the development of transnational, harmonised MRV systems with very positive peer-to-peer

experience. The conflict between top-down and bottom-up approaches was defused in the form of “co-evolution”: Country-specific systems need to be further developed as part of an ongoing process and in line with international rules. MRV systems were considered for GHG inventories, mitigation activities and climate financing. It is by including these activities on the agenda of a trade alliance that acceptance for and visibility of this issue has been substantially increased in the political arena of the countries concerned.

Further information:

Art. 6 pilots:

<https://www.climatefinanceinnovators.com/publication/moving-towards-next-generation-carbon-markets-observations-from-article-6-pilots/>

West African Project Pipeline: <https://www.west-africacclimatealliance.org/projects>

“Enhancing the Long-Term Position of West African Countries”

While the WAA is an emerging climate cooperation platform in West Africa, the recognition by potential international cooperation partners is growing. On the occasion of Africa Climate Week and the WAA meeting, CMR interviewed WAA colleagues on key questions, which are presented in the following. We thank Asmau Jibril (Assistant Chief Scientific Officer, Dept. of Climate Change, Federal Ministry of Environment, Nigeria), Rachel Boti-Douayoua (Head of Mitigation Unit, Ministry of Environment, Ivory Coast), Ousmane Fall Sarr (Coordinator of the West African Alliance, Senegal) and Samba Fall (Program Officer, ENDA Energy Dakar, Senegal) for providing their insights on the ongoing work and the expectations of the West African Alliance.

What is the overall aim of the WAA initiative and how does the initiative plan to achieve this aim?

Since the adoption of the Kyoto Protocol, African countries in general and West African particularly have not benefited from the flexibility mechanism (CDM) initially dedicated to them as a way of contributing to reducing global GHG emissions, while ensuring sustainable development. The main reasons why these mechanisms did not work well for Africa, was due to the fact that: (i) complexity of rules and procedures, (ii) high transaction cost, (iii) lack of local

capacities to develop projects, (iv) upfront and infrastructure financing barriers, (v) the small size of projects.

However, during the past 6 years, thanks to a lot of reforms aiming to streamline and facilitate the development of CDM projects, many CDM PoAs have been developed in the continent and in West Africa.

The Alliance, initiated in 2017, aims to enhance the long-term position of West African countries to participate in international carbon markets and access results-based climate finance for their NDC implementation. To achieve this aim, the Alliance has set the following objectives:

- Foster active participation by West African delegates in the UNFCCC negotiations on market mechanisms, transparency, technology transfer and climate finance;
- Promote access to market mechanisms and climate finance opportunities on national and sub-regional level;
- Pilot the transition of CDM related capacities and activities to the Paris Agreement Article 6 context;
- Support Article 6 pilot experiences in the sub region while sharing implementation knowledge in the negotiations and vice versa



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Bright future: Solar technologies offer vast potential for the West African region.

What is the significance of WAA for the West African Region and in how far is it embedded in regional climate policies?

The West African Alliance is an organisation created by and for West African countries. The Alliance has developed partnerships with key West African institutions and entities like BOAD, UNFCCC's RCC, ECOWAS Commission, ECREEE, etc. The Alliance can be considered as an advocacy, consultative, coordination, technical/financing support and capacity building organisation on carbon Pricing and climate finance for West African countries and institutions.

WAA in the West African region is a platform to gather country members under one important topic, i.e. markets and climate finance. It is a way to mutualise forces and knowledge around carbon markets and climate finance.

For the time being, there is not a clear regional climate policy for West Africa. Nevertheless, all West African countries have elaborated their NDCs and some have planned to use markets and climate finance in the implementation phase. Since under

the NDCs each country is trying to develop its own strategy, the WAA will serve the members operationalize better in their respective countries the experience gained from working together in the WAA.

What are your expectations vis-à-vis the Paris Agreement's Article 6 and how do you prepare for possible new mechanisms?

The WAA expectations are that a consensus is reached and that a decision text on Article 6, including the African needs, is adopted.

It is already known that new mechanisms intend to achieve NDC goals so the WAA is preparing in setting-up a local mechanism, exploring domestic carbon pricing, conducting studies in order to set up appropriate infrastructures, conducting national consultations to get everybody involved.

The WAA is actively involved in the negotiations where guidelines, rules, modalities and procedures are defined and approved. The Alliance has also provided support for readiness

to Art. 6 for two countries: Nigeria and Togo. Furthermore, the Alliance is involved in piloting a new mechanism that might be suitable for Article 6 operationalisation (examples: Standardized Crediting Framework, ITMO transaction piloting with Swiss Klik Foundation).

How do you evaluate the Art. 6 readiness in the region and which support needs do you see?

Article 6 readiness in the region is still progressing. There are support needs in awareness, capacity building, having a strong MRV system, financial and technical support, having a wide stakeholder engagement and intense training of negotiators in the region.

You have assembled a West African project pipeline. Can you inform readers about this pipeline, p.ex. with regard to project types, regional distribution and methodologies, and the like?

We are still working on a project pipeline, a new one different from the CDM projects pipeline we had previously. Focus will be made on mitigation projects with real impact on social life and relevant at the national level. A call for projects will be launched soon. The WAA through AERA, a technical partners, identified a portfolio of projects that have a potential for ITMOs generation.

You are about to roll out Art. 6 pilot activities. Can you briefly describe these and the goals associated with them?

The Alliance is about to roll out the following activities:

1. Facilitation of ITMO transactions between the Swiss KLIK Foundation and some West African countries,
2. Implications of the Enhanced Transparency framework for Article 6,
3. Transitioning of CDM projects with the Standardised Crediting Framework in Senegal, where a PoA is currently being implemented with a first crediting period ending in 2024,
4. Development of carbon bonds and a creation of a West African Carbon Facility with BOAD,
5. Linking carbon markets and climate finance with BOAD, pilots will be some West African projects in the pipeline developed by the Alliance,
6. Creation of a national stakeholder network on carbon markets in all Alliance countries.
7. The Swedish Energy Agency (SEA) commissioned an Article 6 Virtual Pilot Study specifically on renewable energy, mini grids to explore how the Article can be utilised to promote electrification in Nigeria. The pilot contributes to the country's renewable energy targets as stipulated in the country's NDC. Mitigation outcomes generated through the SEA-Nigeria Virtual Pilot that go beyond the country's unconditional mitigation target would be available to international investors as Article 6.4 units.
8. Ivory Coast is exploring how carbon pricing could be implemented at the national level. It could be considered as a pilot project since within the West African region, it is the first of its kind with the support of the PMR and CPLC. The Goal is to find alternatives for CDM project developers, incentivise them through a domestic market, and enable the country to meet its NDCs goals. It is a first step, the experience gained, and the lessons learnt from that will help in a near future better shape a regional carbon market. It could be a predictable way to estimate the mitigation outcomes. This is a tool and shall be associated with the existing initiatives going on in the country under the NDC Partnership, the GCF and others.

CARBON MECHANISMS REVIEW

BMU brochure on African carbon market

New publication showcases BMU supported projects and initiatives fostering market-based mitigation activities on the African continent.

Download at

www.carbon-mechanisms.de/en/Africa_2019

Carbon Pricing Report released

Annual Report of Carbon Pricing Leadership Coalition reviews current policies and report on the initiative's activities. Available at

www.carbon-mechanisms.de/en/CPLC_Rep_2019

Glossary

All Carbon Market terms and abbreviations are explained in detail in the glossary on the JIKO website. You can view the glossary here:

www.carbon-mechanisms.de/en/service/glossary/