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**ARTICLE 6
PILOTING:
STATE OF
PLAY AND
STAKEHOLDER
EXPERIENCES**

On behalf of:



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DISCLAIMER

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PREFACE

On 4 November 2016, the Paris Agreement (PA) entered into force less than eleven months after its adoption in December 2015. The speed with which countries ratified the agreement and met the double threshold of 55 Parties and 55% of global emissions compares favourably in international policy in recent years. The approach of the PA to climate change mitigation, including its Nationally Determined Contributions (NDCs) and cooperative approaches among Parties under Article 6, is one that is fundamentally decentralised in nature. Its provisions set out parameters within which countries are to take climate action and ratchet up ambition over time, but are neither prescriptive of the actions those countries are to undertake nor the particular approaches to cooperation.

In relation to international carbon markets, future guidance to be adopted by the Parties to the Agreement will have to consider the nexus of NDCs, accounting and the various mechanisms for implementing the voluntary cooperation that countries will engage in. It will need to cover in particular the avoidance of double counting, additionality issues of Article 6 mechanisms and other issues that could jeopardise environmental integrity in the generation and transfer of mitigation outcomes, as well as ensuring transparency, good governance and the necessary institutional infrastructure. It will also need to consider the key role that carbon markets can have in enabling and encouraging greater mitigation ambition and in bringing about sectoral transformation. In particular the question of how overall ambition of the PA can be increased over time will become an increasingly important but also contentious topic. The fact that negotiations have been unable to agree on Article 6 rules for two years in a row is an indication of the latter.

This third edition of the landscape of Article 6 pilots aims to help negotiators and other stake-holders to understand real, on the ground approaches. We hope that this understanding will help to forge an agreement on Article 6 rules at COP26. The study is supported by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The analysis, results and recommendations in this paper represent the opinion of the authors and are not necessarily representative of the position of the BMU.

We continually invite further updates, information and suggestions on existing or new Article 6 piloting activities or initiatives.

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ACRONYMS

AB	Adaptation Benefit
ABM	Adaptation Benefits Mechanism
ABOA	Adaptation Benefits Offtake Agreement
ACTFCN	African Climate Technology and Finance Center and Network
ADB	Asian Development Bank
AfDB	African Development Bank
AGN	African Group of Negotiators
BAU	Business-as-Usual
BMU	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BTR	Biennial Transparency Report
CA	Corresponding adjustment
CARP	Centralized Accounting and Recording Platform
CCF	Climate Cent Foundation
CDM	Clean Development Mechanism
CEF4SAPP	Clean Energy Fund for the Southern African Power Pool
CER	Certified Emission Reductions
CI-ACA	Collaborative Instruments for Ambitious Climate Action
Ci-Dev	Carbon Initiative for Development
CMP	Carbon Market Program
CO ₂ e	Carbon dioxide equivalent
COP	Conference of the Parties
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CP2	Second commitment period of the Kyoto Protocol
CPF	Carbon Partnership Facility
DEHSt	German Emissions Trading Authority
DMC	Developing member countries
DNA	Designated National Authority
EAA	Eastern Africa Alliance on Carbon Markets and Climate Finance
EBRD	European Bank for Reconstruction and Development
EC	Executive Committee
ECA	Export Credit Agency
EDF	Environmental Defense Fund
EEA	European Economic Area
ERPA	Emission Reductions Purchase Agreement
ETS	Emissions Trading Systems
EU ETS	European Emission Trading System
EU	European Union
FAPA	African Private Sector Assistance
GCF	Green Climate Fund
GEF	Grid Emission Factor
GGETA	Norwegian Greenhouse Gas Emissions Trading Act
GGGI	Global Green Growth Institute
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoS	Government of Switzerland
ICROA	International Carbon Reduction and Offset Alliance
IKI	International Climate Initiative

ITMO	Internationally transferred mitigation outcomes
JCM	Joint Crediting Mechanism
KliK	Swiss Foundation for Climate Protection and Carbon Offset
LED	Low Emissions and Development Strategies
LoI	Letter of Intent
LULUCF	Land Use, Land Use Change and Forestry
MAAP	Mitigation Action Assessment Protocol
MADD	Mitigation Activity Description Document
MAIN	Mitigation Activity Idea Note
MATS	Mobilizing Article 6 Trading Structure Program
MDB	Multilateral Development Banks
METI	Ministry of Economy, Trade and Industry
MOPA	Mitigation Outcome Purchase Agreement
MoU	Memorandum of Understanding
MRV	Monitoring, Reporting and Verification
NACAG	The Nitric Acid Climate Action Group
NAMA	Nationally Appropriate Mitigation Action
NCRE	Non-conventional renewable energy
NDC	Nationally Determined Contributions
NEFCO	Nordic Environment Finance Corporation
NGO	Non-Governmental Organization
NIR	National Inventory Report
NMA	Non-market approach
NPI	Nordic Partnership Initiative on Upscaled Mitigation Actions
OMGE	Overall Mitigation in Global Emissions
PA	Paris Agreement
PAF	Pilot Auction Facility for Methane and Climate Mitigation
PCN	Project Concept Note
PIN	Project Idea Note
PMI	Partnership for Market Implementation
PMR	Partnership for Market Readiness
PoA	Programme of Activities
RCC	Regional Collaboration Centre
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RPS	Renewable Portfolio Standard
SAPP	South African Power Pool
SBSTA	Subsidiary Body on Technological and Scientific Advice
SCF	Standardized Crediting Framework
SDG	Sustainable Development Goals
SDI	Sustainable Development Initiative
SEA	Swedish Energy Agency
SEMED	Southern and Eastern Mediterranean
SOP	Share of Proceeds
SWS	Solid Waste Sector
TCAF	Transformative Carbon Asset Facility
UBA	German Environment Authority
UNEP DTU	United Nations Environment Program Technical University of Denmark

UNFCCC	United Nations Framework Convention on Climate Change
WACC	West African Alliance on Carbon Markets and Climate Finance
WAPP	West African Power Pool
WCI	Western Climate Initiative
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

The Paris Agreement (PA) heralds a new era of international carbon market mechanisms. Its bottom-up nature and the fact that all countries under the PA have national commitments (nationally determined contributions, NDCs) to reduce greenhouse gas emissions, pose new challenges to the design of international carbon markets and related transactions. Under Article 6 of the PA, Parties can either pursue cooperative approaches (Article 6.2) or rely on a multilateral mechanism (Article 6.4) for the generation of internationally transferred mitigation outcomes (ITMOs). These instruments are to play a key role in enhancing national and global mitigation ambition, thus emphasising the transformational potential of future carbon markets.

International negotiations on the finalisation of a rulebook for international carbon market co-operation in the context of the PA have failed at the 24th Conference of the Parties (COP24) in Katowice as well as at COP25 in Madrid in 2019. Negotiations have, however, progressed considerably on many important aspects. They are now scheduled for finalisation at COP26 in Glasgow in November 2021.

Despite the continued uncertainty regarding the finalisation of the Article 6 rules, practical Article 6 piloting is continuing apace and the landscape of Article 6 piloting initiatives evolves. Article 6 host country readiness work is progressing and the voluntary carbon market is starting to change in anticipation of the Article 6 rules. Since 2018, there has been a proliferation of Article 6 piloting activities. Testing how Article 6 cooperation could work in practice in order to inform negotiations as well as getting early access to sources of emissions credits is seen as important to fulfil national mitigation commitments. Both buyer and host countries actively contribute to the pilots.

This report is the 3rd edition of a series started in 2019 and provides an updated overview of all aspects related to Article 6 piloting and its operationalisation. As a framework for the analysis, we now apply a 'concentric ring' model that clearly differentiates between piloting activities that aim at generating ITMOs or adaptation benefits (ABs), initiatives that will eventually be governed by Article 6 rules (e.g. the linking of Emissions Trading Systems, ETS) and the enabling environment, which is essential to drive

piloting efforts forward. In an additional analytical step, we classify piloting activities in the inner circle according to three different phases: the preparatory phase, the pilot phase and the full implementation phase. Moreover, we summarise current stakeholder experiences with Article 6 piloting and provide an overview of our insights from broad and deep stakeholder consultations, including the views of buyer countries, host countries and project developers.

This conceptual approach allows to capture the diversification of the Article 6 piloting landscape with new players entering the piloting community (e.g. Global Green Growth Institute (GGGI), International Climate Initiative (IKI)) and the recognition that the building of capacities as well as the carbon market infrastructure, the promotion of research, the implementation of national regulatory processes and the exchange of information is pivotal to overcome barriers to the successful implementation of pilots.

Our analysis shows that **most of the piloting activities are currently in the preparatory phase**. Only a few of them have progressed into the pilot phase, signing a bilateral agreement – Switzerland and Peru having signed the first Article 6 specific bilateral agreement – and are advancing on establishing mitigation outcome purchase agreements (MOPAs). The frontrunners are Japan and the 17 host countries of the Joint Crediting Mechanism (JCM), which is the only activity that has reached full implementation to date.

Different factors have **slowed down the development of Article 6 piloting activities since 2019**, shown by the reduction of the annual number of new initiatives. On the one hand, the continued absence of an agreement on Article 6 rules is contributing to this circumstance and, on the other hand, large parts of the piloting community seem to be waiting for the emergence of ‘lighthouse activities’ that can lead the path forward. The Swiss-Peruvian agreement may become such a lighthouse; there are indications that a number of countries are now developing similar agreements. Another factor that has contributed to the gradual pace is the ongoing COVID-19 pandemic. However, the Article 6 piloting community has shown a high degree of resilience as **the impacts of the COVID-19 pandemic have resulted in activity-specific delays** but not terminated any initiatives.

While buying countries usually initiate the development of cooperative approaches, host countries take a more cautious stance. This can be due to host countries having more to lose in the context of the PA as compared to the Clean Development Mechanism (CDM), where they did not have emission targets. Mitigation outcomes become national assets under the PA and host countries need to decide wisely on which outcomes to transfer in order not to endanger the achievement of their own NDC commitments. In this context, the host countries need to ensure oversight and introduce the necessary policy frameworks to serve as guardrails for Article 6 participation of entities wanting to create and sell mitigation outcomes. To date, private sector participation in Article 6 pilots has been limited.

While Article 6 activities are confronted with multiple barriers, none have been an actual deal-breaker. Enabling initiatives that can support Parties in moving further along the implementation chain are crucial to overcome barriers. This seems to be increasingly recognised as such initiatives are emerging in larger numbers.

A successful conclusion of Article 6 negotiations at COP26 is not seen as a necessary condition for the continuation of Article 6 pilots. Many pilot developers see the accounting rules under the Enhanced Transparency Framework specified by paragraph 77d of the decision 18/CMA.1 as a sufficient basis for collaboration. Others build on the 19 'San José principles for High Ambition and Integrity in International Carbon Markets' signed by over 30 countries.

However, another **failure to establish clear rules for Article 6 would be a severe setback for multilaterally-governed carbon markets.** Reaching the scale of international carbon markets necessary to enhance ambition commensurate with the long-term targets of the PA, will not be possible in a world of fragmented bilateral initiatives. Therefore, reaching an agreement on the Article 6 rulebook at COP26 is essential to ensure the transformational potential of future carbon markets.



1. INTRODUCTION

International carbon markets have existed for over two decades under the Kyoto Protocol (KP). The next generation of carbon markets is governed by Article 6 under the Paris Agreement (PA) and is positioned to play a key role in supporting countries in achieving their nationally determined contributions (NDCs) as well as harnessing international cooperation and enabling more ambitious climate action. While the multilateral rules have yet to be finalised, various stakeholders have already moved toward conceptualising and implementing practical Article 6 pilot activities as well as initiatives that support the implementation of Article 6. Early observations and experiences with Article 6 piloting were captured in the flagship study *Moving towards next generation carbon markets: Observations from Article 6 pilots* published under the *Climate Finance Innovators* project in two editions in 2019.

The third edition of this series builds on these previous editions. We provide a more refined and conceptually more nuanced overview of the continued developments and progress made in piloting Article 6. One well-known resource used for tracking the development of new Article 6 pilots is the Article 6 Pilot Pipeline Database developed by the UNEP DTU Partnership, which is updated regularly with recently announced pilots¹. We go beyond the UNEP DTU Database with a detailed assessment to explain the role and impact of the various Article 6 piloting activities. Detailed factsheets on each pilot and initiative presented complement the analysis.

We build our analysis on a detailed categorisation of Article 6 pilot activities. Our ‘concentric ring’ model clearly differentiates between piloting efforts that aim at generating Internationally transferred mitigation outcomes (ITMOs) or adaptation benefits (ABs), initiatives that will eventually be governed by Article 6 rules (e.g. ETS linking) and initiatives generating the enabling environment which is essential to drive piloting efforts forward. Moreover, the study showcases the experiences and insights of relevant stakeholders engaged in Article 6 piloting, including buyer countries, host countries and project developers. The stakeholder experiences and insights are drawn from interviews and written consultations with stakeholders. The activity-specific factsheets were reviewed by the respective stakeholders to ensure accuracy.

To set the scene, we first provide a brief overview of the current status of the Article 6 negotiations as well as generic Article-6-related developments outside the negotiations. We then illustrate the Article 6 pilot landscape, whereby we break down the types of Article 6 cooperation using the ‘concentric ring’ model and assess in which phase of implementation they are currently in. Following this, we highlight the central messages from stakeholder experiences and insights into piloting Article 6. Three annexes corresponding to a respective ring of our conceptual model provide factsheets with key information on all covered pilot activities and initiatives.

¹ The Article 6 Pilot Pipeline Database developed by the UNEP DTU Partnership can be downloaded here: <https://www.cdmpipeline.org/>

2. ARTICLE 6 NEGOTIATIONS AND PRACTICAL IMPLEMENTATION

This section will first outline the current status of United Nations Framework Convention on Climate Change (UNFCCC) rules and negotiations on Article 6 describing Article 6 related action happening on the ground. Both parts of the section aim to provide the context in which current piloting efforts are evolving. Regarding the current status of UNFCCC rules and negotiations, it is important to understand to which extent the pilots can draw upon the latest iterations of the negotiation text and how the bigger context influences the pilots.

2.1. CURRENT STATUS OF UNFCCC RULES AND NEGOTIATIONS

Parties to the PA have been negotiating the multilateral rules for international cooperation in the context of Article 6 of the PA for five years. The rules shall include the following key elements:

- Guidance on cooperative approaches, referred to in Article 6.2, regulating the use of ITMOs and detailing reporting requirements and rules for avoiding double counting.
- The rules, modalities and procedures of a multilaterally governed crediting mechanism, established by Article 6.4.
- The modalities of a work programme to promote non-market approaches under Article 6.8.

In 2018, the Article 6 negotiations could not be concluded and Article 6 therefore became the only article of the PA that could not be operationalised in the 'Paris Rulebook', adopted at the 24th Conference of the Parties (COP24) in Katowice. The failure to reach an agreement was repeated again in 2019 at COP25 in Madrid 2019, even though negotiations progressed on many important aspects and an agreement appeared within reach. Some negotiators expressed frustrations at the lack of agreement on the finishing lines, while other negotiators expressed relief over the fact that a "bad deal" was avoided as otherwise the integrity of PA carbon markets would have been jeopardised. The negotiations now aim to be concluded at COP26 scheduled for November 2021.²

² The continuation of Article 6 negotiations will be based on the three last iterations of the negotiation text of 13-15 December 2019 for the three different components of Article 6 which were forwarded to the Subsidiary Body on Technological and Scientific Advice (SBSTA). For the draft Presidency texts, please see: Article 6.2 – [13 December](#), [14 December](#), [15 December](#); Article 6.4 – [13 December](#), [14 December](#), [15 December](#); Article 6.8 – [13 December](#), [14 December](#), [15 December](#).

CRUNCH ISSUES IN ARTICLE 6 NEGOTIATIONS

The remaining key crunch issues include:³

- If and how cooperative approaches under Article 6.2 must deliver a mandatory contribution to adaptation finance.⁴
- If and to what extent pre-2020 Certified Emission Reductions (CERs) from the CDM may be used and/or internationally transferred for use in the context of post-2020 NDCs (Hoch et al. 2020).
- Which baseline setting approaches will be eligible for the Article 6.4 mechanism and to what extent these approaches should be more stringent than those used in the CDM.
- How to operationalise the objective of delivering an “overall mitigation in global emissions”, and how cooperative approaches have to contribute to this objective (Michaelowa et al. 2020b).
- If and for what period, host countries would not have to undertake corresponding adjustments for sold Article 6.4 emission reduction credits generated ‘outside’ of their NDC, and how ‘outside’ of the NDC is defined (Sharma et al. 2020).

These political issues concerning Article 6 negotiations related to adaptation finance, ‘compensation’ of CDM project developers whose credits are not eligible anymore in the post-2020 carbon markets and ‘ambition’ of the Article 6 cooperation have caused the prolonged deadlock in finalizing multilateral rules. Still, there were significant advances in the negotiations on many technical issues⁵ that need to be taken into account by Article 6 piloting initiatives.

AREAS OF AGREEMENT IN ARTICLE 6 NEGOTIATIONS

With regard to the Article 6.2 guidance, Parties converged on the participation requirements for engaging in international market-based cooperation. These requirements include authorisation and approval processes, having access to a registry able to track ITMOs from authorisation to transfer and cancellation as well as having submitted the latest national inventory report (NIR) under the Enhanced Transparency Framework. ITMOs must be real, verified and additional mitigation outcomes, which include emission reductions or removals as well as mitigation co-benefits of adaptation action or from economic diversification. Information on the quality of mitigation

³ There were no remaining crunch issues anymore for the draft text on non-market approaches (NMAs) under Article 6.8 at COP25. However, all issues of Article 6 are considered one ‘package’ and therefore the draft text on Article 6.8 has not been adopted. There was no consensus on the operationalization of the governance framework and a work programme on NMAs though and some Parties did not like the identified compromises.

⁴ A share of proceeds for adaptation is established under the Article 6.4 mechanism. An administration share of proceeds or fee is not foreseen to be established through the Article 6.2 guidance at the moment, so governance and infrastructure costs will be most likely borne by participating Parties. For an in-depth discussion of the issue, please see: Michaelowa et al. 2019.

⁵ It should be stressed that this is the authors’ assessment of areas of convergence in currently ongoing negotiations. As international negotiations follow the principles “nothing is agreed until everything is agreed”, these anticipated rules may still be subject to changes.

outcomes, together with information on the environmental integrity of the respective cooperative approach must be submitted by Parties in initial, annual and regular reports (Michaelowa et al. 2020b).

Quantitative as well as qualitative information to ensure transparency on cooperative approaches and track ITMOs is to be stored in both national and international infrastructures. To this end, there will be a Centralised Accounting and Recording Platform (CARP) maintained by the UNFCCC Secretariat. CARP will include an Article 6 database.

The authorisation for first transfer of an ITMO, including for ITMOs transferred for use in the context of other international mitigation purposes such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) – or potentially in the voluntary carbon market⁶ will trigger a corresponding adjustment (CA)⁷, to be undertaken to the annual emission balance of the NIR or to another suitable indicator if the ITMO is not expressed in carbon dioxide equivalents (CO₂e). Parties have also identified one approach to account for ITMO transfers in the context of multi-year NDC targets and two suitable approaches for accounting in the context of single-year NDC targets. A country has to apply the selected approach consistently throughout the NDC implementation period (see Sharma et al. 2020).

Parties advanced well with regard to outlining the activity cycle of the Article 6.4 mechanism (Kreibich 2020). It will be similar to the CDM activity cycle, with an additional step for authorisation for international transfers of Article 6.4 emission reduction credits. In addition to the projects and programmes supported by the CDM, the Article 6.4 mechanism will also allow the implementation of additional types of activity (e.g. policies), if agreed by the Supervisory Body. In addition, Parties have identified key overarching principles for Article 6.4 methodologies to respect environmental integrity, such as methodologies being transparent and conservative, encouraging an increase in ambition over time, being consistent with the NDC and contributing to emission reductions in the host Party as well as reaching the PA's long-term objectives. Crediting periods for activities are likely to be five years, renewable twice, or ten years non-renewable (with potential exceptions for forestry and land-use activities). Last but not least, Parties advanced significantly on identifying and refining a compromise on the transition of CDM activities towards the Article 6.4 mechanism after host country approval and an eligibility check, with a fast-track procedure for small-scale and programmatic activities.⁸

⁶ The link to the voluntary carbon market still lacks clarification in the context of the draft Article 6.2 rules

⁷ Corresponding adjustment is done in form of a double entry bookkeeping: The selling Party 'un-counts' the mitigation outcome, i.e. 'adds' the respective amount of emissions to the reported emissions level and the buying Party 'counts' the mitigation outcome, i.e. 'deducts' the respective amounts of emissions from its emission level.

⁸ For an in-depth discussion, please see Hoch et al. (2020)

OPEN ISSUES IN ARTICLE 6 NEGOTIATIONS

Some regulatory issues need further clarification. For instance, the reporting and review cycle for Article 6 activities needs to be synchronised with the overarching Enhanced Transparency Framework and processes for NDC accounting (Michaelowa et al. 2020). Accounting requirements for host countries in the context of voluntary carbon market activities need to be specified, if applicable, specifically regarding the meaning of “other purposes” (Greiner et al. 2019a).

What is the role of emission avoidance, which is an important aspect of Reducing Emissions from Deforestation and Forest Degradation (REDD+) activities, in the context of the Article 6.2 guidance? This leaves open whether international REDD+ transfers can be undertaken. Furthermore, the accounting rules for ITMO transfers in other metrics need to be specified in more detail to be implementable by Parties in a robust manner.

We would like to stress that adopting the Article 6 rules at COP26 will not lead to the full operationalisation of international market-based and non-market cooperation. As has been the case with the Kyoto Mechanisms after the adoption of the Marrakech Accords in 2001, further technical work will continually be needed to resolve practical challenges in implementing Article 6 activities, on governing the interplay between Article 6 and other parts of the PA rulebook as well as other multilateral environmental agreements with climate impacts. This refers to, among others:

- Operationalising safeguards related to permanence, leakage, and negative impacts of mitigation activities, both in the context of the Article 6.2 guidance and the Article 6.4 mechanism.
- Ensuring efficient UNFCCC-internal institutional coordination necessary for a smooth transition from the CDM towards the Article 6.4 mechanism. Here, a close coordination of the CDM EB and Article 6.4 Supervisory Body is particularly important for the transition of activities and the revision of CDM methodologies for use under the Article 6.4 mechanism (Hoch et al. 2020).
- Operationalising the link to different types of NDC targets, for instance the link of carbon market activities to intensity targets (Michaelowa et al. 2019).
- Refining the institutional interplay with other multilateral environmental agreements, e.g. Kigali Amendment of the Montreal Protocol (hydrofluorocarbons mitigation) and CORSIA (Hoch et al. 2019).
- Operationalising the links of non-market approaches with adaptation (Article 5,7), climate finance (Article 9), technology transfer (Article 10) and capacity building (Article 11) (Michaelowa et al. 2020c).

Given growing frustration with lack of progress in multilateral negotiations, over 30 countries wanting to engage in Article 6 formed a coalition

during the last days of COP25. It is based on 19 'high integrity principles', the so-called San José Principles (see Figure 1).

<p>AMBITION & INTEGRITY</p>	<ul style="list-style-type: none"> • Ensure environmental integrity and enable the highest possible mitigation ambition • Deliver an overall mitigation in global emissions • Prohibit the use of pre-2020 units toward PA and other international goals • Apply allocation and baseline methodologies that support domestic NDC achievement and contribute to PA's long-term temperature goal • Ensure incentives to progression and support all Parties in moving toward economy-wide emission targets • Avoid locking in levels of emissions, technologies or carbon-intensive practices incompatible with PA's long-term temperature goal
<p>ACCOUNTING & TRANSPARENCY</p>	<ul style="list-style-type: none"> • Ensure that double counting is avoided and that all use of markets toward international climate goals is subject to corresponding adjustments • Use CO₂-equivalence in reporting and accounting, fully applying the principles of transparency, accuracy, consistency, comparability and completeness • Use centrally and publicly accessible infrastructure and systems to collect, track, and share the information necessary for robust and transparent accounting
<p>SUSTAINABLE DEVELOPMENT & EQUITY</p>	<ul style="list-style-type: none"> • Contribute to quantifiable and predictable financial resources to be used by developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation • Recognise the importance of capacity building to enable the widest possible participation by Parties under Article 6

Figure 1: San José Principles: Overview

Source: Authors

2.2. ARTICLE 6-RELATED DEVELOPMENTS ON THE GROUND

Despite the uncertainty outlined in the preceding section, practical Article 6 piloting is continuing apace and the landscape of Article 6 piloting initiatives evolves. Article 6 host country readiness work is progressing and the voluntary market is starting to change in anticipation of Article 6 rules. Before analysing the Article 6 piloting initiatives in detail in section 3, we look at the broader landscape.

GENERAL ASPECTS OF ARTICLE 6 PILOTING

The longer regulatory uncertainty persists, the more important Article 6 pilot initiatives become to inform the international community of what workable solutions could look like, identify practical questions and speed up implementation once the rules are agreed. Moreover, practical mitigation action may have the potential to transcend politics by demonstrating the benefits of international carbon market activities as long as they increase ambition in participating countries and promote sustainable development. Even after the Article 6 rulebook has eventually been agreed, it will continue to evolve and Article 6 piloting can accelerate this process through providing practical experiences.

Since 2018, there has been a proliferation of Article 6 piloting activities that aim to test or inform the draft rules ahead of a multilateral agreement under the PA against a backdrop of interest from both buyer and host countries wanting to cooperate through Article 6. While this development seems to have slowed in 2020, due to a number of reasons that are more closely explored in chapter 4 below, some further advancements have been made. In a clear indication of the resurging relevance of global carbon markets to deliver the PA's objectives, in 2020, new players such as the Global Green Growth Institute (GGGI) and Germany's International Climate Initiative (IKI) have entered the Article 6 piloting community by announcing new Article 6 activities. Meanwhile, previously existing initiatives such as the Swiss Foundation for Climate Protection and Carbon Offset (KliK) and the Swedish Energy Agency (SEA) have made steps towards implementation and have issued further calls for proposals for Article 6 activities.

Moreover, both conceptual and more advanced Article 6 pilots show a certain degree of convergence among market actors about the relevance of key cornerstones of Article 6 implementation. For instance, all piloting initiatives have emphasised the importance of how to do a CA in NDC accounting. Particularly questions on the institutional infrastructures needed for a CA arise, e.g. whether national, multilateral or private registries are used and how authorisation by buyer and seller Parties can be done.

Until today, however, all Article 6 pilot initiatives are preparatory at best. Actual Article 6 transactions with ITMO transfers and CAs will only be possible once the underlying infrastructures have been created at the level of the UNFCCC and reporting templates have been established for Parties, i.e.:

- The creation of the Article 6 database and the CARP.
- The adoption of reporting outlines for initial reports and regular information and electronic formats for the annual information by the CMA.
- The application of CAs in Parties' NIRs starting in 2024 .

HOST COUNTRIES PREPARING FOR ARTICLE 6

Developments on the ground continue to also see an increase in potential host countries wanting to prepare for Article 6 and initiatives being established to specifically support this process. Several initiatives aim to build Article 6 capacity in these countries, including the West African Alliance on Carbon Markets and Climate Finance (WACC) and Eastern African Alliance on Carbon Markets and Climate Finance (EAA), the Article 6 Support Facility of the Asian Development Bank (ADB) and the Mobilizing Article 6 Trading Structure (MATS) programme led by GGGI.

With the support of these initiatives, countries are making steps to either develop or already implement the institutional infrastructures, capacities, processes, research and frameworks needed to properly engage in Article 6 market mechanisms. However, several challenges exist in implementing

these aspects including that the rules are new and processes need to be set up. The lack of finalised Article 6 rules which implies a high degree of uncertainty on how or to which extent procedures can be developed on the operational level. Moreover, many of the Article 6 infrastructures and processes that need to be in place are both costly and lengthy and therefore, many host countries continue to require financial and capacity support to implement them. Various initiatives, including the NDC Partnership as well as the ADB's Article 6 Support Facility try to address this need. It is thus very important to foster trust in buyer and seller country cooperation to bilaterally find solutions to address gaps in the current draft Article 6 rules.

In terms of piloting Article 6, communication streams and dialogues between host countries and buyer countries have intensified, enabling both Parties to clearly explain any remaining gaps and needs that must be addressed in order to kick-start pilot activities and allow for full transparency during this process. A recent example includes an 'Article 6 Stakeholder Roundtable' hosted by the WACC and the EAA with investor countries and organisations such as Switzerland, Sweden, Japan, the UK, the World Bank and the Nordic Environment Finance Corporation (NEFCO). Moreover, together with the MDB Working Group on Article 6, the World Bank has established a voluntary Climate Market Club that aims to support countries in piloting Article 6 and share experiences, insights and lessons learned based on practical experience. The Club is expected to include around 15 countries, whereby members can invite relevant stakeholders from the public or private sector to participate (World Bank 2020).

Over the past years, countries have been updating their NDCs. In this context, many governments specifically mention carbon markets or at least provide a clearer demarcation of their unconditional and conditional targets, which is relevant for Article 6 implementation. By November 2020, 15 Parties had submitted their updated NDCs with many more to do so in the next months.

THE THORNY ISSUE OF CDM TRANSITION

At COP25 in December 2019, no one could foresee that the COVID-19 pandemic would prevent further negotiations in 2020, thereby prolonging the regulatory uncertainty for international carbon markets to a point well after the start of the first NDC implementation period. This is particularly relevant for the CDM, where a conflict has erupted on postCP2 related CDM activities. Supplying Parties expect a clarification by the CMP on whether new CDM activities can be started after 2020, CERs can be issued for post-2020 vintages and how existing CDM infrastructure, methodologies and activities can be transitioned into Article 6. For them building trust in international carbon markets crucially depends on the transition of CDM activities (Hoch et al. 2020). Other Parties, especially among those providing demand for international carbon certificates, ask for a clear cut on the Kyoto Protocol, where CDM host countries did not have own compliance targets and double counting has been no issue. With the paradigm shift to the Paris Agreement they underline among other aspects fundamental changes to the CDM, especially

the avoidance of double counting, corresponding adjustments, crediting below “BAU”-scenarios and dynamic baselines.

A decision on how to transition CDM activities selectively in line with the principles of the Paris Agreement could substantially increase the Article 6 piloting portfolio. However, the regulatory uncertainty after 2020 has had an impact on the options of the private sector and project developers to turn to Article 6 market mechanisms. The owners of ongoing CDM activities will need to convince host country governments to not use their projects’ cheap emission reductions, in particular for many renewable energy projects, for complying with the unconditional NDC.

VOLUNTARY MARKET TRANSITION AND THE PRIVATE SECTOR’S USE OF ARTICLE 6

The voluntary carbon markets have seen a surge in activities and demand as more corporate entities are committing to become carbon neutral (e.g. Microsoft, Apple, EasyJet, Shell and other oil majors) and therefore have become increasingly engaged in offsetting their emissions. In 2018, the offset turnover doubled to almost 100 MtCO₂e and grew somewhat in 2019. It is expected to have remained at a similar or even higher level in 2020 despite the COVID-19 pandemic (Ecosystem Marketplace 2020). Similarly, national markets have experienced a significant increase. For example, the German voluntary carbon market grew by 22% in 2019, as project developers retired a record sum of 20.2 million t CO₂ for German clients (Allianz für Entwicklung und Klima 2020). New initiatives aim to use voluntary markets to increase private sector climate ambition (Taskforce on Scaling Voluntary Carbon Markets 2020). There has also been a rising interest in procuring voluntary offsets from the public sector that still mainly focus on travel emissions but are slowly also going beyond these.

However, there remains a lack of clarity on whether and how the voluntary market will be subject to Article 6 rules. The current negotiation text and the view of market stakeholders like Gold Standard, World Wildlife Fund (WWF) and Environmental Defense Fund (EDF) suggest that the voluntary market will be subject to NDC accounting rules and require CAs. Others such as the International Carbon Reduction and Offset Alliance (ICROA) argue this should not be the case. Some voluntary standards are responding to this debate and have started to consider ways in which to make voluntary carbon markets ‘Article 6-proof’. The Gold Standard for example led a working group of civil society organisations in order to better understand and define the role of the voluntary carbon markets after 2020 (Gold Standard 2020a). The organisations confirmed the view that the voluntary carbon market is to bridge not only the emissions gap but also the finance and time gap under the PA and has the infrastructure to do so. The Gold Standard is already seeking to offer two segments of credits and differentiate post-2020 vintage carbon credits depending on whether host countries apply CAs or not (Gold Standard 2020b).



3. THE ARTICLE 6 PILOTING LANDSCAPE

3.1. BREAKING DOWN THE TYPES OF ARTICLE 6 COOPERATION

While the term Article 6 pilot has been used freely by different stakeholders, no formal definition exists. We continue to define Article 6 pilots broadly as initiatives that have the potential to align themselves with Article 6.2, Article 6.4 or Article 6.8 once multilateral rules for these have been finalised. This includes initiatives that emerged prior to the PA. Usually, a strong indication for an Article 6 pilot is if the involved stakeholders describe their activity as such.

On this basis, we make use of the same criteria introduced in the last edition of this report (Greiner et al. 2019b), to define an Article 6 pilot. The activity:

- Is presented as an Article 6 pilot by implementing entities
- Will likely be governed by Article 6 rules, once these rules are finalised
- Is seeking to test the operationalisation of relevant concepts under Article 6
- Directly builds capacities and prepares countries to participate in Article 6
- Participating countries or entities indicate their intention to eventually transfer or acquire ITMOs

A CONCENTRIC RING MODEL OF ARTICLE 6 PILOTING

Due to the large heterogeneity of the activities that meet the criteria introduced above, we apply a model of **concentric rings** to differentiate between concrete pilot activities and related initiatives as follows:

- The **innermost circle** contains **concrete Article 6 pilot activities** that are predominantly focused on implementing crediting activities (e.g. projects, programmes, others) that aim at eventually generating ITMOs and ABs;
- The **middle circle** comprises those initiatives that **will eventually be governed by Article 6 rules**, however, may not have been set up with the intention of functioning under Article 6 like the linking of ETS across borders;
- The **outer circle** describes various related **Article 6 enabling initiatives** that predominantly aim at creating favourable framework conditions for implementing Article 6 piloting including capacity building etc. The latter are often also referred to as Article 6 readiness activities, a terminology we avoid due to its broad and potentially misleading use.

In practice, there may be hybrid undertakings that aim at implementation but also have a strong technical assistance component, e.g. the Standardized Crediting Framework (SCF) which focuses on activities in low-income countries but also provides comprehensive technical support and capacity building. Over time, activities may move from outer to inner circles. The concentric ring model is visualised in Figure 2.

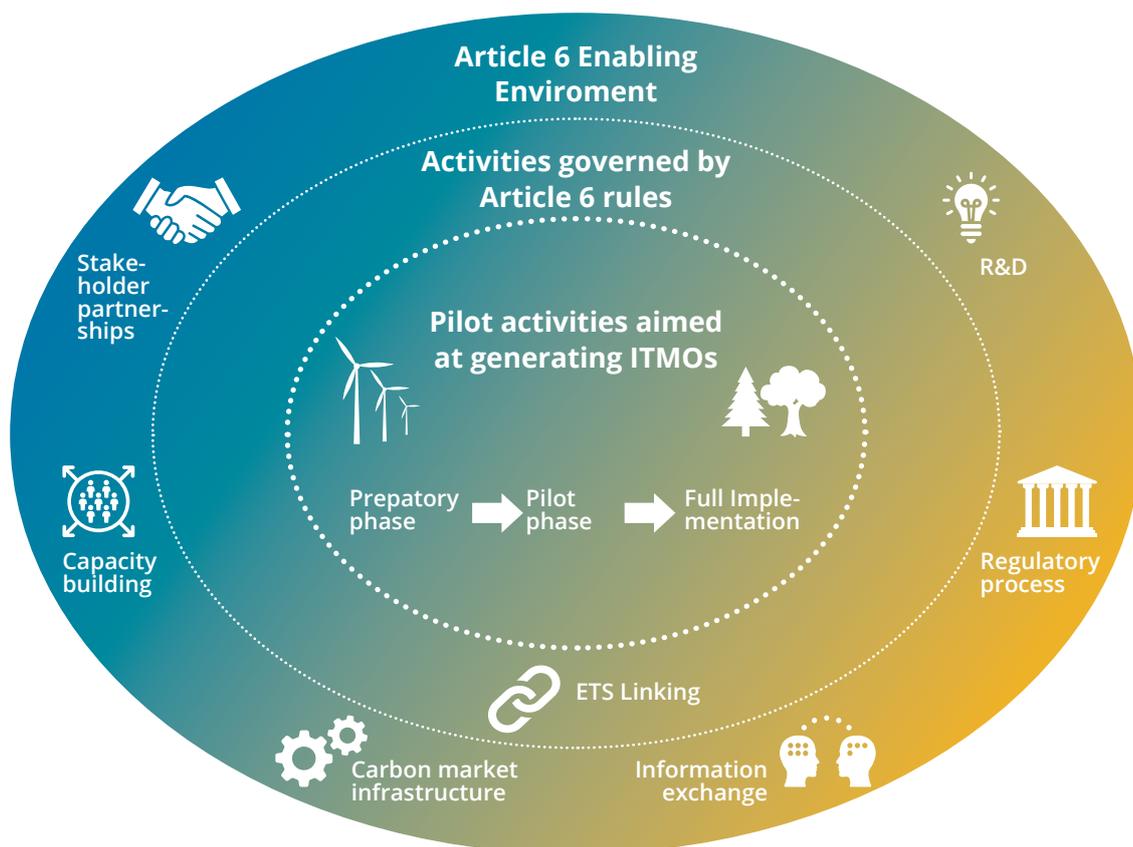


Figure 2: The concentric ring model of Article 6 piloting
Source: Authors

3.2. SELECTED ARTICLE 6 PILOTS AND INITIATIVES

In the following section, all Article 6 pilots and initiatives underway are categorised according to the concentric ring model. The selected Article 6 pilots are developed by governments, regional financial institutions and multilateral development banks (MDBs).

While new Article 6 pilot initiatives continue to be announced, information on their development might not always be available or might be confidential. Therefore, we do not wish to claim that this list of pilots is exhaustive. One well-known resource for tracking the development of new Article 6 pilots is the Article 6 Pilot Pipeline database developed by the UNEP DTU Partnership, which is updated regularly with recently announced pilots.

Further information on the different Article 6 pilot activities and the enabling initiatives is provided according to the location in the concentric ring model in Annex 1, 2 and 3 of this report in the form of detailed factsheets.

3.2.1. ARTICLE 6 PILOT ACTIVITIES AIMED AT GENERATING ITMOS OR TRANSFERABLE ADAPTATION BENEFITS

Article 6 pilot activities in the inner circle can be categorised according to the phase they are currently in: a preparatory phase, a pilot phase and a full implementation phase. The three phases typically build on each other and relate to three different dimensions of the development of the pilot activity: the actions performed by the host country, the bilateral relationship between the buyer and the seller country, and the actions performed by the project developer. While under the KP, the third dimension was the main driver behind the progress in the development of the project activity, Article 6 has introduced the two other dimensions.

We assume that the preparatory phase starts when the host country develops the baselines and methodological elements. When the host country authorises the transfer of mitigation outcomes, the activity would enter the pilot phase, during which the first ITMOs are issued and transferred to the buyer country and Monitoring, Reporting and Verification (MRV) activities are carried out. The full implementation phase would entail the application of CAs and NDC accounting by the host country.

From the perspective of the bilateral relationship between buyer and seller country, the preparatory phase could begin with the signing of a bilateral agreement between the two countries. The project would advance to the pilot phase when a Mitigation Outcome Purchase Agreement (MOPA) or an Adaptation Benefits Offtake Agreement (ABOA) is signed. This agreement is also meant to govern the bilateral relationship during the full implementation phase. Finally, with respect to the actions that fall within the purview of the project developer, the preparatory phase would entail the development of the Project Idea Note (PIN) and the Feasibility Study, along with baselines and methodologies.

During the pilot phase, the financial investment into the mitigation activity would materialise and the developer prepares the Activity Design Document. Finally, the full implementation phase could entail an upscaling of the pilot activities.

We distinguish between these three dimensions because the development of the pilot activity follows different paces according to each dimension. Consequently, the transition from one phase to another can occur at different times depending on the dimension that is being considered. For example, progress made by the project developer could outpace the progress made by the host country. This would mean that the activity could fall both within the pilot phase and the full implementation phase.

Figure 3 describes the various elements that make up the three activity phases according to the different dimensions:

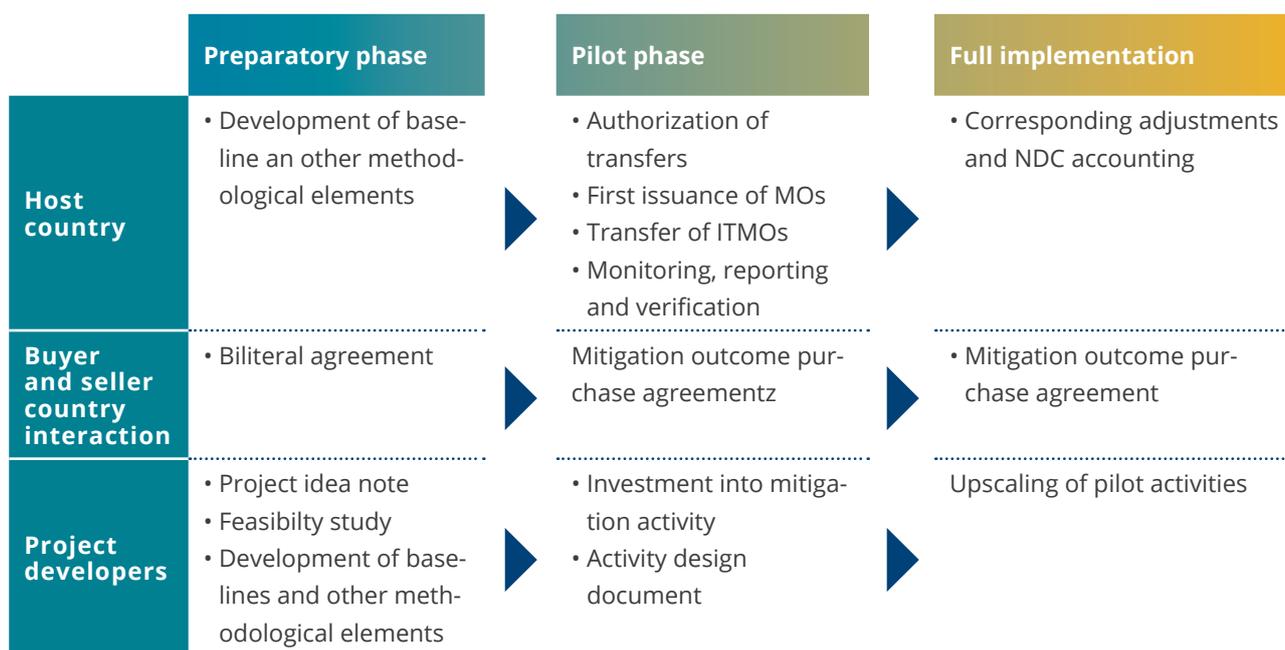


Figure 3: The three phases of pilot activities
Source: Authors

The following activities are deemed to be Article 6 pilot activities and fall within the inner circle of the concentric ring model:

AFRICAN DEVELOPMENT BANK - ADAPTATION BENEFITS MECHANISM (ABM)

The Adaptation Benefits Mechanism aims to create a results-based finance instrument to encourage private investments in and public financing for adaptation projects. The mechanism will assist developing countries with achieving their adaptation priorities set out in their NDCs that are conditional on international support. Developed since 2016 by the African Development Bank, the ABM is the first attempt to operationalise a non-market mechanism for adaptation activities by creating a new asset – certified Adaptation Benefits.

CANADA - CHILE PROGRAMME TO REDUCE EMISSIONS IN THE WASTE SECTOR

The Chile-Canada Agreement on Environment Cooperation entered into force in July 1997 in parallel to the bilateral Canada-Chile Free Trade Agreement and provides a framework for bilateral cooperation on environmental issues. Within the context of this cooperation, Canada has offered financial and technical support to Chile to deploy technologies and to pilot innovative approaches under Article 6 supporting the reduction of methane emissions in the waste sector through the ‘Programa Reciclo Orgánicos’ (Organic Recycling Programme).

EBRD - INTEGRATED CARBON PROGRAMME FOR THE SEMED

The Integrated Carbon Programme for the Southern and Eastern Mediterranean (SEMED) is supporting the transition to low carbon economies

through technical assistance, policy dialogue and capacity building in carbon markets, and a financing instrument for emission reduction activities.

FEDERAL MINISTRY FOR ENVIRONMENT, NATURE CONSERVATION AND NUCLEAR SAFETY (BMU) - PILOT ACTIVITIES

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is supporting and implementing a number of different Article 6 activities with the aim to first and foremost operationalise Article 6 and build capacity in partner countries, and as a second step generate emission reductions to be purchased as voluntary compensation. BMU-funded projects currently underway include a programme for reducing technical losses in the power grids of African countries, as well as a project focusing on the cooling sector.

JAPAN - JOINT CREDITING MECHANISM (JCM)

Japan established the Joint Crediting Mechanism in 2010 to promote cooperation on mitigation activities in multiple sectors with developing countries. Japan has already signed agreements with 17 countries for the implementation of the JCM. As of October 2020, 65 projects have been registered which reach a cumulative emission reduction potential of approx. 0.3 million tCO₂e/year.

NEFCO - PERU COOPERATIVE ARRANGEMENT PILOT IN THE SOLID WASTE SECTOR

The Nordic Environment Finance Corporation - Peru Conceptual Pilot provides an overall framework for Peru and a partner country to voluntarily engage in the transfer of ITMOs from its Solid Waste Sector Nationally Appropriate Mitigation Action. It was designed to illustrate how Peru could potentially tap into additional finance streams while accommodating domestic priorities and emerging rules under Article 6 as well as other provisions of the Paris rulebook.

SWEDISH ENERGY AGENCY (SEA) - PILOT ACTIVITIES

The Swedish Energy Agency has started to engage with Article 6 market mechanisms on behalf of the Swedish government by exploring ways to support the development of mitigation activities that could potentially generate ITMOs. Swedish Energy Agency has commissioned Virtual Pilot studies, launched a call for proposals for Article 6 projects, and a cooperation programme on developing pilots with the Global Green Growth Institute.

SWITZERLAND - PILOT ACTIVITIES OF THE CLIMATE CENT FOUNDATION (CCF)

In 2013, the Swiss government mandated the Climate Cent Foundation to use part of its remaining assets of CHF 100 million – at least 20 million – to

finance Article 6 pilot activities with interested countries and the private sector until 2032. By 2030, the Climate Cent Foundation expects to be able to fund the reduction of more than 20 million t CO₂, thereby offsetting over 5% of the Swiss GHG emissions in the years 2021-2030. On October 2020, Switzerland and Peru signed the world's first bilateral agreement on Article 6 collaboration.

SWITZERLAND - ITMO PURCHASE PROGRAMME OF THE KLIK FOUNDATION

The Swiss CO₂ law mandates fossil motor fuel importers whose fuel sales exceed a volume equivalent to more than 1000 t CO₂e/year to compensate the related emissions domestically and abroad. To fulfil this legal obligation, the Foundation for Climate Protection and Carbon Offset (Stiftung Klimaschutz und CO₂-Kompensation) was established as a sector-wide carbon credit purchase vehicle for fossil motor fuels, as the successor of the Climate Cent Foundation. The foundation plans to acquire 35 million ITMOs and has already implemented two calls for proposals.

WORLD BANK - THE STANDARDIZED CREDITING FRAMEWORK (SCF)

The Standardized Crediting Framework for energy access provides a simplified crediting approach that builds on the CDM. Set-up by the World Bank's Carbon Initiative for Development, the SCF was developed in anticipation of the future policy landscape under the PA and more specifically, transitioning CDM projects and Programmes of Activities Article 6 cooperative approaches.

WORLD BANK - THE TRANSFORMATIVE CARBON ASSET FACILITY (TCAF)

The Transformative Carbon Asset Facility is a trust fund of the World Bank piloting innovative, upscaled CO₂ crediting and quantification mechanisms. The initiative has been developed in partnership with several contributing countries to pilot approaches to increase developing countries' NDC ambition, specifically through enabling them to generate and sell carbon credits from mitigation policy action.

3.2.2. ACTIVITIES GOVERNED BY ARTICLE 6 RULES

Initiatives that will eventually be governed by Article 6 rules, but that were not established with the specific intention to function under Article 6 fall within the middle circle of the concentric ring model. The following initiative is categorised within the middle circle:

GLOBAL - LINKING EMISSIONS TRADING SCHEMES

Cap and trade systems have been introduced in a growing number of countries. Some of the systems have been linked, e.g. Switzerland and the European Union, and California and Quebec. Transboundary linkages will naturally become Article 6 activities.

3.2.3. ENABLING INITIATIVES

Enabling initiatives aim to create favourable framework conditions for the use of Article 6 cooperative approaches by promoting the processes that are described in Figure 4.

RESEARCH AND DEVELOPMENT	<ul style="list-style-type: none"> • Such as the development of virtual pilots and blueprints or the generation of broader methodological work (e.g. Mitigation Action Assessment Protocol tool)
REGULATORY PROCESSES	<ul style="list-style-type: none"> • Bilateral agreements between buyer and seller countries • Approval of Article 6 activities • Authorisation of ITMO and AB transfers • Alignment of Monitoring, Reporting and Verification (MRV) • MRV of Article 6 activities with NDC accounting
INFORMATION EXCHANGE	<ul style="list-style-type: none"> • Through databases, publications, stakeholder engagement and side events
CARBON MARKET INFRASTRUCTURE	<ul style="list-style-type: none"> • Mechanism infrastructure (e.g. registries, governing bodies, support structure with secretariat functions) • Trading infrastructure (e.g. auctioning platforms)
CAPACITY BUILDING	<ul style="list-style-type: none"> • Institutional capacity building (e.g. of host country designated institutions for authorising activities, ITMO transfers and related NDC accounting) • Carbon markets participants (e.g. project developers, auditors, financing institutions)
STAKEHOLDER PARTNERSHIPS	<ul style="list-style-type: none"> • (e.g. West African Alliance on Carbon Markets and Climate Finance)

These processes are essential for enabling individual Article 6 pilot activities to implement mitigation and adaptation activities that successfully generate ITMOs and transferable ABs. In addition, Article 6 enabling initiatives also contribute to promoting knowledge, capacities, infrastructure etc. that are critical for establishing this new generation of carbon market activities under fundamentally transformed circumstances compared to the KP era.

On this basis, the following initiatives fall within the outer circle of the concentric ring model and are categorised here as enabling initiatives:

ASIAN DEVELOPMENT BANK - ARTICLE 6 SUPPORT FACILITY

The Asian Development Bank Article 6 Support Facility will provide capacity building and technical support to developing member countries to help them identify, develop and test mitigation actions under the framework of Article 6 of the Paris Agreement. With its Carbon Market Programme, the Asian Development Bank is supporting members to advance and implement market-based approaches.

AFRICAN DEVELOPMENT BANK - ENERGY EFFICIENCY ITMO PROJECTS IN WEST AFRICA

The AfDB is supporting energy efficient ITMO projects in West Africa with the aim to support both the development as well as the implementation of

Figure 4: Enabling activities

Source: Authors

activities that can eventually be captured under Article 6.2 and 6.4 of the PA. Moreover, through this, the AfDB aims to create, enhance and share knowledge on obstacles that may hinder climate friendly technologies in Sub-Saharan Africa from partaking in international carbon markets.

GERMAN FEDERAL MINISTRY FOR THE ENVIRONMENT, NATURE CONSERVATION AND NUCLEAR SAFETY (BMU) - INITIATIVES

The German government engages with the new market mechanisms in a variety of ways. In particular, the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety supports carbon market-related projects and activities that fall within four different scopes: i) projects that aim at addressing outstanding issues in the international negotiations; ii) Article 6 pilot projects that aim to test different cooperative approaches; iii) activities aimed at developing institutional capacity; and iv) platforms and partnerships that facilitate the exchange of information and foster coordination on carbon markets.

GGGI & SEA/ NORWEGIAN MINISTRY OF CLIMATE AND ENVIRONMENT - 'MOBILIZING ARTICLE 6 TRADING STRUCTURE' (MATS) & 'DESIGNING POLICY APPROACHES UNDER ARTICLE 6' PROGRAMMES

The agreement on the 'Mobilizing Article 6 Trading Structure Programme' was signed by the Swedish Energy Agency and the Global Green Growth Institute at COP 25 in 2019. The 3-year technical assistance programme will support Cambodia, Ethiopia and Nepal in establishing or reinforcing domestic institutional capacities. The 'Designing Policy Approaches under Article 6 Programme' aims to develop policy approaches in Indonesia and Morocco that could potentially generate ITMOs for acquisition by Norway and Sweden.

WEST AFRICAN ALLIANCE AND EASTERN AFRICA ALLIANCE ON CARBON MARKETS AND CLIMATE FINANCE

The West African Alliance on Carbon Markets and Climate Finance and the Eastern Africa Alliance on Carbon Markets and Climate Finance are coalitions of African countries, which pursue the same goal in two different sub-regions – foster sub-regional cooperation as well as national cooperation, and enhance readiness for the implementation of the new Article 6 carbon market mechanisms.

WORLD BANK - CLIMATE MARKET CLUB

The Climate Market Club is a group of national governments that aim at jointly developing modalities for piloting Article 6.2 activities. Members of the Club commit to adhere to the principles of guaranteeing environmental integrity, avoiding double counting, and following the rules and guidance that are developed through the international negotiations. To date, eleven countries have joined the Club.

WORLD BANK - CARBON PARTNERSHIP FACILITY (CPF)

The Carbon Partnership Facility became operational in 2010 with the aim of channelling carbon finance in the post-Kyoto period. The Facility collaborates with governments and market participants on both programmatic and sector-based emission reduction activities in developing countries. It also provides a combination of carbon finance in the form of grants through its Carbon Fund and its Carbon Asset Development Fund.

WORLD BANK - PARTNERSHIP FOR MARKET IMPLEMENTATION (PMI)

The Partnership for Market Implementation is the successor programme to the World Bank's Partnership for Market Readiness effort that has supported emerging economies and developing countries in conceptualising and establishing carbon pricing and market instruments to facilitate the reduction of emissions. The Programme was announced by the World Bank at COP25 and shall start from 2021.

WORLD BANK - WAREHOUSE FACILITY

The Warehouse Facility is currently being developed as an online platform that aims to house a database of mitigation activities, and make these accessible to potential investors wanting to purchase mitigation outcomes. It aims to 'host' an infrastructure for the standardised assessment, recording and transferring of mitigation outcomes.

3.3. FACTS AND FIGURES

In this section, we present the factual information on Article 6 pilot activities from the innermost and the middle circle concerning their location, the time when they emerged, the form and scale of cooperation that they adopted, the Article 6 routes that they intend to pursue, the financial resources that have already been allocated to them, and the sectors that they target.

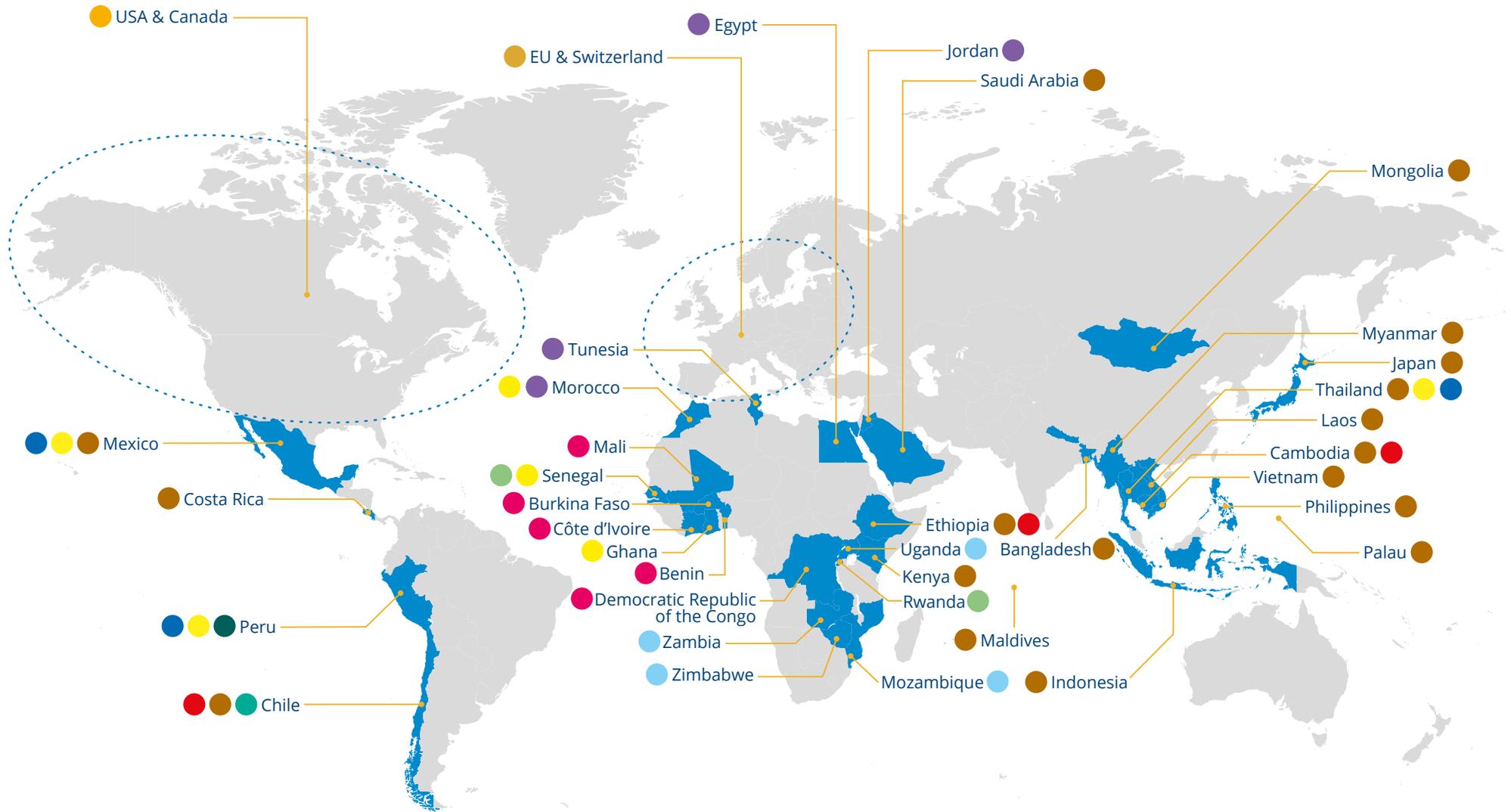


Figure 5: The global Article 6 piloting landscape



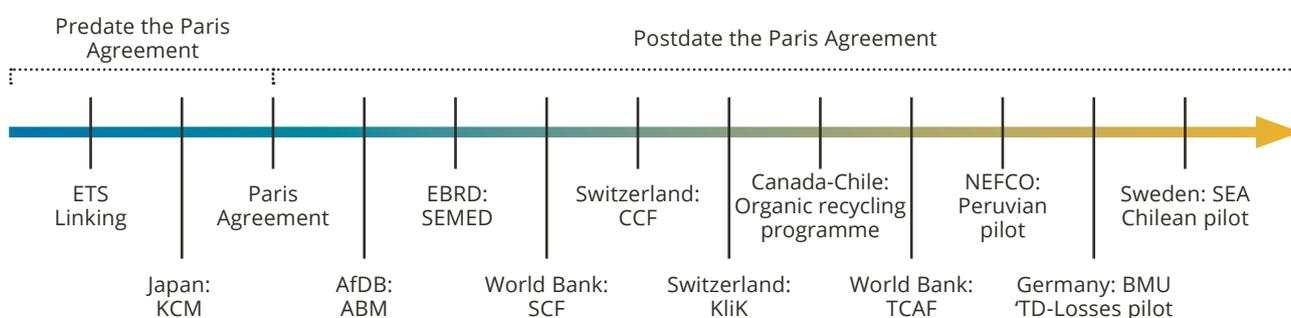
LOCATION OF ARTICLE 6 PILOT INITIATIVES

To visualise the Article 6 pilots and related initiatives identified here, Figure 5 maps the various countries and multilateral institutions that promote these, as well as where their activities are located.

EMERGENCE OF THE PILOTS

The selected pilots have emerged at different times over the past years. Some activities were developed prior to the PA but are governed by mechanisms that could be suitable also for cooperation under Article 6. Other activities were developed more recently with a clear intention to being recognised as an Article 6 cooperative approach.

Figure 6: Emergence of initiatives
Source: Authors



MAIN FORM AND SCALE OF COOPERATION

A baseline-and-credit approach has been adopted by all selected pilots. Currently, CO₂e is the only metric envisaged by the pilots to conduct ITMO transactions under Article 6. With respect to the scale of cooperation, some pilots focus on some specific projects or sectors, thus functioning on a smaller scale, while others target wider policy settings. The same applies to the type of crediting approach.

Table 1: Comparison of scale of cooperation

Source: Authors

Programmatic / Project scale	Sectoral scale	Policy scale
AfDB: <i>ABM</i>	Canada-Chile: <i>Organic recycling programme</i>	Japan: <i>JCM</i>
Japan: <i>JCM</i>	EBRD: <i>SEMED</i>	World Bank: <i>TCAF</i>
Switzerland: <i>CCF</i>	NEFCO: <i>Peruvian pilot</i>	<i>ETS Linking</i>
Switzerland: <i>KliK</i>	Sweden: <i>SEA Chilean pilot</i>	
Germany: <i>BMU 'TD-Losses' Pilot</i>	Switzerland: <i>KliK</i>	
World Bank: <i>SCF</i>		

PURSUED ARTICLE 6 ROUTES

A few of the selected pilots have already claimed that they intend to fit under Article 6.2 cooperative approaches, while only one pilot aims at using Article 6.8 non-market approaches. The rest of the pilots are instrument neutral, meaning that they could fit under both Article 6.2 and/or Article 6.4. It is worth noting that the future multilateral Article 6.4. mechanism requires finalising the Article 6 rulebook before it becomes operational, hence the absence of activities.

Table 2: Potential Article 6 route
Source: Authors

Instrument neutral	Article 6.2	Article 6.8
Canada-Chile: <i>Organic recycling programme</i> EBRD: <i>SEMED</i> NEFCO: <i>Peruvian pilot</i> Sweden: <i>SEA call for proposals</i> World Bank: <i>SCF</i>	Sweden: <i>SEA Chilean pilot</i> Japan: <i>JCM</i> Switzerland: <i>CCF</i> Switzerland: <i>KliK</i> World Bank: <i>TCAF</i> GGGI & SEA: <i>Designing Policy Approaches</i> Germany: <i>BMU 'TD-Losses' Pilot</i> ETS Linking	AfDB: <i>ABM</i>

LEVEL OF INVESTMENT

While most of the pilots have not committed financial resources for the implementation of their activities yet, others have already allocated some substantial funding. Some pilots are still in the preparatory phase, meaning that financial resources have not yet been allocated or published. However, currently around USD 1.37 billion have been made available for the development and implementation of pilot activities.

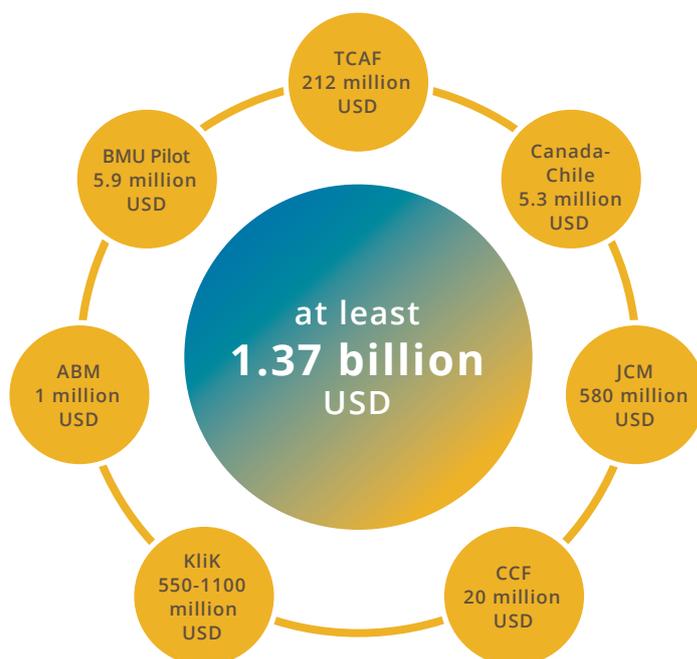


Figure 7: Indicative financial resources committed to Article 6 pilots (in Mio USD)
Source: Authors

SECTORS TARGETED BY PILOTS

So far, five sectors have been targeted by the selected Article 6 pilots. Many pilots target the energy supply sector, including decentralised solar mini-grids, geothermal, domestic biogas digesters. The energy demand sector is addressed through energy efficiency in industry and households, addressing production plants, buildings and appliances such as improved cook stoves. Other pilots are focused on the waste, on the transport and on the landuse sectors.

Energy supply



Japan: *JCM*
 Sweden: *SEA*
 Chilean pilot
 Switzerland: *KliK*
 Germany: *BMU*
 'TD-Losses' pilot
 EBRD: *SEMED*
 World Bank: *SCF*

Energy demand



Japan: *JCM*
 Switzerland: *CCF*
 Switzerland: *KliK*
 EBRD: *SEMED*
 World Bank: *SCF*

Waste



Canada-Chile:
Organic recycling
programme
 NEFCO: *Peruvian*
pilot
 Switzerland: *CCF*
 Japan: *JCM*
 Switzerland: *KliK*

Transport



Switzerland: *CCF*

Land-use



AfDB: *ABM*
 Switzerland: *KliK*

Figure 8: Targeted sectors

Source: Authors



4. STAKEHOLDER EXPERIENCES AND INSIGHTS

As Article 6 rules are still under negotiation, pilots have a vital role in testing their application and providing creative solutions for issues that are still unclear. They are an important reality check and source of information. In order to tap into this potential, lessons have to become accessible. The study seeks to bring some of these insights to light by gathering feedback from stakeholders involved in the implementation of Article 6 pilots. For this purpose, structured interviews were carried out with the proponents of the covered pilot initiatives, including buyers, host countries and project developers on some of the key questions relating to the implementation of Article 6. The interview questions are summarised in Box 1.

Box 1: Questions asked to stakeholders in structured interviews

- What is the current status of the pilot?
- Is the pilot mitigation activity inside or outside the scope of the (conditional) NDC?
- Does the NDC provide quantified goals for the sector within which the activity takes place? Is the information provided in the NDC suitable to establish the baseline?
- Does the baseline take into consideration the long-term low emission development strategy of the host country?
- How is the carbon price of the transaction determined?
- Are risks of 'overselling' and not meeting NDC targets being addressed? If so, how?
- How is the sharing of the mitigation outcomes between the buyer and seller country being envisaged?
- Which registry is being used to track mitigation outcomes (national, buying country or privately operated registry)?
- Are upfront payments envisaged as part of the MOPA?
- Is a Share of Proceeds paid for a) adaptation measures and b) administrative fees? If so, how much is the charge?
- What have been the biggest hurdles in bringing the pilot activity forward so far, if any?
- How do the latest developments in the Article 6 negotiations impact the pilot activity?
- Would the project be affected if Article 6 negotiations failed to conclude in 2021?
- How are you contributing with your experiences and insights to ongoing Article 6 negotiations?

The responses received were as diverse as the pilots. On some issues, consensus can be observed whereas stakeholders provided contradicting views on others. Below, we present the main insights that have emerged from the interviews. Where appropriate, the messages that crystallised from the interviews are complemented by the authors' observations from discussions taking place in other forums where pilots have been presented.

A. ARTICLE 6 PILOTS HAVE PROGRESSED IN THEIR DEVELOPMENT, ALBEIT SLOWLY

Compared to the dynamic development in previous years, the speed at which new developments are emerging seems to have slowed down. Many pilots have reached the point of detailed and therefore difficult negotiations between participating Parties. However, pilots have moved further along in the implementation chain and some important milestones have been reached.

To understand where the development of pilots stands, we distinguish between the preparatory phase, the pilot phase and the full implementation phase as outlined in Figure 3 above.

On this basis, we observe that most pilot activities remain in the preparatory phase. Apart from the JCM, none of the pilots have so far signed commercial agreements. However, many pilot activities are advancing on the establishment of a MOPA or ABOA and can therefore be regarded as being in the pilot phase. Strictly speaking, none of the pilot activities have reached the full implementation phase yet. This would require the finalisation of the Article 6 rules and the start of country reporting, which can only be expected in 2024 with the submission of the first biennial transparency reports (BTRs). However, pilots may reach the full implementation stage in some dimensions, such as investment in the mitigation programme itself or the conclusion of the commercial and bilateral agreements. In that sense, we consider that many of the project activities under the JCM are already fully implemented Article 6 pilots.

Table 3: Assigning the pilots to the three phases

Source: Authors

Preparatory phase	Pilot phase	Full implementation
AfDB: <i>ABM</i>	NEFCO: <i>Peru</i>	Japan: <i>JCM (only step missing is corresponding adjustment)</i>
World Bank: <i>TCAF</i> <i>Climate Warehouse,</i> <i>NCM</i>	Sweden: <i>SEA Chilean pilot</i>	
EBRD: <i>SEMED</i>	Germany: <i>BMU 'TD-Losses' Pilot</i>	
GGGI & SEA: <i>Designing Policy Approaches</i>	Canada-Chile: <i>Organic recycling programme</i>	
	Switzerland: <i>CCF Pilot Activities, KIIK</i>	

Besides the continuing uncertainty regarding the finalisation of the Article 6 rulebook, another reason why the development of pilots has been merely gradual is that the community seems to be waiting for the emergence of ‘lighthouse activities’ that can guide the way forward as new processes and cooperation models need to be established. The Swiss-Peruvian bilateral agreement represents an important milestone in this regard. It defines clear institutional responsibilities on seller and buyer country sides, differentiates between authorisation and recognition of an ITMO transfer, clearly specifies criteria for ensuring environmental integrity, and defines registry requirements (see Box 2 below). Such ‘role models’ can then principally be replicated in other contexts.

As an external factor, the COVID-19 pandemic has led to the delay of some pilots but not halted them completely. The implementation of the organic waste-recycling project in Chile has, for example, faced some activity-specific delays. BMU also explains that the economic repercussions of the COVID-19 crisis will be felt most by those countries that also happen to be pilot host countries. As a result, piloting could become a secondary concern for host country governments. Not only countries, but also financial institutions might have less capacity to engage with pilot projects. This can already be seen in the context of the BMU-supported pilot project in Africa, where progress has slowed due to the pandemic. In the case of the ABM, the implementation on the ground has been postponed until the beginning of 2021, as the adaptation pilots require face-to-face engagement with local communities to discuss the planned measures. Despite the fact that government priorities have shifted due to COVID-19, TCAF on the other hand emphasises that they are still having productive conversations with host countries and are continuing to make progress.

“The world moves faster than the pilots.” (SEA)

The NDC revision process can further slowdown the development of pilot activities as changes to the NDC can impact a pilot’s crediting and business model. Since the development of a virtual pilot in Chile by the SEA, the Chilean government has revised its NDC, updating targets and baseline scenarios. Thereby, the information that was used to develop the virtual pilot has become outdated, and since led to some delays in its implementation. This has similarly been a challenge for the activities being implemented under Ci-Dev.

B. BILATERAL AGREEMENTS ARE THE STARTING POINT OF COOPERATION, NOT THE END

The adoption of a bilateral agreement is an important step in moving forward in the pilot implementation chain. However, even when a bilateral agreement has been agreed by cooperating parties, many aspects may still remain open. This relates to certain milestones that are defined within bilateral agreements and that will need to be in place, including on authorisation, recognition and the implementation of a national infrastructure for ITMO

transfers. In addition, bilateral agreements often do not include the commercial terms of the cooperation, which need to be negotiated separately.

In October 2020, Switzerland and Peru (FOEN 2020) signed the first 'Implementation Agreement', serving as the legal framework for ITMO transactions. The agreement establishes minimum quality criteria for ITMOs to respect environmental integrity and promote sustainable development, and outlines processes for authorisation and accounting of transfers. Unlike the JCM, whose governance framework builds on a joint decision-making committee, the Implementation Agreement builds on separate decision-making committees, regulations and processes at national level. The bilateral agreement kicks-off the cooperation between Switzerland and Peru. This, however, does not mean that project proposals from Peru are automatically qualifying for ITMO transfers, as these would still need to go through KliK's competitive tendering process and bilateral authorisation as per the Agreement (KliK 2020). As this bilateral agreement could serve as guidance for other initiatives, its key features are outlined in Box 2.

Box 2: The Swiss-Peruvian Article 6 Implementation Agreement

1. Environmental integrity

The bilateral agreement stipulates minimum standards to ensure the environmental integrity (Swiss Confederation and Republic of Peru 2020, Article 3):

- Mitigation outcomes need to be real, verified, additional, permanent (with qualifiers) and be generated by activities from 2021 onwards.
- The mitigation outcome's vintage year and use should lie in the NDC implementation period.
- Activities from which mitigation outcomes originate shall not lead to an increase in global emissions, be in line with the Parties' Low Emissions and Development Strategies (LEDS) and promote the transition to net zero carbon emissions by 2050. In addition, activities focusing on nuclear energy or those that result in a fossil fuel lock-in are to be excluded. Besides, activities shall promote enhanced ambition, reduce the risk of carbon leakage, be based on conservative baselines including consideration of the lower end of projected emissions pathways, take into account all existing and planned national policies and legislative actions and consider additional factors that can incentivise enhanced action by the transferring countries. Eventually, the mitigation outcomes shall be attributed to the sources of finance if adequate and avoid any negative environmental and social impacts.

2. Authorisation process

It is established that the transferring country's authorisation is required for the receiving country's authorisation. Each Party has to set up a process through which entities can submit requests for authorisation and national requirements are shared regarding minimal favourable conditions for prices and terms. The information provided to the national registry such as the number of authorisations and the mitigation activity description document (MADD) shall be published and submitted to the UNFCCC. The authorisation form shall include information on the mitigation activity, the used baseline methodologies, the crediting period, the NDC period during which the respective ITMOs are used, the total amount of ITMOs to be transferred and a reference to the other Party's authorisation if applicable (Swiss Confederation and Republic of Peru 2020, Article 5,6).

3. Recognition and Transfer

Regarding monitoring and verification, each Party needs to assess and publish monitoring reports on the mitigation activity and their verification. Before the transfer, the transferring Party has to examine that there is no double claiming of the mitigation outcomes as well as no evidence of discrepancy with the authorisation provisions and no evidence of human rights' violation or national legislation and issue an examination statement while informing the receiving Party and the entity that is authorised to make the transfer. Once the positive examination assessment gets issued, the receiving Party shall publicly confirm ('recognise') the fulfilment of the transfer requirements within 30 days. Upon the transfer, the transferring Party has to notify the acquiring entity and the receiving Party, also making a reference to the applicable method for corresponding adjustments. Both Parties have to recognise the transfer in their respective registries (Swiss Confederation and Republic of Peru 2020, Article 7,8).

4. Corresponding adjustments

The agreement also provides general provisions for the application of CAs through addition to or subtractions from the emissions level going beyond the specific case of Peru. Parties with a single-year NDC shall respectively add to or subtract the total of mitigation outcomes transferred or used towards their NDCs divided according to the number of years of the NDC's implementation period. In the case of multi-year NDCs, the emission level for that respective year is adapted (Swiss Confederation and Republic of Peru 2020, Article 10).

An interesting point to note is that pilot activities tend to employ a two-step approach, distinguishing between approval of a mitigation activity and authorisation of the transfers. Whereas the approval of the mitigation activity happens at the start of the cooperation, the authorisation of transfers comes only after emission reductions have been delivered.

C. HOST COUNTRIES ARE ENTERING AGREEMENTS WITH CAUTION

A general observation is that many host countries adopt a cautious attitude toward piloting Article 6 while buyer countries usually initiate the development of pilot activities. One host country interviewee emphasised the need to wait for the finalisation of the Article 6 rulebook before formally authorising piloting activities. Berg and Classen (2019) shared their experience from the CCF's piloting efforts noting that "potential partner countries appeared extremely reluctant to engage in piloting" (Berg and Classen 2019).

The cautious attitude of host countries appears to lead back to the following three reasons:

First, host countries have much more to lose under Article 6 cooperation compared to the CDM and do not want to be pressured into agreements. In the context of the PA, emission reductions become a national asset and host countries have to be mindful that any emission reductions transferred abroad are no longer available for meeting their own NDC. During the KP era, the CDM was predominantly aimed at harvesting 'low-hanging fruits' in the form of the cheapest emission reductions, since developing countries did not have mitigation targets. In the PA context, however, these considerations change. While many Article 6 activity types still closely resemble the CDM portfolio, host countries become more hesitant towards their endorsement if it means foregoing potentially needed emission reductions.

Second, host countries have a more difficult role in putting in place policy frameworks. For example, the implementation of Article 6 pilots should build on a detailed NDC implementation plan and requires the establishment of the necessary governmental infrastructures and the operationalisation of key concepts (see below).

Third, there is an asymmetric distribution of information observable between host countries and buyers. Host countries do not always have access to the broader (carbon) market intelligence while many buyers coordinate and exchange information with each other. A case in point is the fact that MOPA templates are not publicly available. Various enabling initiatives try to remedy this imbalance, including regional alliances of seller countries (WACC, EAA), cross-cutting initiatives (the new Climate Market Club convened by the World Bank) and donor-driven capacity building initiatives (NDC Partnership).

D. PUTTING IN PLACE POLICY FRAMEWORKS IN HOST COUNTRIES IS THE SINGLE BIGGEST TASK

As mentioned above, entering into an Article 6 cooperation requires a solid foundation on the side of the host country in the form of clarity on what to sell and an appropriate institutional framework to endorse the transfers. According to some stakeholders, these requirements are possibly the biggest challenge in implementing Article 6 in practice, even greater than compliance with the UNFCCC rules.

First, host countries have to determine what type of mitigation activities are suitable for an Article 6 cooperation in light of their own NDC commitments. Ideally, the cooperation should facilitate additional mitigation action, for example options identified as part of the country's conditional NDC or even beyond the already identified possibilities. In an ideal situation, the cooperation will assist the country in meeting its own NDC commitment through the support to national development objectives and generate additional emission reductions for transfer. By contrast, countries will seek to avoid transfers of emission reductions that are needed towards their national target, which would challenge their ability to achieve and/or enhance their NDCs. The risk of 'overselling' emission reductions is a key concern mentioned by both buyers and sellers in Article 6 pilots and for which different strategies are being devised (Carbon Limits et al. 2020).

In practice, defining the optimal use of Article 6 for both facilitating national targets and incentivising mitigation and development co-benefits beyond the country's target proves challenging. It requires a profound understanding of the policies and measures that have to be implemented to achieve the NDC targets. Many countries do not yet have detailed NDC implementation plans. TCAF, for example, emphasises that countries are currently still trying to figure out how they are going to implement their NDCs, which poses a challenge to the operationalisation of pilot activities. The Swiss pilot implementers CCF and KliK concur that NDCs are typically not detailed enough to allow for their conversion into quantitative goals for a specific activity.

“Typically, an NDC does not allow for specifying quantitative goals that can be easily converted to the context of an activity within the sector.” (CCF, KliK)

Secondly, host countries have to create suitable approval structures for Article 6. Under the CDM often times a single ministry, in most cases the ministry of environment, was responsible for the approval of CDM project activities as the Designated National Authority (DNA), albeit sometimes with the support of inter-ministerial committees. Under Article 6 the endorsement of the cooperation has become more intricate. The World Bank explains that DNAs are not in the position to make decisions on Article 6 transactions but need to first consult with relevant line ministries, which might be the only ones to know how NDC targets have been set for a

particular sector. Furthermore, as the transfer of mitigation outcomes can be likened to the sale of a national asset, the decision for such transfers need to be taken at a higher political level and involve several ministries, including for example the ministry of finance. There is thus a need for establishing a clear decision-making power regarding Article 6-related aspects at the national level. Such structures are for example supported by the SCF in Senegal and Rwanda. Developing guidance templates for the setup of domestic policy frameworks also is a key objective of the Climate Market Club. This is much needed, as so far, the lack of a clear political mandate in favour of Article 6 engagement and the allocation of decision-making power to a specific body in many countries remains one of the barriers for Article 6 pilot implementation (CCF, KliK).

E. PILOTS FACE MULTIPLE BARRIERS BUT NO DEAL-BREAKERS

In general, most stakeholders are facing similar experiences and hurdles within the various stages of piloting and at various levels (government action, resource availability etc.). The number of times a barrier was mentioned by stakeholders in the interviews is shown in Figure 9 below:

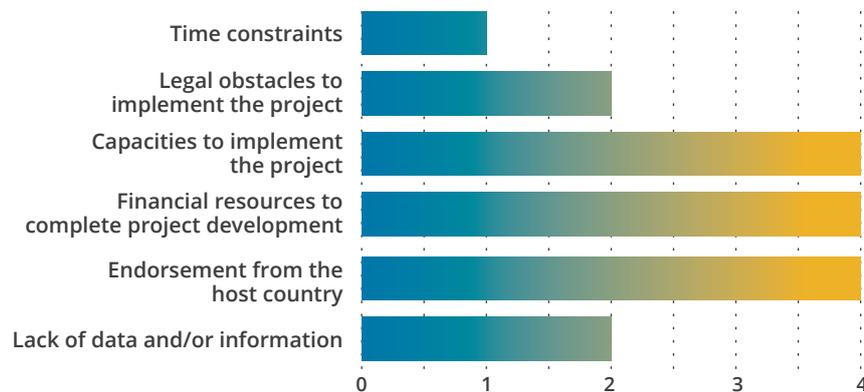


Figure 9: Hurdles of Article 6 implementation
Source: Authors

Despite the various barriers faced by stakeholders, none have encountered a deal-breaker. It is interesting to note that barriers seem to be equally prevalent on the country level and the project level. Barriers relating to the endorsement from the host country (see point 2) directly speak to the difficulties of establishing a policy framework as described above and together with the lack of data and/or information barrier (point 1) show the relevance of the enabling initiatives. The findings indicate that many pilot project proposals are in need of support at various levels, including: Article 6 capacity building, institutional setup for Article 6 transactions, lack of data and documentation and establishment of contacts and communication streams.

The SEA identifies different reasons for not being able to move forward with the implementation of some of the virtual pilots it commissioned in 2018, including a lack of data and structures in the host countries. Similarly, a number of project developers that participated in SEA's calls for proposals did not possess the capacities and documentation that were necessary

to be selected for further implementation under Article 6. Not only project developers, but also host countries are in need of capacity building support. For instance, BMU's Article 6 pilot in Sub-Saharan Africa ('TD Losses'), first and foremost aims to build necessary capacities in partner countries.

F. SHARING OF MITIGATION OUTCOMES IS CENTRAL TO MOST PILOTS

Most pilots are concerned with sharing and allocating mitigation outcomes between the host country and the buyer. Some also seek to enhance ambition and trigger transformative change or progress in regulations on the host country's side. Different models are being piloted for the sharing of mitigation outcomes and a range of creative solutions are emerging.

Under the JCM, for example, the allocation is decided by the bilateral Joint Committees based on the financial contribution that each side is making to the investment. This generally leads to sharing mitigation outcomes equally between the governments of Japan and the host country. The exception are the demonstration projects, which are entirely funded by the Japanese governments and whose mitigation outcomes fully accrue to Japan.

In the case of TCAF, the sharing of mitigation outcomes is also a key objective and part of the design. Payments made by TCAF are a hybrid between results-based climate finance, where the emission reductions stay in the host country, and carbon finance for which ITMOs are expected in return. The host country has to make corresponding adjustments only for a portion of the mitigation outcome funded by TCAF. According to TCAF, the combination of carbon finance and climate finance serves as a hedge against the risk of overselling by the host country.

In BMU's TD Losses pilot a share of generated emission reductions is allocated to Germany (i.e. share of energy savings / emission reductions, which would not have been financially viable without the Article 6 financing structure) and another share to the host country (i.e. share of emission reductions which would have been financially viable without the financing structure). Through an algorithm, the pilot seeks to provide financial incentives for the implementing countries to put in place supporting legislation: the more efficient signals the regulator sends to end customers for reducing load dependent technical losses, the higher will be the price of the ITMOs.

Finally, the Swiss pilots are not envisaging a sharing of mitigation outcomes per se but emphasise that the host country could ensure that a part of the mitigation outcome remains in the country by setting conservative baselines. The Swiss-Peruvian Implementation Agreement, however, foresees an option for sharing emission reductions with the private sector, which could come in and procure additional ITMOs (Swiss Confederation and Republic of Peru 2020).

G. PILOTS DELIVER DIVERSE AND CREATIVE APPROACHES TO BASELINE SETTING AND ADDITIONALITY DETERMINATION

In the Article 6.4 negotiations, baselines and additionality are among the key stumbling blocks due to both technical complexities and fundamentally different views. Currently, baseline setting is also heavily debated in academic literature (see e.g. Michaelowa et al .2019a). The question is how far mitigation programmes should be credited for reductions against business-as-usual (BAU). Another approach would be to say that only emission reductions that go beyond a certain performance benchmark of state-of-the-art technology should be credited. Also, the manner in which baselines should reflect NDC targets is debated: is it sufficient to consider the policies and measures a country has put in place to reach its NDC target in the baseline setting or should credits only be issued for emission reductions that go beyond the host country's own target? Would the mitigation have to exceed the unconditional target in order to be credited or even the conditional one? Do baselines have to be updated with crediting periods only or also with NDC cycles?

In addition, more normative approaches are discussed in terms of whether baselines should also be indicative of the decarbonisation pathway needed to reach the temperature goals of the PA and net zero emissions by 2050. In this case, not only current NDCs but also low emission development strategies (LEDS) play a role. Even more ambitious is the proposal of a crediting baseline as a weighted average of the 'is' margin representing the status quo of current (insufficient) levels of climate performance in the relevant area and the 'ought' margin – representing the transformative ambition that is required to meet the Paris objectives (Hermwille 2020).

Against the backdrop of this debate, Article 6 pilots are developing workable solutions. Most of them are currently focusing on high level principles and have not been elaborated in full technical details. We are therefore likely to see changes in interpretation as the activity specific implementation of baseline setting and additionality testing proceeds. While all pilots are concerned with environmental integrity, the concepts differ notably. Many take the NDC as a starting point, but recognise that data availability is often limited. There is a clear preference from buyers for mitigation activities inside the scope of NDCs. Some even plan to go as far as evaluating the level of ambition of the NDC (KliK, SEA). Whether crediting should target emission reductions beyond NDC targets is not consistently addressed by buyers. KliK and CCF require mitigation to go beyond the unconditional target. TCAF sets the crediting baseline by using the lower of the target emission trajectory under the NDC and the BAU emission trajectory and applying an additional discount. The JCM, on the other hand, uses CDM methodologies as a starting point, which are being simplified and made more conservative through the use of conservative default values.

The KliK Foundation specifies that the procurement of ITMOs from countries without quantified NDCs is not ruled out from the outset but that it is more difficult in such a case to ensure additionality and to identify whether a planned activity is outside a pledged NDC action.⁹ The SEA provides that NDC targets should be converted to a consistent metric, disaggregated to sectoral or sub-sectoral level and presented as multi-year trajectories to enable additionality tests and the application of corresponding adjustments (Swiss Confederation and Republic of Peru 2020). Many interviewees confirmed that LEDS will be taken into consideration or even supplemented or exceeded, if existing. The bilateral agreement between Switzerland and Peru specifies that mitigation activities shall be in line with the LEDS of each Party. The BMU Article 6 pilot programme is based on a dynamic baseline which considers current standardised baseline for the CO₂ intensity of the power system, the current technical losses and the current electricity delivered / lost in the distribution and transmission systems. These parameters are modelled using a CDM methodology to establish the dynamic baseline.

H. PRICING MODELS DIFFER SUBSTANTIALLY FROM THE CDM

Whereas the CDM in its heyday established a global market price, many Article 6 pilots plan to employ tailored pricing models. The situation is comparable to the early days of the Kyoto Mechanisms, when the Dutch procurement programmes CERUPT/ERUPT and the World Bank's Prototype Carbon Fund offered different price levels depending on the perceived robustness of pilot projects. As mentioned above, the major difference to the CDM is that host countries will most likely keep the low-hanging fruits for their own mitigation efforts and sell the ones with high abatement costs, which will have an impact on the general level of prices in the future carbon markets. Some pilots discuss the differences between pricing based on incremental costs or opportunity costs.

TCAF advises that if a host country exports emission reductions on the cheaper end of the marginal abatement cost curve, it should base its pricing expectation not just on the costs of implementing the mitigation activity (incremental cost) but consider the cost of making up for the exported emissions (opportunity costs). If in Figure 9 below, a host country was to sell emission reductions from mitigation activity E, it would shift the costs of reaching its NDC goal to the abatement costs of mitigation activity H. Considering the opportunity costs, the price of ITMOs from E should therefore be set at the cost of H. If payments are made through results-based finance, on the other hand, incremental costs are a suitable price level as the mitigation outcome will stay in the country.

Most pilots currently negotiate prices based on willingness to pay of the buyer and the costs of the mitigation action (e.g. KliK, CCF, SEA). While Article 6 pilots generally follow a payments-upon-delivery structure of the

⁹ KliK Foundation. Webinar on ITMO Procurement Process. August 2020.

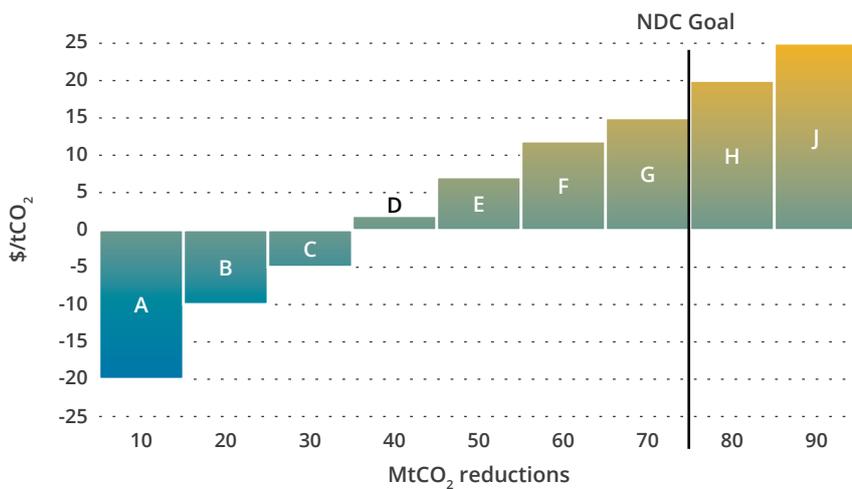


Figure 10: Incremental versus opportunity costs of ITMOs

Source: TCAF

emission reductions generated, it is not uncommon for pilots to include payments for certain milestones, such as the establishment of an MRV process (e.g. NEFCO).

In the case of the BMU-supported Article 6 pilot programme, a fixed price is not foreseen. The agreement is envisaged as a partnership, where the financing party as well as the implementing party agree on a cooperation. Moreover, carbon revenues are spent following the subsequent considerations: (1) The carbon subsidy is offered only to an end customer, if and only if the intervention is not financially viable despite the low interest loan and the intervention makes economic sense; (2) the amount of the subsidy is determined for each customer, following a specific algorithm (based on data provided by utilities and current tariffs) and corresponds to exactly the amount which is needed for the intervention to become financially viable. This assures an efficient use of scarce carbon finance and avoids so-called ‘windfall profits’.

JCM applies a special financing model targeted to support exports of Japanese technologies to JCM host countries. Project developers receive a subsidy of USD 38/tCO₂ which is reduced to USD 29 in case at least 5 projects of the same technology have been undertaken in the JCM host country, and USD 24 if at least 10 similar projects exist. Total subsidy levels can reach 50% of the costs of an activity in countries in which the project type is new, falling to 40% in countries with up to 4 projects and 30% for countries above that threshold. The payback period of a project including the subsidy has to exceed 3 years in order to meet the additionality requirement (Global Environment Centre Foundation 2020).

I. PLACEHOLDERS ARE SET FOR A SHARE OF PROCEEDS AND OVERALL MITIGATION OF GLOBAL EMISSIONS UNTIL THESE ARE DECIDED IN THE ARTICLE 6 NEGOTIATIONS

The delivery of overall mitigation of global emissions (OMGE) and the operationalisation of a share of proceeds (SOP) are crunch issues in the Article 6 negotiations. Article 6.4 of the PA mandates that the mechanism delivers OMGE and implements a SOP. The latter already exists under the CDM as a levy on generated credits to cover administrative costs and support adaptation in developing countries. How both OMGE and SOP are to be operationalised under Article 6.4 is still subject to debate. While the concepts have originally only been agreed for the Article 6.4 mechanism, their extension to cooperative approaches under Article 6.2 is also being considered, as two of the most contested issues in the negotiations. The latest Article 6.2 draft guidance specifies that stakeholders “are strongly encouraged to cancel ITMOs to deliver an overall mitigation in global emissions” and to build-in a voluntary contribution to adaptation finance in their cooperative approaches. Whether the full ratification of the Doha Amendment in September 2020, which expands the SOP beyond the CDM to all KP market mechanisms (Joint Implementation and International Emissions Trading), will have an impact on these negotiations remains to be seen, but certainly creates a stronger institutional precedent.

In the implementation of Article 6 pilots, by contrast, OMGE and SOP do not play a central role. Most pilots adopt a ‘wait-and-see’ approach and plan on implementing whatever guidance is coming out of the negotiations. Recent contracts include a general clause that pilots will adhere to the UNFCCC rules and allow for the possibility that a SOP will have to be paid for adaptation or mitigation outcomes will have to be cancelled. The KliK Foundation specifies, for example, that the carbon price is based on the owner’s generation costs and that any deduction of mitigation outcomes as a result of the applied SOP or the OMGE will lead to a higher price for an ITMO (subject to the maximum price level they are willing to pay). Similarly, BMU considers the possibility that additional payments will have to be made for the TD losses pilot. In current pilots, these additional costs are likely to be shouldered by the buyers. Whether such costs would in the future be covered by the buying party or the activity owner might depend on the supply-demand balance on the market. It can be expected that buying parties would pay for it if there is a demand overhang and selling parties would carry the costs in case of a supply overhang.

Unlike the active pioneering role pilots are playing in the area of baselines and additionality determination, they tend to not actively test out approaches to OMGE and SOP. This underscores the relevance of the negotiations in this regard. An exception to the rule is the JCM that since the beginning has sought to implement OMGE through conservative baselines. Also, an administrative SOP has come up as a topic in some bilateral agreements on Article 6 cooperation. Revenues from such a SOP may potentially

emerge as a resource which host countries can use to establish and sustain the institutional capacity required to oversee Article 6 activities, and to perform all accounting and reporting requirements.

J. PILOTS ARE ROBUST EVEN AGAINST THE CONTINUING UNCERTAINTY OF THE ARTICLE 6 RULEBOOK

Buyer countries, public agencies and multilateral initiatives are going ahead with their piloting activities, notwithstanding the lack of Article 6 rules. Many of these actors base their efforts on the draft guidance adopted at COP25, especially regarding corresponding adjustments. Therefore, some project developers argue that sufficient rules would already be in place to make a deal, referring for example to the San José Principles (evident in the GGGI work). The San José Principles could thus become the de facto reference framework for key piloting actors on the buyer side.

Article 6 pilots have generally been designed in a way that would allow them to continue to operate in the case that Article 6 negotiations would fail again at COP26 in 2021. The Swiss government takes the position that Article 6.2 is operational for the compliance purposes with the Swiss CO₂ Act and notes that the full implementation of their pilots could also be based on para 77d of Decision 18/CMA.1. The Swiss procurement processes will thus not face any delays.

Despite this, concerns regarding the scenario that Article 6 may fail again at COP26 have been raised by stakeholders. Some decision makers such as the CCF, have expressed that they might decide to discontinue their Article 6 engagement. Also, it is feared that decisively changing provisions could come with a sudden additional administrative burden, endangering ongoing operations (ABM).

While ongoing pilot activities seem robust in the face of the Article 6 uncertainty, it cannot be known how much momentum might have been lost because the rules have not been agreed yet. The continuing failure to establish clear Article 6 rules is undermining the legitimacy and scale of multilaterally governed carbon markets. Reaching an agreement would be pivotal to ensure the transformational potential of future carbon markets and provide pilot activities with the needed security, so that existing efforts can be successfully upscaled and replicated.

5. CONCLUSIONS

Our analysis has shown that piloting activities have progressed in their development but that the pace of new initiatives has slowed down due to the failure to agree on Article 6 rules as well as the COVID-19 pandemic. The failure to agree on Article 6 rules at the UNFCCC level is particular concerning for host countries, as it prolongs uncertainty about the requirements for host countries to participate in global carbon markets and prevents the Article 6.4. mechanism from becoming operational. The impacts of the COVID-19 pandemic have led to activity-specific delays but not terminated any of them. Despite the absence of an Article 6 rulebook and the hampering impact of external impacts, pilots have moved further along the implementation chain and reached some important milestones. In general, the number of countries that are driving Article 6 piloting remains small with only few active early movers such as Japan, Switzerland and Sweden. However, these frontrunners have managed to achieve significant milestones and overall investment in piloting initiatives has been increasing.

Most Article 6 pilots currently remain in the preparatory phase for implementation. Arguably, Article 6 activities that are advancing on establishing MOPAs for first ITMO transfers could also be assigned to the pilot phase. So far, none of the activities has reached the full implementation phase since corresponding adjustments and the start of country reporting has not yet begun as NDC implementation periods have not yet started. However, pilots progress towards full implementation e.g. by concluding commercial and bilateral agreements (e.g. JCM, Switzerland-Peru).

Another reason for the slowed down pace is that the Article 6 community seems to be waiting for the emergence of 'lighthouse activities' upon which other initiatives can build. The negotiation of governmental and commercial agreements for Article 6 activities is a time-consuming endeavour as it requires the establishment of new processes. The bilateral agreement signed in October 2020 between Switzerland and Peru represents an important milestone. As a successful 'lighthouse activity' this agreement and the linked procurement programme of the KliK foundation which has called its third round of proposals could thus lead the way for others. However, it has to be mentioned that bilateral agreements constitute the starting point of the cooperation with many technical details related to the Article 6 activity cycle and NDC accounting still to be fully operationalised. Besides, pilots seek to develop workable approaches but are ultimately depending on UNFCCC decision on open crunch issues in UNFCCC negotiations. This is also the reason why buyers and sellers do currently not negotiate specific terms on adaptation and administration taxes (SOP) and OMGE but rather wait for the guidance from adopted Article 6 rules.

Usually, it is the buying countries that initiate the development of cooperative approaches whereas host countries are only cautiously entering agreements. Reasons for this include that transferring countries have more to lose in terms of 'mitigation assets' and do not want to be pressured into agreements without understanding their repercussions. Host countries take their unconditional NDC targets seriously and first need to reach a clear understanding of which emission reductions can be signed off without endangering the achievement of their own NDC targets. In addition, the transferring Party has the more difficult role regarding the oversight of the activities as well as ensuring the necessary mitigation policy frameworks are in place. There is often also an asymmetric distribution of information notable between host and buyer countries due to limitations of resources and institutional capacity within host countries, which has led to the emergence of various capacity building programmes. It should be noted that the majority of Article 6 pilots do not involve private sector entities. An important exception is the KliK programme whose three submission rounds have attracted a large number of private sector players.

Despite the fact that Article 6 pilots are currently facing diverse barriers, there are no deal-breakers. However, insights from the stakeholder consultations suggest that essential engagement is required from all stakeholders to build the necessary capacities. This puts an emphasis on the need for enabling initiatives to move further along the implementation chain. The number of transferring countries that can and want to build this capacity will most likely stay rather limited before UNFCCC rules have become clearer. The development of cooperative approaches under Article 6.2 requires a high degree of host country involvement and trust between the participating Parties.

Article 6 pilots are robust even against the continuing uncertainty of the Article rulebook finalisation. Many Article 6 pilots have been designed in a manner that they would still continue to operate in case Article 6 negotiations would fail again at COP26 in 2021. The initiatives also consider the full implementation of their pilots based on paragraph 77d of the transparency decision 18/CMA.1 as potential option in case the rulebook's finalisation gets further delayed. The San José Principles which are referenced in the Swiss-Peru agreement could become a potential de facto reference framework on the buyer side.

A prolonged failure to establish clear rules for Article 6 would jeopardise the legitimacy of international carbon markets. It might even make it impossible to have **multilaterally governed carbon markets. In any case, the scale of international carbon markets would be reduced due to their limitation to bilateral initiatives with a fragmented character.** Therefore, reaching an agreement on the Article 6 rulebook at COP26 is essential to ensure that future carbon markets can harness transformation in line with the long-term ambition of the PA. The Article 6 portfolio could potentially see a rapid build-up of the Article 6 pipeline if a CDM transition process is agreed upon that clearly defines which activities can

transition. Whether voluntary carbon markets can be linked with Article 6 depends on the willingness of host countries to allow transfers, especially if voluntary market transactions lead to CAs.

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ANNEX I: FACTSHEETS ON ARTICLE 6 PILOTS THAT AIM TO GENERATE ITMOs

African Development Bank
**THE ADAPTATION BENEFITS
MECHANISM**

Canada-Chile
**PROGRAM TO REDUCE EMISSIONS
IN THE WASTE SECTOR**

EBRD
**INTEGRATED CARBON PROGRAMME
FOR THE SOUTHERN AND EASTERN
MEDITERRANEAN**

Germany
**PILOT ACTIVITIES OF THE FEDERAL
MINISTRY FOR ENVIRONMENT,
NATURE CONSERVATION AND
NUCLEAR SAFETY**

Japan
**THE JOINT CREDITING MECHANISM
ACTIVITIES**

NEFCO – Peru
**COOPERATIVE ARRANGEMENT
PILOT IN THE SOLID WASTE SECTOR**

Swedish Energy Agency
PILOT ACTIVITIES

Switzerland
**PILOT ACTIVITIES OF THE CLIMATE
CENT FOUNDATION**

Switzerland
**ITMO PURCHASE PROGRAM OF THE
KLIK FOUNDATION**

World Bank
**THE STANDARDIZED CREDITING
FRAMEWORK**

World Bank
**THE TRANSFORMATIVE CARBON
ASSET FACILITY**

AFRICAN DEVELOPMENT BANK: THE ADAPTATION BENEFITS MECHANISM

The Adaptation Benefits Mechanism (ABM) aims to create a results-based finance instrument to encourage private investments in and public financing of adaptation projects in Africa. The mechanism will assist developing countries with achieving their adaptation priorities set out in their NDCs that are conditional on international support. Developed since 2016 by the African Development Bank (AfDB), the ABM is the first attempt to operationalise a non-market mechanism for adaptation by creating a new asset – certified adaptation benefits (ABs). The governments of Uganda and Ivory Coast have made formal submissions to the UNFCCC expressing support for the mechanism.¹⁰ In October 2019, the AfDB established the Executive Committee of the ABM (ABM EC)¹¹, developed draft modalities and procedures for the mechanism and initiated a pilot phase until 2023 in which 10-12 demonstration projects will be tested in Africa.¹² The ABM was mentioned in the draft text for detailed rules of Article 6.8 of the PA during COP25 in December 2019.

SUMMARY TABLE

Specific sectors and technologies	Any technology/sector where ABs can be delivered and quantified. Requires design/availability of robust methodologies for the quantification and MRV of the ABs. Existing pilot methodologies ¹³ include: renewable water pumping technologies, clean cooking, grid extension, watershed management and off-grid electrification.
Possible stakeholders and participants	Private investors, Parties to UNFCCC, non-governmental organisations, philanthropic organisations, development banks
Overall resources available (million \$)	USD 1 million, but growing
Form of Article 6 cooperation	Article 6.8 (non-market approaches)
Relationship with NDCs	Contribution to the achievement of the adaptation component of NDCs. Accounting of emission reductions contribution to be elaborated for projects with mitigation co-benefits.

¹⁰ Government of Côte d'Ivoire. Submission by the Government of Côte d'Ivoire to SBSTA 47 in response to the call for input on the Framework for Non-Market Approaches described in Articles 6.8 and 6.9 of the Paris Agreement. 2017.

¹¹ AfDB. African Development Bank climate change initiative: Top experts form the Adaptation Benefits Mechanism board. October 2019.

¹² AfDB. Adaptation Benefit Mechanism (ABM) - Status of ABM. 2020.

¹³ Regarding the ABM methodology, guidelines have been adopted. For further information, please see: AfDB. Development of an Adaptation Benefits Mechanism methodology. 2020.

Volume and price of ITMOs	No ITMOs will be generated since ABs will cover only the impacts of adaptation actions. The price of these units is based on the incremental project activity costs; thus, it varies depending on the technology/measure applied, sector and location of the activity implemented.
Sustainable development benefits	Depending on the activity implemented: in general terms enhanced resilience of communities in host countries, contributions to the sustainable development goals should be described in methodologies and project design documents.

KEY FACTS

The ABM is a non-market-based mechanism that will generate ABs that are not tradable and will instead be delivered directly to the end-user. It is envisioned that private sector entities acquire ABs for their corporate social responsibility plans or for other climate change-related actions. Conceptually, the ABM builds on the CDM, in which carbon credits are issued for mitigation impacts achieved against a baseline scenario, and considers their approach to using approved methodologies that specify MRV requirements to ensure transparency. The ABM can be implemented in any sector relevant for adaptation but subject to the condition that activities contribute to achieving the adaptation component of the host Party's NDC and that they are additional, i.e. an activity would not be implemented in the selected sector/country without the incentive provided by the ABM. Baseline and monitoring methodologies can be submitted to the ABM EC and will be assessed by a Methodology Panel applying initial guidelines adopted in September 2020.¹⁴ The AfDB – the founder of the mechanism – has developed some initial methodologies that can be tailored to a specific context. Those concepts include among others; solar powered irrigation pumps to help farmers overcome unreliable rainfall, coastal protection through afforestation with mangrove trees and job creation for the most vulnerable groups affected by climate hazards. Standardisation of methodologies and use of proxies is encouraged to reduce transaction costs. ABs claimed will be verified to ensure they are real.¹⁵

The demonstration projects will be sponsored by the AfDB i.e. the certificates for the ABs of these projects will be granted to the project developer for free. However, the ABs of replication, up-scaling or continued maintenance and operation of the projects will be promoted to various potential investors or lenders to mobilise enhanced action and finance. It is envisaged that after the pilot phase, sufficient infrastructure, methodological work and awareness will exist to enable project developers and host countries to determine the ABs in advance and sign off-take agreements with donors or climate change financiers, without having demonstration projects in place first, or on the basis of micro-pilots. The off-take agreements will guarantee payments on delivery of ABs following verified performance of the adaptation projects and certification of the ABs. Payments for ABs

¹⁴ AfDB. [Development of an Adaptation Benefits Mechanism methodology](#). 2020.

¹⁵ AfDB. [Development of an Adaptation Benefits Mechanism methodology \(Draft Vs.3\)](#). 2020.

will enable financial institutions to consider ABM revenues as a new source of income and as additional security against loans and equity investments.

The ABM EC has the task to oversee and provide strategic direction for the operationalisation and execution of the pilot phase. Moreover, the Committee develops, adopts and reviews rules, procedures, guidelines, tools and infrastructure necessary for the operationalisation of the ABM.¹⁶ It consists of eight mostly African senior climate experts with complementing expertise in various relevant areas and working experience with stakeholder groups of the ABM.¹⁷ The ABM EC is supported by a Secretariat hosted by the AfDB to enable full support and advice during the piloting phase. The Methodology Panel and associated Pool of Experts will have a strong focus on aligning accounting and reporting requirements with the Enhanced Transparency Framework of the PA, combined with the development of new methodologies for generating ABs and calculation of the incremental costs. The governance structure is therefore envisioned to resemble that of the CDM but in a less complex manner (more similar to small-scale methodology and procedures of the CDM).

Once the activities, governance structure and the beneficiary process are in place, ABs generated can be used to contribute to the achievement of adaptation goals as well as Sustainable Development Goals (SDGs). Investors already interested in ABM activities comprise development organizations, multilateral and bilateral agencies and various funds (including the Clean Technology Fund), philanthropic organisations and private entities wanting to meet corporate social responsibility requirements, reporting requirements or specific policies on climate-related activities. Local communities are intended to benefit the most from the ABM as the mechanism focuses on adaptation activities in rural or low-income areas where climate vulnerability is particularly high. Private sector entities, local governments or local Non-Governmental Organisation (NGOs) are good candidates to develop adaptation activities under the ABM.

INTENDED FORM OF COOPERATION

The ABM is envisioned to become recognised as one of the non-market-based approaches under Article 6.8 of the PA. Cooperation under the ABM could comprise public-public, public-private or private-private purchase agreements, such as off-take agreements for payment upon delivery of certified ABs. While there is currently a lack of certainty regarding the key elements of Article 6.8 and how these will be relevant for the ABM, the increasing importance of enhancing resilience and delivering adaptation finance could result in more multilateral support of the ABM's non-market approach.

¹⁶ AfDB. [Terms of Reference for the interim Adaptation Benefits Mechanism Executive Committee](#). May 2020.

¹⁷ AfDB. [ABM Executive Board](#). 2019.

TRANSACTIONAL SET-UP

Since ABs are not tradable, exchanges are based on voluntary agreements between potential buyers and project developers. However, there is currently no precedent or plan for an AB-based financial transaction. The amount of ABs that could be generated depends on the activity type as well as how ABs are quantified. Other metrics can be used depending on the project type. AB prices are influenced by the eligible costs for the implementation of each activity (eligible costs are identified in the methodology), and a project-specific premium for the developers. The price thus varies depending on the activity type and location, and how these elements affect the implementation costs. AB buyers will receive the cancellation codes for the ABs with the ABM registry so that no further trade is possible.

RELATIONSHIP WITH NDCs

A Letter of Approval from the host country will ensure that ABM activities are linked directly to host countries' NDCs as well as other relevant climate policies and priorities. The ABM does not directly target mitigation activities and as no mitigation outcomes will be internationally transferred, no corresponding adjustments are required. An open question seems to be how to account for mitigation co-benefits of ABM-supported activities, although it is clear that the intention is not to export any mitigation outcomes, and that these are accounted for within NDCs. The ABM can also contribute to the development of quantifiable targets and related metrics for adaptation components under NDCs.

ACTIVITIES

In September 2019, the first ABM demonstration project got approved in Côte d'Ivoire. The goal is to replicate this project in other regions in Côte d'Ivoire and in at least three other cocoa producing countries in the region. In addition to this, further funding (USD 470,000) for four activities in Benin, Burkina Faso, Mali and the Republic of the Congo has been secured under the 'Implementing regional and national adaptation priorities in Central

Name of activity	Country	Sector	Start date	Emission reduction potential	Technology
Local livelihoods resilience: enhancing the resilience of small-holder cocoa farmers	Côte d'Ivoire	Agriculture	Beginning of 2021	n.a.	Sustainable climate-smart agro-forestry measures

and West Africa' project. Four specific projects are still to be selected by the AfDB though. Next to these five pilots, a Green Climate Fund (GCF) programme is currently in preparation for 10 more pilots in six Least Developed Countries of which a water-related project in Nigeria is in an advanced stage.

CHILE CANADA AGREEMENT ON ENVIRONMENT COOPERATION: RECICLO ORGÁNICOS

The Chile-Canada Agreement on Environment Cooperation entered into force in July 1997 in parallel to the bilateral Canada-Chile Free Trade Agreement and provides a framework for bilateral cooperation on environmental issues. Within the context of this cooperation and in light of the ratification of the PA in 2016, Canada has offered financial and technical support to Chile to deploy technologies and to pilot innovative approaches supporting the reduction of methane emissions in the waste sector through the '*Programa Reciclo Orgánicos*'¹⁸ (the 'Programme').¹⁹ The Programme is seen as a concrete example and opportunity for exploring options for the international exchange of mitigation outcomes within the framework of Article 6.

SUMMARY TABLE

Specific sectors and technologies	Waste sector, organic waste; main technologies: composting, anaerobic digestion, landfill gas capture
Possible stakeholders and participants	Ministry of Environment and Climate Change Canada; Ministry of Environment Chile; nine cities (Santa Juana, Talcahuano, Talca, Rapa Nui, Viña del Mar, Ancud, Castro, Quellón) and two other cities (Independencia, Molina) joining soon; region (Bíobío: Copiulemu and VEMARC landfill); company (GEA) ²⁰
Overall resources available (million \$)	USD 5.3 million (CAD 7 million)
Form of Article 6 cooperation	Instrument-neutral under article 6 of the Paris Agreement. Exploring article 6.2 as an option.
Relationship with NDCs	Contribution to the achievement of the NDC mitigation goals.
Volume and price of ITMOs	The 4-year programme has been launched in April 2017 and provides CAD 7 million for capacity building and technical assistance. ²¹ The price of any resulting mitigation outcome is not yet determined.
Sustainable development benefits	The programme will help to protect the soil, water bodies and improve air quality. The programme also supports the enhancement of the recycling rates of organic waste, provides online educational material and offers workshops to involve citizens and raise awareness.

¹⁸ Spanish for Organic Recycling Program

¹⁹ Reciclo Orgánicos. *Program*. 2020.

²⁰ Ministry of Environment. *Programa Reciclo Orgánicos: los principales hitos a dos años de su lanzamiento*. June 2020.

²¹ Reciclo Orgánicos. *Program*. 2020.

KEY FACTS

In April 2020, Chile submitted its updated NDC in which the previous emission intensity conditional and unconditional goals were replaced with unconditional absolute targets. In the updated NDC, Chile commits to a GHG emissions level of 95 MtCO₂e by 2030 with a GHG emissions maximum (peak) by 2025 and an emission budget of not exceeding 1,100 MtCO₂e between 2020 and 2030.²² Canada will support Chile with the implementation of its NDC through the 'Reciclo Orgánicos' initiative. The 4-year Canada-Chile Programme started in April 2017 (until March 2021) and provides CAD 7 million of funding for capacity building as well as technical assistance to support clean innovation and reduce methane emissions from existing landfills while diverting organic matter from landfills. The Programme has four overarching objectives:

- Reduction of methane emissions through technology deployment in selected cities;
- Development of MRV methodologies and systems;
- Raising citizens' awareness regarding organic waste management and climate change through communication, education and involvement²³;
- Leveraging co-financing from public and private sector partners for the planned projects as well as creating the financial conditions to enable scaled-up implementation by engaging with international financial institutions and multilateral development banks.

Furthermore, the Programme is supporting the Chilean Ministry of Environment in developing a National Strategy for Organic Waste (Estrategia Nacional de Residuos Orgánicos) that will be launched in the coming months. In August 2020, the draft of the strategy was published to consult the public for two months. The strategy's goal is to achieve a 66% organic recycling rate by 2040.²⁴

The key stakeholders of the Programme are the Canadian Ministry of Environment and Climate Change and the Chilean Ministry of Environment. The main beneficiaries include the Government of Chile, as well as the cities (Santa Juana, Talcahuano, Talca, Rapa Nui, Viña del Mar, Ancud, Castro, Quellón), regions (Bíobío) and companies (GEA) that have implemented organic waste management projects. Canada's government has provided equipment for composting plants which have started operations in Santa Juana and Talcahuano.²⁵

As mentioned above, one of the main objectives is the development of MRV methodologies and systems. As of now, three MRV methodologies of

²² Republic of Chile (2020): [Chile's Nationally Determined Contribution Update 2020](#). April 2020.

²³ Ministry of Environment. [Programa Reciclo Orgánicos: Comunas chilenas combaten cambio climático](#). July 2019.

²⁴ Ministry of Environment. [Programa Reciclo Orgánicos: los principales hitos a dos años de su lanzamiento](#). June 2020.

²⁵ Interview with a representative of the Chilean Ministry of Environment. August 2020.

emissions protocols for landfills, anaerobic digestion and composting have been developed but not finalised yet. The MRV system will help to ensure the credibility and robustness of the emission reductions achieved, building on the experience with the CDM.²⁶ It will contribute to:

- Develop GHG plans and reporting templates for each activity;
- Support onsite MRV for all activities, including support for onsite smart metering and linking to digital technologies (e.g. blockchain) for innovative MRV solutions;
- Compile and report the results for all projects.

The Programme is also exploring opportunities for new and innovative cooperative arrangement such as ITMO transfers under Article 6 of the PA. The governance structure around the generation of ITMOs is not yet defined and will be clarified at a later stage by Canada and Chile in consideration of the rules being developed for Article 6. First steps are currently taken in the form of a work plan towards setting up a bilateral agreement between both governments to define rules for a cooperative approach under Article 6. This work plan is currently under revision.²⁷

INTENDED FORM OF COOPERATION

The Programme is designed as instrument-neutral under Article 6 of the PA. However, the Canadian Ministry of Environment explicitly refers to the fact that it will “explore considerations for bilateral discussions for mitigation transfers”.²⁸ In this context, both countries are considering the opportunity to pilot the use of mitigation outcomes to be counted towards the achievement of NDC objectives. The results of the pilots will take into account ongoing institutional reforms in the Chilean waste sector, which could make it easier for Chile to integrate regulatory provisions needed for exchanging mitigation outcomes as well as providing incentives for private investments.

TRANSACTIONAL SET-UP

The Programme is still at an early stage of implementation and will first focus on the implementation of the technologies and capacity building before defining and testing the infrastructure for the generation of ITMOs. Through the development of a potential ITMO pilot, the Programme aims at sending a signal to the private sector that carbon markets are effective, leverage existing potential opportunities and replicate the cooperative approach in other jurisdictions.

²⁶ Reciclo Orgánicos. [MRV](#). 2018.

²⁷ Interview with a representative of the Chilean Ministry of Environment. August 2020.

²⁸ Franck Portalupi, [Environment and Climate Change Canada. Canada-Chile Program to reduce Emissions in the Waste Management Sector](#). January 2018.

RELATIONSHIP WITH NDCS

The Programme aims to support Chile's NDC implementation in the waste sector which is identified as one of the country's priority sectors. The use of the emission reductions that may be generated is still to be decided upon. Other key objectives are the improvement of the waste management processes, protecting the soil and water bodies, improve air quality, developing MRV frameworks, and supporting local communities and capacity building.

Reciclo Orgánicos has been envisioned to not only identify opportunities to capture landfill gas from existing waste disposal sites, but also to implement projects to divert organic residues from the municipal waste stream and utilise them in composting facilities or anaerobic digestion plants to produce compost and/or a source of clean energy. The Programme works with nine municipalities, where the Government of Canada is providing financial and technical assistance for the operationalisation of a waste treatment plant (composting, anaerobic digestion, landfill gas capture depending on the city) as well as community engagement to raise awareness among the residents about the benefits of recovery and utilisation of organic waste.

Besides technology deployment and emission reductions, Canada and Chile are working together towards:

- Strengthening MRV and develop capacity-building for tracking, monitoring, and reporting emission reductions; Currently finalizing three new GHG verification protocols: Landfill gas, anaerobic digestion, composting.
- Identifying mitigation activities and technologies to contribute to the NDC targets.
- Developing incentives for partners to replicate the model in other communities/facilities or make information available to other jurisdictions especially the Pacific Alliance, and
- Bilateral discussions on international transfer of mitigation outcomes.

ACTIVITIES

In the following table, the different activities under the Programme are listed.²⁹ If possible, information on the deployed technology is provided.

Name of activity	City, other actor	Sector	Start date	Emission reduction potential	Technology
Programa Reciclo Orgánicos	Santa Juana	Waste	May 2018	n.a.	Machinery
Programa Reciclo Orgánicos	Talcahuano	Waste	During 2018	n.a.	Machinery
Programa Reciclo Orgánicos	Talca	Waste	2020 onwards	n.a.	Machinery for largest composting plant
Programa Reciclo Orgánicos	Rapa Nui	Waste	-	n.a.	Composting plant
Programa Reciclo Orgánicos	Viña del Mar (Lajarilla landfill)	Waste	-	n.a.	Composting plant
Programa Reciclo Orgánicos	Ancud-Castro-Quellón	Waste	-	n.a.	Composting plant
Programa Reciclo Orgánicos	Bíobío (Copiulemu and CEMARC landfill)	Waste	-	350,000 tCO ₂ e (CEMARC landfill)	Landfill biogas capture

²⁹ Ministry of Environment. *Programa Reciclo Orgánicos: los principales hitos a dos años de su lanzamiento*. June 2020.

EBRD: INTEGRATED CARBON PROGRAMME FOR THE SOUTHERN AND EASTERN MEDITERRANEAN³⁰

The European Bank for Reconstruction and Development (EBRD) together with financial backing from the Spanish Office for Climate Change ('Oficina Española de Cambio Climático' - OECC) is supporting the transition to low carbon economies in the Southern and Eastern Mediterranean (SEMED) region through the development of an Integrated Carbon Programme. The programme is a comprehensive package that includes technical assistance, policy dialogue and capacity building in carbon markets, and a financing instrument for emission reduction projects.

SUMMARY TABLE

Specific sectors and technologies	Renewable energy and energy efficiency
Possible stakeholders and participants	Egypt, Jordan, Morocco, Tunisia
Overall resources available (million \$)	N/A
Form of Article 6 cooperation	Technical cooperation, technology transfer, policy dialogue, results-based finance Increased levels of information on carbon market, result-based climate finance opportunities and structuring
Relationship with NDCs	Contribution to achievement of domestic and international goals, to be further informed by policy dialogue in country
Volume and price of ITMOs	To be determined from market and modeling study
Sustainable development benefits	Increased deployment of renewable energy and energy efficiency

³⁰ This factsheet was updated based on publicly available information. Stakeholders were not available for interviews at this time.

KEY FACTS

The Integrated Carbon Programme seeks to identify an approach for the design and implementation of a scaled-up crediting mechanism in the SEMED region. In the EBRD context this region includes Egypt, Jordan, Morocco and Tunisia.

The overall goal of the project is to develop policy reports and MRV-based test cases to further inform the development of scaled-up carbon crediting mechanism under Article 6. The Integrated Carbon Programme will contribute to the respective policy dialogue at country level (NDCs) as well as at the UNFCCC level.

The programme aims to review and test the development of an automated MRV system that is expected to reduce transaction costs. The programme will provide technology transfer opportunities by bringing together project sponsors, technology providers, and financial institutions.

INTENDED FORM OF COOPERATION

The Integrated Carbon Programme is designed as instrument neutral. Results-based finance will be used as a test-case for the further development of scaled-up approaches. Additional forms of cooperation include policy dialogue and technical cooperation to ensure capacity for future participation in carbon pricing mechanisms. A technology transfer component will highlight the potential of automated MRV and strengthen involvement of the private sector in the carbon market.

TRANSACTIONAL SET-UP

The results-based instrument can be calibrated to the project scale, policy context, and commercial arrangements as necessary, to provide for increased deployment of renewable energy. In-country policy dialogue as well as a regional market study and modeling effort will help inform the structure and appropriate level of support.

RELATIONSHIP WITH NDCs

The results-based support is expected to serve as a model for increased ambition. In-country policy dialogue will ensure that support is aligned with the country's NDC as well as with expected international policy developments such as Article 6 and other initiatives. Policy alignment at both the national and international level will seek to ensure the long-term sustainability of the mechanism.

PILOT ACTIVITIES OF THE FEDERAL MINISTRY FOR THE ENVIRONMENT, NATURE CONSERVATION AND NUCLEAR SAFETY (BMU)

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is supporting and implementing a number of different Article 6 activities that aim to help countries to not only prepare for the new carbon markets under the Paris Agreement, but also to help implement and meet their sustainable development and climate goals.

On this basis, the BMU is supporting the development of Article 6 pilot activities with the aim to first and foremost operationalise Article 6 and build capacity in partner countries, and as a second step generate emission reductions (ERs) to be purchased as voluntary compensation. Support is provided to countries that have an interest in developing a strategy to making use of Article 6 to increase their NDC ambition.

BMU funded Article 6 pilot projects currently underway include the Program for reducing technical losses in the power grid ('TD-Losses'), outlined in more detail below, as well as a project focusing on the cooling sector that has only recently been authorised for development. As this project currently remains in the conceptual stage it is too early to report on it further.

Overall, both concepts supported by BMU arise out of the same underlying idea: Article 6 financing is paired with other financial means, usually in the form of climate finance disbursed by the International Climate Initiative (IKI). An important feature of the projects considered by BMU is that they should be scalable and replicable for other regions and technologies.

SUMMARY TABLE

Specific sectors and technologies	Energy efficiency
Possible stakeholders and participants	Participants: electricity consumers operating under maximum demand tariffs; Stakeholders: power utilities, transmission distribution companies, energy regulatory authorities, climate change focal points in partner countries and BMU
Overall resources available (million \$)	5.9 million USD (5 million EUR) (carbon payment) combined with a low interest loan component (value of interest payment reductions approx. 41.23 M USD (34.71 M EUR))
Form of Article 6 cooperation	Article 6.2

Relationship with NDCs	The electricity sector (i.e. including transmission and distribution) is included in the NDCs of all four partner countries. The NDCs are however not specific enough to derive the baselines. Hence, the Article 6 programme is based on a dynamic baseline which considers i) the current standardised baseline for the CO ₂ intensity of the power system, ii) the current technical losses and iii) the current electricity delivered / lost in the distribution and transmission systems. These parameters are modeled using a CDM methodology to establish the dynamic baseline. Further, please see 'volume of ITMOS'
Volume and price of ITMOs	There is no fixed volume of transfers of ITMOS. Considering the financing structure of the A6 financing instrument (low interest loan plus subsidy), the financially viable energy savings potential is estimated to 558.5 GWh/yr corresponding to 494,392 tCO ₂ /yr emission reductions. There is also no fixed price.
Sustainable development benefits	Avoidance of emissions, improved power supply in the countries, improvement of the competitiveness of the industrial companies through reduced electricity payments

EXPERIENCE IN AFRICA

THE PROGRAM FOR REDUCING TECHNICAL LOSSES IN THE POWER GRID ('TD-LOSSES')

KEY FACTS

The TD-Losses Program builds on early methodological work under the CDM and a project aimed at updating the baseline for the South African Power Pool (SAPP) – a cooperation of the national electricity companies in Southern Africa. The purpose of the Program is to install Reactive Power Compensation (RPC) equipment in industrial facilities in four African countries – Zambia, Uganda, Mozambique, and Zimbabwe. As a result, emissions would be reduced and the quality of the power supply improved.

The TD-Losses Program started in 2019 in close cooperation with national stakeholders. Currently, Letters of Intent (Lols) have been signed with Zambia, Uganda, and Mozambique.

The Program makes use of an innovative financial tool. It includes blended financing instruments based on an export credit agency (ECA) cover (i.a. Euler Hermes), concessional loan provided by the African Development Bank (AfDB), carbon finance provided by BMU, and lending by a regional commercial bank (Standard Bank).

The considered approach is scalable and more countries could be included in the Program in the future. The Program design is replicable for other technologies, e.g. cooling.

INTENDED FORM OF COOPERATION

The Program aims at testing Article 6.2 cooperative approaches under the Paris Agreement. Therefore, should the pilot activity meet the emerging guidance and requirements under Article 6, it could transition to Article 6.2.

RELATIONSHIP WITH THE NDC

The pilot activity is inside the scope of host countries' NDCs. The Program has not engaged in quantifying the NDCs of host countries. This aspect will become clearer when the Program will have to address the risk of overselling, which will be done in agreement and close collaboration with the host country.

The emission factor is considered as the basis for setting the crediting baseline. However, the first step in the baseline setting process will be defining the relationship with the NDC. One question that will have to be addressed is, for example, if/how the baseline should be adjusted when new policies and national regulations are put in place to reflect the changes that have been brought about by the Program – in other words, if the country integrates action or policies from the Program. Thus, the transfer agreement will incorporate an algorithm how to share the mitigation outcomes among the parties.

TRANSACTIONAL SET-UP

The German government intends to sign commercial agreements (e.g. 'Mitigation Outcomes Purchase Agreement' (MOPA)) with countries individually and is currently negotiating these with host countries. The transfer agreement for ITMOs is being elaborated. Moreover, the aim of the Program is to provide implementing countries with incentives to increase energy efficiency and lead to the uptake of policies such as adjusted electricity tariffs, among others. While this would mean that the share of ERs for the buyer country is smaller, there is an overall increase of ERs that are more financially attractive.

The Program does not foresee the definition of a fixed price. It is merely envisaged as a partnership, where the financing party as well as the implementing party agree on a cooperation. BMU and partner countries have discussed a transparent and reproducible algorithm, which allocates a share of generated emission reductions to Germany / BMU (i.e. share of energy savings / emission reductions, which would not have been financially viable w/o the A6 financing structure) and another share to the host country (i.e. share of emission reductions which would have been financially viable w/o the financing structure).

Moreover, carbon revenues are spent following the subsequent considerations:

- The carbon subsidy is offered only to an end customer, if and only if the intervention is not financially viable despite the low interest loan and the intervention is making economic sense;
- The amount of the subsidy is determined for each customer, following a specific algorithm (based on data provided by utilities and current tariffs) and corresponds to exactly the amount which is needed for the intervention to become financially viable. This assures an efficient use of scarce carbon finance and avoids so-called 'windfall profits'.

The Program aims to maximise energy savings combining national- and international efforts. Hence, it is inappropriate to transfer all emission reductions to BMU as financing party. Merely, the Program intends to split the emission reductions generated between Germany/BMU (share, which is financially non-viable w/o the financing structure) and the partner countries (share, which is financially viable w/o the A6 financing instrument).

The payment of share of proceeds and the achievement of an overall mitigation in global emissions (OMGE) will be addressed in the agreement. The agreement will include a clause stating that these issues will be adjusted according to the decision on Article 6 rules.

ACTIVITIES

Name of activity	Country	Sector	Start date	Emission reduction potential	Technology
Program for reducing technical losses in the power grid ('TD-Losses')	Zambia, Uganda, Mozambique, Zimbabwe	Energy efficiency	Implementation 2021 (project development started 2019)	494,392 tCO ₂ /yr	Reactive Power Compensation



THE JOINT CREDITING MECHANISM

Japan established the Joint Crediting Mechanism (JCM)³¹ in 2010 to promote cooperation on mitigation activities in multiple sectors with developing countries.³² Japan has already signed agreements with 17 countries³³ for the implementation of the JCM. As of July 2020, 64 projects have been registered and reached a cumulative emission reduction potential of approx. 296,000 tCO₂e/year. A total of 95 methodologies for quantifying emission reductions have been approved as well. There have been 35 issuances of credits for a total of approx. 88,500 tCO₂e.³⁴

SUMMARY TABLE

Specific sectors and technologies	No sector or technology limitations, provided that a baseline and monitoring methodology is approved
Possible stakeholders and participants	Government of Japan, governments of host countries, Joint Committees that govern the JCM implementation at bilateral level, private and public entities (project implementers), third party entities
Overall resources available (million \$)	Budget for projects (2013-2020) is USD 580 million (JPY 61 billion) ³⁵
Form of Article 6 cooperation	Potentially to be transitioned under Article 6.2 cooperative approach
Relationship with NDCs	Contributes to the achievement of Japan's and host countries' NDC targets
Volume and price of ITMOs	Approx. 88,500 credits (each credit equals one tCO ₂ e) issued so far ³⁶ , no price attached to credits (non-tradable credits)
Sustainable development benefits	Some general provisions for contributing to sustainable development of host countries that should be reported in the project design documents

³¹ The scheme was named "Bilateral Offset Crediting Mechanism (BOCM)" until 2013.

³² GoJ. [Japan's Nationally Determined Contribution](#). 2015.

³³ Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Vietnam, Laos, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand and Philippines

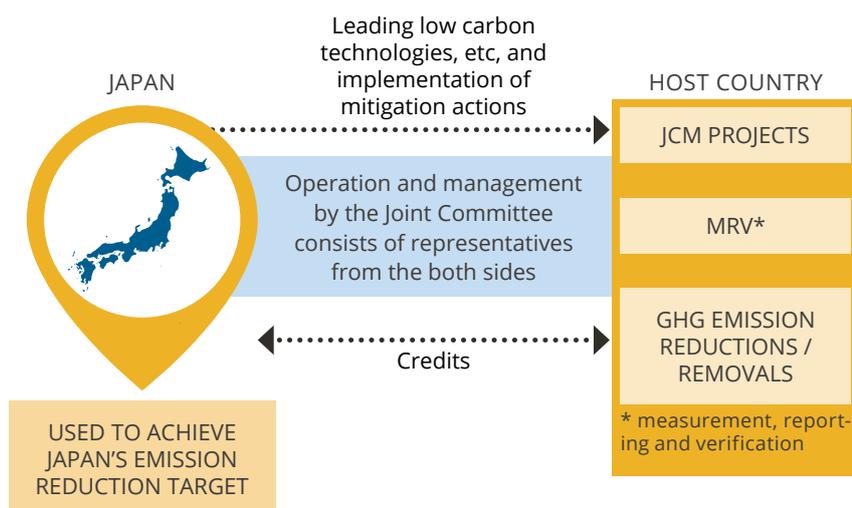
³⁴ Volume of issued credits varies significantly, from a minimum of only 1 credit to a maximum value of almost 35,000

³⁵ GoJ. [Recent Development of Joint Crediting Mechanism](#). July 2018.

³⁶ JCM. [Issuance of credits](#). 2020.

KEY FACTS

The main goal of the JCM is to allow cooperation between Japan and developing countries that can deliver mitigation results to be accounted for toward the NDC achievement of both Japan and host countries. Furthermore, the mechanism contributes to the promotion of low-carbon and high-efficiency technologies and actions in partner countries.



The JCM also supports activities that have the goal of facilitating implementation, such as: preparation of feasibility studies and MRV application studies that serve to develop projects and to evaluate the robustness of MRV methodologies, as well as demonstration and model projects, to test the effectiveness of advanced low-carbon technologies.

The New Energy and Industrial Technology Development Organization under the Ministry of Economy, Trade and Industry (METI), and Ministry of Environment are the main institutional stakeholders from the Government of Japan. METI provides support for MRV-related studies and evaluates MRV methodologies; the Ministry of Environment supports demonstration projects that can contribute to the dissemination of low-carbon alternatives. Other key stakeholders are the host country government in which the activities are implemented, project owners, developers and technology providers. These are involved in the design, implementation and operation of the project activities. Third-Party entities are responsible for the mandatory verification.³⁷

The implementation of JCM activities requires a signed agreement between the Government of Japan and the one of the host countries; the Joint Committees (one for each partner country) approve the country-specific methodologies that are then used by the stakeholders to propose project

³⁷ Third Party Entities are eligible under the JCM if they are accredited under the ISO 14065 or if they are already a DOE under the CDM. JCM (n.d.): Joint Crediting Mechanism Guidelines for Designation as a Third-Party Entity.

activities.³⁸ The Joint Committee is responsible for the approval of the project activities as well. In addition, it operates as the Secretariat of the JCM, providing guidance on MRV and accounting rules. The entire process of submission and approval of proposed activities is closely resembling the CDM registration and issuance process.

INTENDED FORM OF COOPERATION

Originally, the JCM was not developed as an Article 6 compatible scheme, as the mechanism was established prior to the PA. Nevertheless, it has the potential to transition into an Article 6.2 cooperative approach. The bilateral cooperation structure of the JCM matches the nature of Article 6.2 cooperative approaches. The JCM could also register under Article 6.4 though.

TRANSACTIONAL SET-UP

The financing structure is unique among Article 6 pilots, based on a technology export subsidy. 'Model projects' receive a subsidy of USD 38/t CO₂ which is reduced to USD 29 in case at least 5 projects of the same technology have been undertaken in the JCM host country, and USD 24 if at least 10 similar projects exist. Total subsidy can reach 50% of costs in countries without a project of the type, falling to 40% in countries with up to 4 projects and 30% for countries above that threshold. Additionality requires the payback period of the project including the subsidy to exceed 3 years³⁹.

The credits generated under the JCM are meant as non-tradable, thus do not have a price attached. The credits are allocated to both Japan and the partnering country: each party receives directly a predefined share of the total credits issued. Potential options for trading of the credits issued can be explored in the future, depending on ongoing discussions under the UNFCCC. Currently, it is unclear whether the credits issued directly to host country accounts would qualify as ITMOs under Article 6.

A registry system has been available since 2015⁴⁰, allowing for the tracking and accounting for the issued units. Two options are available: either partner countries utilise their own national registry or make use of the project's registry system. The significance of avoiding all forms of double counting is highlighted in the explicit reference to environmental integrity in the signed cooperation agreements. Both sides agree not to use mitigation projects under the JCM for the purpose of other international climate mitigation mechanisms.

³⁸ The Joint Committee acts as the Secretariat of the JCM and works to develop/revise rules, guidelines and methodologies, the registration of projects and discusses the implementation of the JCM.

³⁹ Global Environment Centre Foundation. [Overview of the Financing Programme for JCM Model Projects 2020](#)

⁴⁰ JCM. [Registry system](#). 2020.

In order to create a bridge between the multiple actors involved in the JCM implementation, i.e. project owners, consultants, financiers and technology providers, the 'JCM Global Match' was launched to support and facilitate the match-making process and smooth interactions.⁴¹

RELATIONSHIP WITH NDCS

Japan's NDC explicitly mentions the JCM and its role in achieving emission reductions and in disseminating low-carbon technologies. The mechanism supports the achievement of the country's NDC goals.⁴² Japan currently reports the use of the JCM in its Biennial Reports to the UN-FCCC. The mitigation potential of the JCM is estimated at 50-100 million tCO₂e, to be achieved through the government's budget by 2030.

ACTIVITIES

In the following table, an overview of the implemented activities under the JCM is given.⁴³ The table shows only registered activities and the annual mitigation potential, it does not take into account projects that may be in the pipeline, and in the sector column it does not take into account sectors for which an approved methodology exists but under which no project has been registered.

Name of activity	Country	Sector	Start date	Emission reduction potential	Technology
N/A	Bangladesh	Energy Efficiency (EE), power generation	Mar 13	1070	EE, solar PV/hybrid
N/A	Cambodia	EE, power generation	Apr 14	607	EE, solar PV
N/A	Chile	Power generation	May 15	500	Solar PV
N/A	Costa Rica	Power generation	Dec 13	2,111	Solar PV
N/A	Ethiopia	-	May 13	-	-
N/A	Indonesia	Multiple	Aug 13	196,676	Multiple
N/A	Kenya	Power generation	Jun 13	705	Solar PV, hydro energy
N/A	Laos	EE	Aug 13	567	EE
N/A	Maldives	Power generation	Jun 13	129	Solar PV
N/A	Mexico	-	Jul 14	-	-
N/A	Mongolia	Multiple	Jan 13	23,209	Multiple

⁴¹ Global Environment Centre Foundation (GEC). JCM Global Match. 2020.

⁴² Government of Japan. Japan's submission of the NDC. 2020.

⁴³ JCM. Registered Project. 2020

N/A	Myanmar	Waste	September 15	4,067	Waste-to-Energy
N/A	Palau	Power generation	Jan 14	650	Solar PV
N/A	Philippines	-	Jan 17	-	-
N/A	Saudi Arabia	EE	May 15	2,740	EE
N/A	Thailand	Multiple	Nov 15	47,320	Multiple
N/A	Viet Nam	Multiple	Jul 13	15,996	Multiple

An aerial photograph of a waste management facility, showing large piles of waste, sorting equipment, and yellow containers. A white rectangular box is overlaid on the center of the image, containing the title text in bold white capital letters.

ACTIVITIES OF THE NORDIC ENVIRONMENT FINANCE CORPORATION (NEFCO)

The Nordic Environment Finance Corporation (NEFCO) is supporting the implementation of the Paris Agreement and the operationalisation of international market-based collaboration under Article 6 through the Nordic Initiative for Cooperative Approaches (NICA). NICA is an initiative managed by NEFCO and was jointly established by Finland, Norway, Sweden and NEFCO in 2018. Cooperation funded through NICA builds on the work developed by NEFCO under the Nordic Partnership Initiative on Upscaled Mitigation Actions (NPI). Between 2011 and 2018, NPI supported the development of Nationally Appropriate Mitigation Actions (NAMA) Readiness Programs for the solid waste and cement sectors in Peru and Vietnam, respectively.

NICA will support the operationalisation of Article 6 by: a) **conducting studies, workshops, and side events** that promote stakeholder engagement (including the private sector), coordination, knowledge sharing, capacity building, and ultimately facilitate the development of robust and practical rules for international cooperative approaches under Article 6; and b) **piloting scalable and replicable cooperative models and transaction approaches**. NEFCO is the financial administrator of the activities, which are planned to be procured and implemented by autumn 2021 and will be overseen by NICA donors.⁴⁶

NICA's ultimate aim is to develop a Nordic Article 6 pilot activity. The possible pilot will be designed to meet all potential key Article 6 rules that can be foreseen at this stage, as well as additional criteria that can bring sustainable development co-benefits, including, for example, gender inclusivity.⁴⁷ While some capacity building activities like seminars and studies have been developed and conducted, the work on the pilot is still ongoing and may depend e.g. on availability of funding. NICA has already shortlisted potential host countries and projects based on their identified criteria and is currently engaged in discussions with these host countries.

⁴⁶ NEFCO: Nordic Initiative for Cooperative Approaches.

⁴⁷ The criteria remain confidential at this stage.

SUMMARY TABLE

Specific sectors and technologies	Peruvian Solid Waste Sector
Possible stakeholders and participants	Private and public stakeholders potentially including governments, public-private agencies, landfill or composting operators, waste companies, and other possible project developers
Overall resources available (million \$)	N/A
Form of Article 6 cooperation	Article 6.2 guidance or Article 6.4 modalities and procedures
Relationship with NDCs	The conceptual pilot is focused on the solid waste sector, covered by the Peruvian NDC. NDC states that Peru can consider selling as long as it is not an obstacle to achieving the target.
Volume and price of ITMOs	N/A
Sustainable development benefits	Improved waste management systems lead to a number of sustainable development benefits, including reducing local pollution, the dissemination of diseases, and preventing water and soil contamination

EXPERIENCES IN PERU

A PILOT COOPERATIVE ARRANGEMENT FOR THE SOLID WASTE SECTOR

The NPI supported the Peruvian Government with the development of a conceptual Pilot Cooperative Arrangement for the Solid Waste Sector (SWS) in Peru.⁴⁸ The conceptual pilot study⁴⁹ provides an overall framework for Peru and a partner country to voluntarily engage in the transfer of ITMOs from its SWS Nationally Appropriate Mitigation Action (NAMA). The SWS NAMA, an upscaled mitigation programme which aims to minimise waste disposal and increase waste recovery, requires an estimated financial contribution of approximately USD 47.5 million.

The Peruvian waste sector is the third largest contributor to national GHG emissions, and solid waste accounts for 77% of the waste sector's emissions.⁵⁰ The SWS NAMA comprises regulatory and policy changes in the waste sector, the implementation of mitigation projects and the introduction of a revolving loan fund to channel international finance.

⁴⁸ See the Nordic Partnership Initiative in Peruvian waste sector Homepage for more information and a full description of the Pilot Cooperative Arrangement for the SWS in Peru.

⁴⁹ As a conceptual study, the pilot is not officially endorsed by any of the stakeholders involved and no commitments to the implementation of the pilot have been made.

⁵⁰ SINIA. National Greenhouse Gas Inventory. INGEI. 2012.

⁵¹ Climate Focus. [Opportunities for the Implementation of Article 6 of the Paris Agreement in the Solid Waste Sector in Peru](#). 2018

On this basis, a conceptual Article 6 Pilot Cooperative Arrangement⁵¹ was designed to illustrate how Peru could potentially tap into additional finance streams while accommodating domestic priorities, emerging rules under Article 6 as well as other provisions of the Paris rulebook. The conceptual Pilot comprises the conditions needed for generating ITMOs from the SWS NAMA and their transfer to a partner (buying) country. It also considers the provision of upfront support to the host country to further refine its MRV systems on the national and sectoral level, as well as to enhance the engagement of the private sector to finance and implement the essential actions needed in the SWS.

INTENDED FORM OF COOPERATION

The Pilot Cooperative Arrangement is designed as instrument neutral. This means that Peru and the partner country have the flexibility to roll-out eligible SWS NAMA activities in accordance with Article 6.2 (once domestic and sectoral MRV systems are complete).

RELATIONSHIP WITH THE NDC

The waste sector is incorporated in the Peruvian NDC. Any possible implementation of the conceptual pilot in the host country, and the host country's willingness to engage in the transaction of ITMOs through either Article 6.2 or 6.4, would depend on how it supports the country in meeting its own NDC.

The Pilot suggests that the cooperating countries could establish a multi-year emissions trajectory for each NDC cycle. This trajectory would serve as an indicative, non-binding accounting reference for the countries to measure Peru's overall performance over time. It would thus become an accounting benchmark valid at bilateral/contracting level only. To estimate the generation of ITMOs from the SWS NAMA, the Pilot would define an SWS crediting baseline on a sectoral level. The actual emission reductions leading to ITMOs would then be measured, reported and verified independently.

To avoid overselling ITMOs that are relevant for NDC achievement, the suggested Pilot transaction is conditional on Peru being on track to over-achieving its NDC (or a sectoral target for the waste sector that could be agreed between Peru and the partner country) and on the generation of emission reductions from preselected SWS NAMA activities and technologies that represent an effort beyond what Peru would undertake itself to reach the NDC target.

Irrespective of the Article 6 cooperative approach chosen, the Pilot suggests that any transfer of ITMOs or Article 6.4 units would be met with a corresponding adjustment by the host country, to prevent double

counting. Authoritative information to facilitate the corresponding adjustment should be available at the time of transfer.

TRANSACTIONAL SET-UP

The intended form of cooperation considered in the conceptual pilot is a government-to-government transaction between Peru and a partner country. It entails a call option structure whereby the partner country has the right – but is not required to – purchase ITMOs from the Peruvian SMS NAMA at an agreed prospective date and unit strike price. If the call option is not exercised, ITMOs may be used by Peru for its own NDC achievement or sold to third parties.

In return for the right granted to a partner country by Peru, the partner country would pay a negotiated call option premium to be disbursed in tranches according to pre-agreed payment milestones. The upfront payments following pre-agreed milestones would allow Peru to further develop its MRV capacities and to kick-start the implementation of mitigation actions in the Peruvian waste sector. The precise pre-agreed milestones would be tailored to support on-going market readiness efforts as well as kick-starting the SWS NAMA, and would be agreed in a Mitigation Outcome Purchase Agreement ('MOPA'). These payment milestones could include the establishment of a multi-year emissions trajectory, agreed to by both parties, or Peru having its domestic MRV and registry in place.

ACTIVITIES

Name of activity	Country	Sector	Start date	Emission reduction potential	Technology
Pilot Cooperative Arrangement for the Solid Waste Sector	Peru	Solid waste sector	Autumn 2021	N/A	Methane recovery and flaring, biogas



ACTIVITIES OF THE SWEDISH ENERGY AGENCY

The Swedish Energy Agency (SEA) has been engaged with piloting Article 6 by exploring ways to support the development of mitigation activities that could potentially generate ITMOs. While the work of the SEA is currently still at a conceptual or early development stage and while it has not committed to any Article 6 transactions yet, the Agency is involved in various initiatives to kick start the Article 6 project pipeline.

In 2018 the SEA commissioned nine virtual pilots to be developed in seven different countries⁵² with the aim to better understand the most important aspects (technical, financial and legal) that would need to be addressed for an Article 6 Pilot to be implemented. Out of the nine pilots, one project that aims at promoting electricity generation from non-conventional renewable energy (NCRE) sources in Chile (see below) was selected for development towards potential implementation. The remaining virtual pilots, including the Nigeria Virtual Pilot that was featured in the previous edition of this study, were not selected due to different reasons, ranging from lack of data or structures for Article 6-based cooperation in host countries, to the absence of prior relationships between Sweden and the host country.

In addition to this, the SEA launched a call for proposals to evaluate proposals for mitigation activities that could be developed through Article 6 cooperation. More than 60 proposals were submitted and they are all currently still at the concept note stage. SEA intends to support up to five activities through this process. As a next step, the SEA will work with the project proponents on addressing design issues and enhancing host country engagement.

Finally, the SEA has also established a cooperation programme with the Global Green Growth Institute (GGGI). It pursues a similar aim as the call for proposals but it allows for the establishment of contacts with host countries by relying on existing in-country structures and networks and by supporting the build-up of institutional capacity and governance frameworks in the identified potential host countries. At present, four mitigation activities that could generate emission reduction units have been selected for further development.⁵³

⁵² Virtual Pilots were developed for Colombia, Chile, Nigeria, Kenya, Mongolia, the Philippines and Indonesia. Summaries and policy briefs on the different pilots can be accessed here.

⁵³ Two activities will be focused on the energy sector in Ethiopia, one will target the waste sector in Nepal, and one will target the manufacturing sector in Cambodia.

Global Green Growth Institute (GGGI). GGGI and SEA to develop four mitigation activities generating ITMOs in energy, waste, and manufacturing. October 2020.

SUMMARY TABLE

Specific sectors and technologies	Energy, waste, electricity generation, energy efficiency
Possible stakeholders and participants	Governments, organisations, private entities
Overall resources available (million \$)	N/A
Form of Article 6 cooperation	Currently piloting Article 6.2 cooperative approaches and instrument neutral activities, with an eye to engaging in Article 6.4 once operational
Relationship with NDCs	Inside scope of the host country's NDC
Volume and price of ITMOs	N/A
Sustainable development benefits	Mapped in all activities; i.e. creating an economic incentive for energy companies to generate electricity from non-conventional renewable energy

EXPERIENCES IN CHILE

PILOT ON ENHANCED PENETRATION OF RENEWABLE ENERGY IN CHILE

KEY FACTS

This virtual pilot aims at accelerating the penetration of renewable energy in the Chilean electricity generation mix while displacing fossil fuels. Two possible options are considered: a) establishing a NCRE crediting threshold for the private sector, enabling the latter to receive carbon credits for emission reductions associated to electricity generation from NCRE above business-as-usual projections; and b) establishing a Renewable Portfolio Standard (RPS) which would set ambitious targets for electricity generation from all renewable energy sources and which would be coupled with new investments on renewable energies.⁵⁴

After having selected the virtual pilot for further development, the SEA will discuss its potential implementation with the Chilean government. However, several reasons contributed to slowing down progress on the discussion, including: (i) the revision of the Chilean NDC targets and models; (ii) the COVID-19 pandemic; and (iii) national policy development in the country. As a result, the pilot has not been finalised yet. This phase is meant to end with the preparation of the design documents and, potentially, the signing of a Memorandum of Understanding (MoU) between the two countries.

⁵⁴ Center for Clean Air Policy (CCAP). Chile Project Idea Note (PIN).

INTENDED FORM OF COOPERATION

The pilot represents a cooperative approach aimed at generating mitigation outcomes that can be internationally transferred under Article 6.2 of the Paris Agreement. Political buy-in from both Chile and Sweden is necessary to lead to the finalisation of the transaction. The Chilean Vice Minister of Energy has already signed a letter of commitment expressing support for the development of the virtual pilot and showing interest to explore its potential for ITMO generation. Some aspects of the final transfer agreement will be subject to negotiation, including price, volume, timeframe to generate ITMOs, purchase commitments and/or options.

If the expected volume of the resulting ITMOs is too large for Sweden to invest in alone, additional buying countries or entities might be considered for engagement with the project. Alternatively, the surplus mitigation outcome could be transferred to the international marketplace.

RELATIONSHIP WITH NDC

The mitigation actions envisaged by the pilot would be inside the scope of Chile's NDC, since they would support the achievement of the unconditional target but they would not result in emission reductions above the conditional target. To be eligible for transfer, emission reductions must be achieved beyond the unconditional target. A corresponding adjustment following the international transfer of the mitigation outcome, would be necessary to avoid double counting.

TRANSACTIONAL SET-UP

The negotiations have not determined yet whether Sweden will obtain all the emission reductions resulting from the mitigation activity or just a share. However, because of the importance and size of the mitigation potential of renewable energies for the power sector, it is likely that Chile would want to retain a portion of the resulting mitigation outcome to meet its own NDC mitigation targets. In this case, the international investment is likely to be reduced proportionally.

ACTIVITIES

Name of activity	Countries	Sector	Start date	Emission reduction potential	Technology
Pilot on Enhanced Penetration of Renewable Energy in Chile	Chile	Electricity generation	N/A	N/A	Methane recovery and flaring, biogas



SWISS PILOT ACTIVITIES

The Government of Switzerland plans to make limited use of Article 6 of the PA to achieve its NDC commitment. In its NDC, the country has defined an emission reduction target to reduce emissions by 50% by 2030 compared to 1990 levels, for which a maximum of 20% of the reductions are to be achieved abroad. The details have been specified by the Swiss CO₂ law that was passed by the Parliament in September 2020 and will come into effect in January 2022 if it survives the referendum called against it. 75% of the reductions are to be achieved domestically.⁵⁵ It is expected that over the years of 2021 to 2030, 35 million t CO₂e of offsets will be bought abroad.⁵⁶

The current Swiss CO₂ law contains mitigation obligations for Swiss importers of fossil motor fuels. Between 2006 and 2012, the motor fuel importers set up a voluntary scheme to be exempt from the CO₂ levy, which was subsequently only applied to heating fuels. They established a levy called Klimarappen (Climate Cent) of CHF 0.015 per litre of imported petrol or diesel. The Climate Cent Foundation (CCF) used CHF 244 million of the revenue total of CHF 718 million to purchase 16.0 million offsets from the Kyoto Mechanisms CDM and JI abroad and to hand these over to the Swiss government.

In 2013, the Swiss government agreed with the CCF to use part of its remaining assets of CHF 100 million – at least CHF 20 million – to finance pilot market mechanism activities with interested countries and the private sector until 2032. These pilot activities also serve to inform the Swiss negotiation position on the Article 6 rulebook. With the pilot activities, the government aims to “show that it is possible to meet the clear international standards demanded by Switzerland regarding sustainable development, environmental integrity and the prevention of double counting of emission reductions”.⁵⁷ The CCF is engaging in bilateral pilot projects (see subsequent fact sheet). In addition, the CCF is engaged in multilateral pilot activities, notably the Carbon Initiative for Development (Ci-Dev), the Pilot

⁵⁵ Swiss Parliament. [Complete revision of the CO₂ law after 2020](#). Last accessed November 2020.

⁵⁶ Climate Cent Foundation. [Pilot activities under the Paris Agreement](#). Last accessed November 2020.

⁵⁷ Climate Cent Foundation. [Agreement between the Swiss Confederation represented by the Federal Department of the Environment, Transport, Energy and Communications \(DETEC\) and the Climate Cent Foundation regarding the modalities governing the use of the Foundation's assets and the support of pilot activities carried out abroad in accordance with the Paris Agreement](#). September 2016.

Auction Facility for Methane and Climate Mitigation (PAF) and the Transformative Carbon Asset Facility (TCAF).⁵⁸

After 2020, the Swiss fossil fuel importers will be subject to more stringent emission reduction targets. At least 15% or 20% (from 2025 onwards) of these emission reductions are to be achieved domestically through the use of sustainable fuels and through domestic offset projects.

The ITMOs bought by CCF and KliK must meet criteria defined by the Swiss CO₂ law with regard to additionality, environmental integrity and avoidance of double counting. To facilitate the purchase of ITMOs, the majority of Swiss fossil fuel importers founded the successor of the CCF, the Foundation for Climate Protection and Carbon Offset KliK (see subsequent fact sheets).

After 2020 and in order to avoid double counting of ITMOs, the KliK Foundation can only use ITMOs from countries with whom the government of Switzerland has entered bilateral agreements. The bilateral agreements will include provisions about the principles and rules for transfer of mitigation outcomes with the objective of avoiding double counting, supporting environmental integrity and promoting sustainable development.⁵⁹

The Swiss government is engaging in talks with interested partner countries. Three years of talks between Switzerland and Peru resulted in the successful adoption of a bilateral agreement in October 2020, where CCF is implementing also the most advanced pilot activity. The provisions of the bilateral agreement foresee that ITMOs must be measured in CO₂e and present real, verified, permanent (with qualifiers) and additional mitigation outcomes achieved after 2021. While the agreement does not oblige any Party to authorise transfers of mitigation outcomes, once authorised, Parties must recognise transfers, report on them and undertake corresponding adjustments. The bilateral agreement furthermore establishes minimum quality criteria for ITMOs to respect environmental integrity and promote sustainable development and outlines processes for authorisation and accounting of transfers. While the bilateral agreements at government level will regulate key principles and accounting of international cooperation, commercial agreements between the seller and buyer of mitigation outcomes will govern the amount and price of ITMOs transferred from specific activities.⁶⁰

⁵⁸ Climate Cent Foundation. Current activities. Last accessed July 2020.

⁵⁹ For more information, see Bundesamt für Umwelt. [Synthesebericht: Volkswirtschaftliche Beurteilung der klimapolitischen Massnahmen nach 2020](#). December 2017; Bundesamt für Umwelt. [Übersicht über Auslandsmassnahmen](#). March 2018; Bundesamt für Umwelt. [Faktenblatt 8: Kompensationspflicht für Hersteller und Importeure fossiler Treibstoffe](#). 4. September 2019.

⁶⁰ Perú Ministerio del Ambiente and Federal Office for the Environment. [Summary of the foreseen cooperation under Article 6 \(Paris Agreement\) between Peru and Switzerland](#). 26 November 2019.

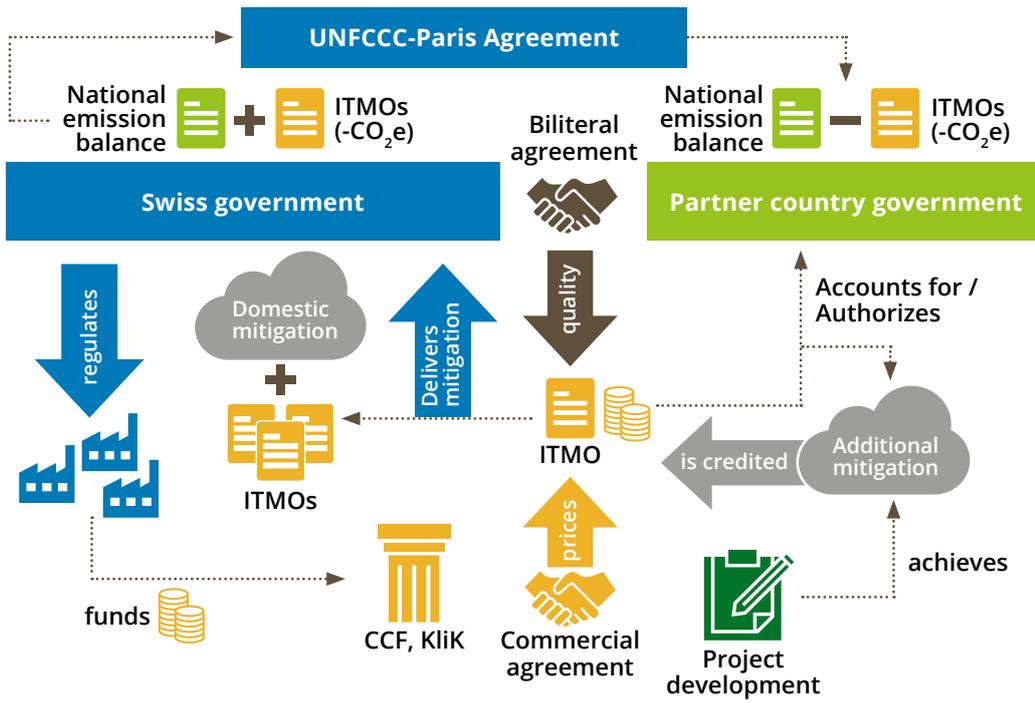


Figure 11: Swiss framework to regulate Article 6 ITMO transfers in the context of the NDC

Source: Authors

THE CLIMATE CENT FOUNDATION

In 2013, the Swiss government mandated the Climate Cent Foundation (CCF) to use part of its remaining assets of CHF 100 million – at least 20 million – to finance Article 6 pilot activities with interested countries and the private sector until 2032.⁶¹ The Government of Switzerland and CCF agree and decide jointly on pilot activities. All resulting certificates will be handed over to the Government of Switzerland at no additional charge.⁶²

SUMMARY TABLE

Specific sectors and technologies	Initial activities: energy efficiency / efficient cook stoves, electric mobility and landfill
Possible stakeholders and participants	Swiss government, private sector companies and host country(ies)
Overall resources available (million \$)	Approx. USD 20 million (CHF 20 million)
Form of Article 6 cooperation	Article 6.2, based on a government-to-government approach with host country and buyer country approval and corresponding adjustments to GHG inventories
Relationship with NDCs	Sectors must be covered in NDC; activities must go beyond NDC targets and BAU levels
Volume and price of ITMOs	N/A. CCF and KliK together a maximum of 35 million
Sustainable development benefits	Contribution to sustainable development is a core requirement in Swiss CO ₂ law

⁶¹ By June 2020, the Climate Cent Foundation has spent CHF 546,800 on pilot activities, according to its annual report. Climate Cent Foundation. 2019/20 Report on the Climate Cent Foundation's Allocation of Resources for the attention of the Federal Department of the Environment, Transport, Energy and Communications (DETEC) in compliance with the agreement dated 19 September 2016. June 2020.

⁶² Climate Cent Foundation. Website. 2020.

KEY FACTS

In December 2016, the CCF announced a call for proposals for potential pilot activities related to landfill gas, efficient cook stoves and grid-connected renewable electricity. A total of 17 Project Idea Notes have been submitted and evaluated by the CCF. Three projects have been retained with a view to potentially develop them into pilot activities, including efficient cook stoves in Peru; electric vehicles fleet in Thailand; and an electricity generation project in the landfill gas sector in Mexico.⁶³ The CCF has no plans to engage in further pilot activities.

INTENDED FORM OF COOPERATION

The pilot activities to be funded by the CCF will be developed as a cooperative approach; and have therefore been presented as Article 6.2 initiatives. The eligibility criteria for the pilot activities have been defined in an agreement between the CCF and the Swiss government.^{64,65} In general, pilot activities must be consistent with the Swiss position on robust accounting and environmental integrity in the UNFCCC negotiations and the project eligibility criteria should serve as a basis of discussion with potential like-minded progressive partners. In the selection of projects, the level of readiness of the host country is taken into account.

TRANSACTIONAL SET-UP

The CCF identified its planned pilot activities according to the eligibility criteria defined. After endorsement of the pilot activity by the Swiss Government and the CCF, based on its developed description document, the formal bilateral talks towards a bilateral agreement are initiated.

The CCF will only negotiate a Mitigation Outcome Purchase Agreement (MOPA) based on a concluded bilateral agreement of the Government of Switzerland with the host country.⁶⁶ The MOPA defines the price per tCO₂e reduced and any other commercial modalities. CCF is planning to complete the contractual negotiations, including the signature of the MOPA for the pilot activities identified and will not be looking for further pilot activities.

⁶³ Climate Cent Foundation. 2018/19 Report on the Climate Cent Foundation's Allocation of Resources for the attention of the Federal Department of the Environment, Transport, Energy and Communications (DETEC) in compliance with the agreement dated 19 September 2016. June 2019.

⁶⁴ Climate Cent Foundation. Agreement between the Swiss Confederation represented by the Federal Department of the Environment, Transport, Energy and Communications (DETEC) and the Climate Cent Foundation regarding the modalities governing the use of the Foundation's assets and the support of pilot activities carried out abroad in accordance with the Paris Agreement. September 2016.

⁶⁵ Federal Office for the Environment. Criteria for piloting enhanced market activities. O352-1563. September 2016.

⁶⁶ Comparable to and sometimes also referred to as an Emission Reduction Purchase Agreement (ERPA).

However, these preparations will probably not be completed before 2020.⁶⁷ After an independent verification of emission reductions, the CCF proceeds to payment upon receipt of the mitigation outcome.⁶⁸ The CCF will hand the purchased units to the Swiss government in 2023 and in 2030.⁶⁹

RELATIONSHIP WITH NDCS

The partner countries (Mexico, Peru and Thailand) of the CCF have submitted a first NDC to the UNFCCC with economy-wide unconditional and conditional targets. All countries mention their intention to use international market mechanisms.

The CCF has agreed with the Swiss government on specific requirements for the pilot activities with respect to the relationship to NDCs, additionality and further safeguards. These criteria are *inter alia*:⁷⁰

- Host Party must have ratified the Paris Agreement before 31 December 2020 and have an NDC that is achieved mainly domestically through own resources.
- Activities developed must:
 - be additional to the activities in the host countries' NDC and the BAU scenario,
 - generate mitigation outcomes that can likely be used towards Switzerland's NDC.
- To avoid double counting, the Swiss government will not account the resources used as international climate finance if credits are used for realisation of its own NDC commitments.
- Host country benefits include that supported activities must contribute to sustainable and low-carbon development and be self-sustaining beyond the duration of the support.

A percentage share of mitigation outcomes to be determined may be attributed to the host country.

In the context of the 'Tuki Wasi' pilot project in Peru, the pursued support programme is complementing the state-led initiative Foncondes (*Fondo de Cooperación para el Desarrollo Social*), which aims to provide low-income households with access to clear energy sources.⁷¹

⁶⁷ Climate Cent Foundation. Bericht 2017/18 über die Verwendung der finanziellen Mittel der Stiftung Klimarappen an das Departement für Umwelt, Verkehr, Energie und Kommunikation (UVEK) gemäß Vereinbarung vom 19. September 2016. June 2018.

⁶⁸ Federal Office for the Environment. Criteria for piloting enhanced market activities. O352-1563. September 2016.

⁶⁹ Climate Cent Foundation. Agreement between the Swiss Confederation represented by the Federal Department of the Environment, Transport, Energy and Communications (DETEC) and the Climate Cent Foundation regarding the modalities governing the use of the Foundation's assets and the support of pilot activities carried out abroad in accordance with the Paris Agreement. September 2016.

⁷⁰ Federal Office for the Environment. Criteria for piloting enhanced market activities. O352-1563. September 2016.

The 'Biover' pilot activity in Mexico demands from landfill owners to commit to transforming the captured landfill gas into electricity within a specified time limit, without that emission reductions from electricity generation are credited. Thereby, the project is beyond the countries' NDC but contributes to the NDC by producing non-fossil electricity.⁷²

ACTIVITIES

Currently, CCF is pursuing three activities in Peru, Mexico and Thailand.⁷³

The 'Tuki Wasi' project in Peru is most advanced and the programme was launched in February 2019.⁷⁴ The programme offers a five-step compensation scheme for the installation of efficient cookstoves. At this stage, two stove manufacturers were selected to install 2200 in-built masonry-ovens. In the trial phase, the NGO 'Ruru Tarpuy' was founded by the company Microsol to carry out calls for proposals, contract manufacturers as well as monitor and report emission reductions. This far, no stoves have been implemented yet. CCF's emphasis will lie on the negotiation's finalisation as the agreement's ratification shall still occur in 2020.

In Mexico, First Climate (Switzerland) AG is developing the pilot activity 'BIOVER'. This support programme aims to incentivise landfill owners to collect and flare landfill gas containing methane. The programme will also support the implementation of Mexico's NDC as it will require beneficiaries to transform landfill gas in electricity, while not crediting the emission reductions from this activity. First Climate drafted a Pilot Activity Design Document (PA-DD), that is currently with the Mexican government for comments. On the basis of the PA-DD, the governments of Mexico and Switzerland will decide upon an authorisation of the activity under a bilateral agreement, for which official negotiations have been established in February 2020. Progress of negotiations has been stalled by the outbreak of COVID-19 though.

The South Pole Group submitted a PA-DD for a support programme to increase the number of private electric vehicles in Thailand – called 'SHIFT' – in May 2020. CCF's Foundation Board has formulated a number of questions based on the completed PA-DD that are currently processed by the project developer. In June 2020, the Swiss Embassy in Bangkok has taken up formal talks with the Thai government on the opening of negotiations for a bilateral agreement based on the Peruvian model.

⁷¹ Climate Cent Foundation. 2019/20 Report on the Climate Cent Foundation's Allocation of Resources for the attention of the Federal Department of the Environment, Transport, Energy and Communications (DETEC) in compliance with the agreement dated 19 September 2016. June 2020.

⁷² See above.

⁷³ See above.

⁷⁴ Accessible via: tukiwasi.org

Name of activity	Countries	Sector	Start date	Emission reduction potential	Technology
Name of activity	Country	Sector	Start date	Emission reduction potential	Technology
Tuki Wasi	Peru	Household sector	February 2019	n/a	Efficient cookers (built-in masonry ovens)
BIOVER	Mexico	Waste	Not yet started, in negotiation phase	n/a	Collection and flaring of landfill gas containing methane
SHIFT	Thailand	Transport	Project design phase completed	n/a	Installation of charging stations and incentives to increase number of private electric vehicles



THE KliK FOUNDATION

The Swiss CO₂ law foresees the obligation for fossil motor fuel importers whose fuel sales exceed a volume equivalent to more than 1000 t CO₂e/ year to compensate the related emissions domestically and abroad.⁷⁵ To fulfil this legal obligation, the KliK Foundation for Climate Protection and Carbon Offset (Stiftung Klimaschutz und CO₂-Kompensation) was established as a sector-wide carbon credit grouping for fossil motor fuels, as the successor of the Climate Cent Foundation (see factsheet on the CCF). Under the current law the Foundation supports domestic projects that generate carbon credits based on a Swiss carbon standard.⁷⁶ The CO₂ law approved by parliament in September 2020 allows for the use of international carbon credits for 25% of the Swiss NDC target.⁷⁷ The KliK Foundation is setting up the procedures for the purchase of ITMOs from 2021 onwards in anticipation of a forthcoming regulation.

SUMMARY TABLE

Specific sectors and technologies	Exclusion of biological carbon sequestration, nuclear energy and fossil fuels (efficiency), all other sectors are eligible.
Possible stakeholders and participants	Government of Switzerland (GoS), private sector companies and partner countries.
Overall resources available (million \$)	Cost covering, USD 550 – 1100 million (CHF 500 - 1000 million) over 10 years expected.
Form of Article 6 cooperation	Article 6.2, based on a government-to-government approach with host country and buyer country approval and corresponding adjustments to GHG inventories.
Relationship with NDCs	Activities must be in sectors covered by NDC and be additional to the unconditional NDC and to a BAU emissions scenario.
Volume and price of ITMOs	Purchase of credits through KliK and CCF amounting to 35 million tCO ₂ e from 2021 to 2030 according to the revised CO ₂ law (maximum 54 million according to NDC). Price is unknown.
Sustainable development benefits	Activities that contribute to the Sustainable Development Goals and foster low-carbon development are preferred; Promotion of sustainable development is a core requirement in Swiss CO ₂ law

⁷⁵ De minimis threshold of 1000 t. BAFU. [Totalrevision des CO₂-Gesetzes](#). November 2018.

⁷⁶ KliK. [Homepage](#). Last accessed November 2020.

⁷⁷ Climate Cent Foundation. [Agreement between the Swiss Confederation represented by the Federal Department of the Environment, Transport, Energy and Communications \(DETEC\) and the Climate Cent Foundation regarding the modalities governing the use of the Foundation's assets and the support of pilot activities carried out abroad in accordance with the Paris Agreement](#). September 2016.

KEY FACTS

At the time of writing, the Foundation has registered 93 private and governmental partner organisations that are eligible to submit project propositions in calls for proposals. Pre-selected activities will be developed into full project proposals, with financial support from the KliK Foundation. Before ITMOs can be purchased by KliK, a bilateral agreement will be signed between the Swiss Government and the respective host country. In October 2020, the Foundation has signed its first bilateral agreement with the Peruvian government.⁷⁸

INTENDED FORM OF COOPERATION

Private sector partners, including consultants, investors and project developers, have to apply online via the foundation's website to be accepted as a partner organisation.⁷⁹

- In calls for proposals, partner organisations submit Mitigation Activity Idea Notes (MAIN), accompanied by a Letter of Intent (LoI) from the host government to enter a bilateral agreement with the Swiss government.
- Pre-selected activities are awarded a Letter of Support from KliK and are asked to request a respective LoI from Switzerland. Upon issuance of a Swiss LoI, the foundation will then financially support the preparation of a detailed Mitigation Activity Description Document (MADD).
- The preparation of the MADD is accompanied by the conclusion of a binding bilateral agreement between the host country government and the Swiss Government.
- Upon conclusion of the bilateral agreement, a binding Mitigation Outcome Purchase Agreement is signed.

In the selection process, the KliK Foundation will target new priority activities, but will also evaluate existing activities under carbon standards (e.g. CDM activities) for generating emission reductions⁸⁰. Further eligibility criteria will be developed to meet the requirements of Article 6 of the PA and activities will need to obtain the approval of the host and investor country.⁸¹ While in principle there are no restrictions regarding countries and technologies, activities involving biological carbon sequestration, such as Reduce Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+) or Land Use, Land Use Change and Forestry (LULUCF), are

⁷⁸ FOEN. [Agreement under Article 6 of the Paris Agreement](#). October 2020.

⁷⁹ KliK. [Application by private organisations](#). Last accessed November 2020; KliK. [Call for Proposals](#). Last accessed November 2020; KliK. [Call for Proposals Cover Letter](#). 2019; KliK. [Procurement process](#). Last accessed November 2020.

⁸⁰ KliK. [Call for proposals \(CfP\) clarification note](#). 2019. Ben Garside. [Carbon Forward 2018: Switzerland lines up first Paris-era carbon trades](#). Carbon Pulse. October 2018.

⁸¹ KliK. [Procurement process](#). Last accessed November 2020.

currently excluded as their eligibility for Article 6 has not yet been clarified in negotiations. Also excluded from the first and second calls were multi-country activities and activities that include nuclear power and/or lock-in of fossil fuels.

TRANSACTIONAL SET-UP

Upon the signing of a bilateral agreement between the partner country and the Swiss government, the KliK Foundation can sign purchase agreements. Until the obligations of the Foundation are set out in the revised version of the Swiss CO₂ law and the accompanying Swiss CO₂ Ordinance, the KliK Foundation will build its international portfolio on a provisional basis without entering into any financial commitments.⁸² Due to the referendum having been called against the law approved by Parliament, the revised CO₂ law is likely to come into force only after 1.1.2022.⁸³

RELATIONSHIP WITH NDCS

The final criteria for the safeguards and eligibility principles are based on the revised Swiss CO₂ law and framed in the respective bilateral agreements. The agreement between Peru and Switzerland establishes for example minimum standards in terms of environmental integrity and the promotion of sustainable development. Regarding environmental integrity, it is among other things specified that mitigation activities shall not lead to an increase in global emissions, are in line with the low emission development strategy of each Party and foster the transition to low emission development. The relationship of the ITMOs to be purchased and the NDC of the host country is clarified in close consultation with relevant agencies of the partner countries. In the case of Peru, it was agreed upon the application of corresponding adjustments in its reporting for the target year 2030. In the first and second calls for proposals for private organisations, only activities in sectors covered by the host countries' NDC were eligible, and they had to be additional to the NDC and to a BAU emissions scenario.

⁸² KliK. [Programme](#). Last accessed November 2020.

⁸³ KliK. [Swiss CO₂ Act](#). Last accessed November 2020.

⁸⁴ FOEN. [Agreement under Article 6 of the Paris Agreement](#). October 2020.

⁸⁵ See above.

⁸⁶ KliK. [Registration of government agencies](#). Last accessed July 2020.

⁸⁷ FOEN. [Agreement under Article 6 of the Paris Agreement](#). October 2020.

⁸⁸ KliK. Call for proposals cover letter ([April 2019](#) and [November 2019](#)). 2019.

ACTIVITIES

Name of activity	Countries	Sector	Start date	Emission reduction potential	Technology
Green ITMO Credit Line for the Peruvian SME Industry	Peru	Various	2021	n.a.	Multiple technologies possible
Dissemination of Domestic Biogas Digesters in Senegal's Rural and Peri-Urban Areas	Senegal	Household energy	2021	n.a.	Biogas digesters
Sustainable Waste Management Program	Senegal	Waste	2021	n.a.	Waste recycling, composting of organic waste, landfill gas collection and usage for electricity generation
Sustainable Manure Treatment (SMT) Program	Mexico	Agriculture (livestock)	2022	n.a.	Anaerobic biodigesters
Organic Waste to Energy Program	Morocco	Waste	2022	n.a.	Anaerobic biodigesters and biogas-based combined heat and power generation
National Clean Energy Access Programme	Ghana	Energy	2022	n.a.	Various renewable energy technologies (e.g. solar PVs, solar lanterns, solar home systems and improved cooking systems)
Energy Efficiency Fund	Morocco	Industry and tertiary	n.a.	n.a.	Various energy efficiency technologies



WORLD BANK: THE STANDARDIZED CREDITING FRAMEWORK

The Standardized Crediting Framework (SCF) for energy access provides a simplified crediting approach that builds on the Clean Development Mechanism⁸⁹. Innovated by the World Bank’s Carbon Initiative for Development (Ci-Dev), the SCF was developed in anticipation of the future policy landscape under the Paris Agreement and more specifically, transitioning projects and Programme of Activities (PoAs) under the CDM to Article 6 cooperative approaches. SCF pilots have been finalised in Senegal and Rwanda, providing significant time and cost savings compared to traditional CDM processes. Ci-Dev is now working on a full roll-out of the SCF in all Ci-Dev countries.

SUMMARY TABLE

Specific sectors and technologies	No specific requirements. Current pilots in rural electrification (technologies: hybrid solar PV-diesel mini-grid electrification, individual solar PV systems and solar lanterns) and improved cookstoves.
Possible stakeholders and participants	Parties, project proponents (public and private entities), and rural communities.
Form of Article 6 cooperation	The SCF is instrument neutral, meaning it could fall under Article 6.2 and Article 6.4
Relationship to NDC	The extent to which emission reductions units from the SCF Pilot project will contribute to host countries’ NDC target will become clearer after the pilot phase and once the crediting process starts, with the understanding that NDC commitments may need to be incorporated into the baseline for crediting.
Volume and price of ITMOs	Not applicable
Sustainable development benefits	Supported projects should contribute to sustainable development in the host country.

⁸⁹ See the [Standardized Crediting Framework Homepage](#) for more information.

KEY FACTS

The SCF is an initiative that supports the transition of the Ci-Dev CDM project pipeline toward the new governing framework of the Paris Agreement, while offering valuable insights and lessons learned to the ongoing Article 6 negotiations. Aiming to advance beyond the current CDM PoA model, the SCF establishes a host country governed crediting approach, through which the scaling-up and replication of project activities within defined sectors is simplified.⁹⁰ Host country governments and institutions can best establish the link between crediting and NDC implementation as well as define crediting modalities that are most fitting with national and sectoral circumstances. Therefore, they are given the role of managing and implementing the SCF.

Compared to the CDM, the SCF provides a more simplified project cycle, resulting in lower transaction costs. Building on CDM methodologies, the SCF uses positive lists of technologies and standardised emission factors based on national expertise, cultivating greater host country ownership. Moreover, one of the main simplifications includes the 'listing' process (i.e. similar to registration under the CDM), for which templates and clear guidance are provided. In addition, by working together with existing national institutions with expertise in climate change, policies and projects, the SCF minimises the administrative and financial burden on national governments while maintaining transparency.

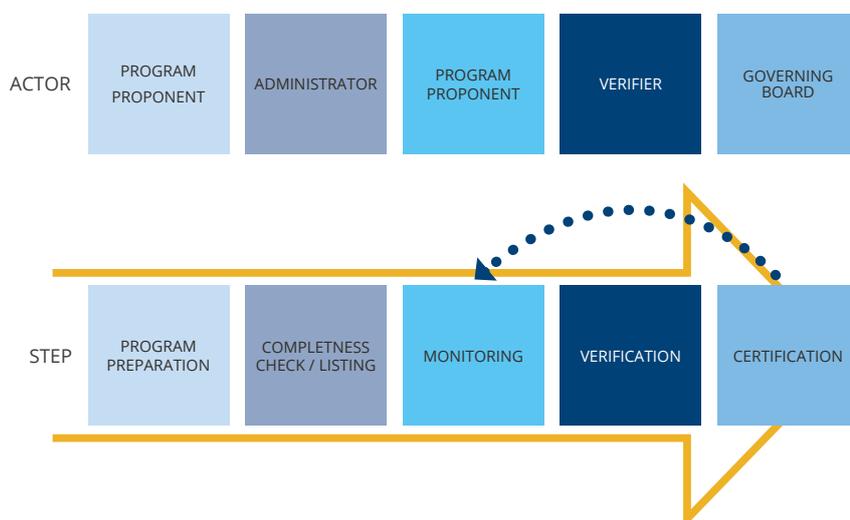


Figure XX: SCF project cycle

Source: Ci-Dev. *Piloting a Standardized Crediting Framework for Energy Access Programmes, Senegal Pilot, Lessons Learned Note*. 2019.

The project cycle introduced under the SCF pilots begins with a simplified programme document and eventually ends with certification, whereby the validation and verification steps are combined. For the SCF to become operational under Article 6, an issuance step would also be needed.

⁹⁰ Carbon Limits AS, Climate Focus, Ci-Dev. A Standardized Crediting Framework for scaling up Energy Access Programs. 2016

After the finalisation of two pilot projects in Senegal and Rwanda, Ci-Dev is now planning to fully roll out the SCF in all Ci-Dev countries over the next two years and is currently engaged in consultations with donors and host country governments. Three key aspects that will be considered during the discussions are corresponding adjustments, baselines, and the relationship with the NDCs of host countries. However, the roll-out will not happen in parallel in all countries due to time and data constraints.

EXPERIENCES IN SENEGAL AND RWANDA

The SCF was piloted in Senegal and Rwanda to test the potential of the crediting approach and gain lessons for future implementation. Both pilots have now been finalised.

In Senegal, the SCF supported the rural electrification programme implemented by the Senegalese Rural Electrification Agency - Agence Sénégalaise D'Electrification Rural (ASER). The technologies covered in the pilot include, inter alia, grid electrification, hybrid solar PV-diesel mini-grid electrification, individual solar PV systems and solar lanterns. The key stakeholders for the pilot were the Senegalese Government, the National Climate Change Committee, and ASER.

In Rwanda, the SCF built on the Inyenyeri improved cookstove program, with key stakeholders including the Rwanda Environment Management Authority (REMA), the Ministry of Environment, and Inyenyeri (a private sector project developer).

While the Ci-Dev PoAs continued to operate under the CDM in both host countries, the SCF operated as a simulation in parallel to the programme's CDM validation and registration to enable a direct comparison between the two approaches, including their costs and timelines, institutional set-up, and stakeholder engagement. Now that the piloting phase has come to an end, Senegal, Rwanda and Ci-Dev will evaluate the lessons learned and may decide to shift the basis of their contractual arrangements from the CDM to the SCF. The SCF may in this case enable the transaction of ITMOs.

The Senegalese SCF Pilot already provides lessons to inform this process.⁹¹ Overall, significant time and costs savings can already be observed, including for example, the SCF programme preparation in Senegal requiring just under 3 months, whereas programme preparation took more than 5 years under the CDM. As well, the registration and listing phase for the Senegalese SCF Pilot entailed only one month, compared to seven months under the CDM. Similar time and cost savings were achieved by the Rwandan Pilot, too, where cost savings amounted to almost 50% more than the entire cost for setting up the pilot.⁹²



View of ville with the electric installations, region of Saint Louis, Senegal. 31.01.2019.

Photo by: Vincent Tremeau for the World Bank.



Lights in houses at night time, region of Saint Louis, Senegal. 31.01.2019.

Photo by: Vincent Tremeau for the World Bank.

⁹¹ Diouf, Madeleine, Ousmane Fall Sarr, Harikumar Gadde. Operationalizing Article 6: A Standardized Crediting Framework for the Post-2020 World. 2018

⁹² Spalding-Fecher, Randall, Greiner, Sandra, Krämer, Nicole, Mongendre, Leo, Ntazinda, Jean. [Piloting a Standardized Crediting Framework for Scaling Up Energy Access Programs. Lessons Learned Note: Rwanda Pilot.](#) 2020

Other important points that will need to be considered in a post-2020 crediting approach are how much existing Emission Reduction Purchase Agreements (ERPAs) need to change and what kind of authorisation letters are needed, as countries need more time to understand and adapt to the new system.

INTENDED FORM OF COOPERATION

The SCF is intended as instrument neutral, which means that its form of cooperation is flexible. The concept itself could fit under both Article 6.2 cooperative approaches and/or the Article 6.4 market mechanism. Whereas under Article 6.2 partnering countries can decide on an approach consistent with emerging Article 6 guidance and make use of SCF projects and programmes, under Article 6.4, the Supervisory Body would need to consider and approve the SCF crediting approach as part of the crediting mechanism guidelines. The SCF approach could also function through results-based climate finance.

Therefore, should the SCF become internationally recognised as a transition tool and should its pilot activities meet the emerging guidance and requirements under Article 6, the rural electrification programme in Senegal and the cookstove programme in Rwanda could transition to either Article 6.2 or Article 6.4.

TRANSACTION SET-UP

The SCF is currently at a pilot stage and does not involve the international transfer of mitigation outcomes. It relies instead on the continuation of existing ERPAs that Ci-Dev has in place with the pilot activities under the CDM. While ERPAs extend into the post-2020 period and pilot activities are expected to continue their monitoring and reporting obligations as under the CDM, it remains to be decided whether the SCF partner countries will authorise the transfer of ITMOs or whether emission reductions will simply be paid for through results-based climate finance.

RELATIONSHIP WITH NDCS

While the SCF does not come with a specific allocation of emission reductions between host Parties and the acquiring Party, it paves the way for the host country to assess such transactions and creates an institutional framework for doing so at national level. The extent to which emission reductions units from the SCF pilot projects in Senegal and Rwanda will contribute to their NDC targets will become clearer after the pilot phase and once the crediting process can start. Similarly, once Article 6 is operational, the governments will have to decide what volume of SCF generated emission reductions will be transferred internationally and how much will be

dedicated to reaching the country's own NDC targets. The principle would be that transferred emission reductions should come from mitigation activities that are beyond the country's unconditional NDC commitments.



WORLD BANK: THE TRANSFORMATIVE CARBON ASSET FACILITY

The Transformative Carbon Asset Facility (TCAF) is a trust fund of the World Bank piloting innovative CO₂ crediting and quantification mechanisms.⁹³ The initiative has been developed in partnership with several contributing countries to pilot approaches to increase developing countries' NDC ambition, specifically through enabling them to generate and sell carbon credits from enhanced climate action. TCAF aims to help countries in implementing upscaled crediting options and mobilises international climate finance. The fund promotes the use of conservative baselines and stringent monitoring and accounting of the performance of the selected sectoral or policy interventions to ensure environmental integrity.⁹⁴

SUMMARY TABLE

Specific sectors and technologies	Any sector linked to the mitigation goals of the host country's NDC (excluding forestry and fossil fuel related activities).
Possible stakeholders and participants	World Bank; Donor countries: Canada, Germany, Norway, Sweden, Switzerland, and the United Kingdom; Recipients of funding and support: Developing countries.
Overall resources available (million \$)	USD 212 million
Form of Article 6 cooperation	The pilot has been designed as instrument-neutral: recognition of mitigation outcomes could happen under Article 6.2 or Article 6.4
Relationship with NDCs	Contribution to achieving the host country's NDC. Baselines are derived from unconditional elements of NDCs.
Volume and price of ITMOs	Total volume of emission reductions targeted for purchase by TCAF is around five million tCO ₂ e. Average size of the operations is USD 30-50 million in carbon payments; no specific information on the price per emission reduction unit is available.
Sustainable development benefits	TCAF operations will follow the World Bank's Environmental and Social Framework (ESF) and contribute to the UN Sustainable Development Goals. Apart from this, sustainable development forms part of the theory of change for each TCAF programme by building on sector-specific indicators.

⁹³ Climate Cent Foundation. *Transformative Carbon Asset Facility: About*. 2020

⁹⁴ Transformative Carbon Asset Facility (TCAF). *About TCAF*. 2020.

KEY FACTS

TCAF aims to assist countries with implementing their NDCs using policy-based and/or sectoral mitigation measures. The main objectives under the initiative are:

- to develop innovative carbon accounting methodologies to quantify emission reductions achieved by policies as well as economy/sector-wide operations;
- to create favourable conditions for private sector investment while informing the development of standards and agreements for future carbon crediting instruments and transfer of mitigation assets;
- to explore accounting for emission reduction credits from various carbon pricing schemes, allowing for flexibility in market-based climate mitigation approaches and for countries to implement more ambitious carbon pricing instruments and policies;
- to generate carbon assets that have strong environmental integrity and a high likelihood of being eligible for use against NDC targets, using conservative baselines and stringent monitoring and accounting practices;
- to purchase a portion of the carbon assets (mitigation outcomes) from the underlying projects, programmes and policies, while the remaining part will be allocated to the host country;
- to inform the international process.

The key stakeholders are the World Bank, donor countries and the host countries. The World Bank has mobilised approximately USD 212 million with funding from Canada (CAD 3 million), Germany (USD 2 million), Norway (USD 80 million), Sweden (USD 25 million), Switzerland (USD 25 million) and the United Kingdom (GBP 60 million). Developing countries utilise the fund to implement policies and/or sectoral mitigation mechanisms.

Donor countries set the priorities for the operational work programme and provide guidance, including on portfolio and operation selection criteria and the selection of independent third-party auditors in cases where there is no international scheme that could certify the carbon credits⁹⁵. Donor countries approve the Facility's upcoming work programme and budget on an annual basis. A programme idea is only formally included into the Facility's pipeline once the contributors approved the Programme Information Note (PIN). In the PIN, the implementing entity needs to outline how the six guiding principles – transformational impact, sustainability, scale-up financing, sound implementation arrangements, learning and innovation, and solid crediting building blocks including crediting infrastructure and regulation – are met. Upon further preparation of studies, plans and the Programme Design Document, the Facility Board needs to consent

⁹⁵ Swiss Confederation SECO. Transformative Carbon Asset Facility "A long-term predictable price on carbon is recognised as a necessary element in spurring climate change mitigation." March 2018.

to negotiations of commercial terms and subsequently provide its final approval of the Emission Reduction Purchase Agreement (ERPA).⁹⁶

Each TCAF operation is based on a theory of change that includes among other things indicators for transformational change and sustainable development that are subject to MRV. Transformational change towards a decarbonised economy constitutes both, a selection indicator and performance parameter. Four criteria are proposed by TCAF to assess transformational change: large emissions reduction volumes, sustainability (three dimensions: technology, policy, and financing), leverage in the form of increased national ambition and additional funds, and contribution to the implementation of domestic carbon pricing policies. Regarding sustainable development, next to a safeguarding approach that excludes any negative and unwanted impacts, the promoted programmes shall also address sector-specific sustainable development indicators that are currently under development.⁹⁷

TCAF operations should also demonstrate transparently that they enable the host country to increase its mitigation ambition or to enhance its implementation of mitigation actions and policies beyond what it would achieve on its own.⁹⁸

TCAF will consider a two-layered approach to additionality using the logic of carbon markets and results-based climate finance. The first one is referring to the systematic assessment/determination of the crediting threshold ('TCAF baseline') that should be situated below the business-as-usual baseline. In doing so, TCAF is looking to increase the standards of safeguarding the environmental integrity of carbon markets. In terms of the provision of results-based climate finance, the initiative is developing a methodology to ensure that the volume of emission reductions attributed to TCAF is proportional to the "grant equivalent" support provided to enable the activity.⁹⁹ Emission reductions will thus only be purchased in case the emission reductions go beyond host countries' NDC targets and mitigation efforts funded by international climate finance.

The methodologies and MRV systems are to be developed in a bottom-up process for each programme, while only high-level guidance is provided by TCAF 'Core Parameters'. TCAF's MRV approach will be aligned (accounting methodology, computer systems, among others) with host countries' national MRV systems. On this basis, TCAF can support the strengthening of MRV capacities on the national level. Sector-level MRV can make use of existing MRV methodologies developed under the KP flexible mechanisms (CDM and Joint Implementation), where appropriate and relevant.

⁹⁶ Transformative Carbon Asset Facility (TCAF). [Programs](#). 2020.

⁹⁷ World Bank. [Core parameters for TCAF operations](#). July 2018.

⁹⁸ See above..

⁹⁹ See above.

INTENDED FORM OF COOPERATION

While TCAF's aim is to purchase Verified Emission Reductions that would be recognised under Article 6, its intended form of cooperation is yet to be defined and could potentially fall under either Article 6.2 or 6.4.¹⁰⁰

TRANSACTIONAL SET-UP

TCAF will test various methods to transfer mitigation outcomes between Parties and provide stringent accounting and transparency to ensure the environmental integrity of the assets. The aim is to set parameters for each individual operation, including: the length of the purchasing period (i.e. five to seven years), the share of emission reductions achieved to be purchased by TCAF (crediting threshold), and pricing. The share of emission reductions purchased by TCAF varies and is specific to each operation, considering that TCAF operations aim to purchase volumes over the full crediting period of approximately five million tCO₂e.¹⁰¹

RELATIONSHIP WITH NDCS

TCAF will have to be linked directly to the host country's NDC as well as related policies and priorities. This ensures that the TCAF is contributing to the achievement of the mitigation goals and increasing NDC ambition. TCAF considers several main criteria for its portfolio selection, including that operations:¹⁰²

1. Are coherent with national mitigation aims, by being consistent with or derived from the country's NDC and aligned with domestic policies and priorities;
2. Increase domestic ambition;
3. Achieve a lasting impact, and can become self-sustaining after the Facility's support ends;
4. Have demonstrable sustainable development benefits and maintain environmental and social safeguard standards;
5. Uphold environmental integrity of emissions reductions, are consistent with the evolving framework and principles of UNFCCC rules at the time of implementation or ERPA signature;
6. Avoid distortions to the sector's international competitiveness and adverse incentives on the sector's GHG emission; and
7. Apply a robust baseline.

Crediting periods of TCAF operations lie within the NDC submission to NDC target period time range. An ERPA negotiated under TCAF can either cover the entire crediting period or parts of it. For each activity supported by

¹⁰⁰ World Bank. [Core parameters for TCAF operations](#). July 2018.

¹⁰¹ See above.

¹⁰² See above.

TCAF, the respective BAU emission trajectory will be compared with the unconditional target of a country's NDC emission trajectory. Whenever the target emission trajectory is below the BAU, the target emission trajectory will be the baseline, otherwise the BAU emission trajectory will be used.¹⁰³ The actual amount of emission reductions to be credited does, however, not only depend on baseline setting but also on the applied crediting parameters that reflect TCAF's strategic objectives. The diversity of NDCs of TCAF host countries means it requires a flexible approach and is tailored for each TCAF operation. Usually the operation coincides with an unconditional NDC target area, forms part of an NDC economy-wide target or falls outside the NDC target area by addressing a not considered aspect. TCAF recognises the importance of avoiding double counting, and is in the process of deciding how corresponding adjustments will be done in the TCAF context.

ACTIVITIES

TCAF intends to support four to six countries and is engaged with several countries to explore potential engagement opportunities.

¹⁰³ World Bank. [Core parameters for TCAF operations](#). July 2018.



ANNEX II: FACTSHEETS ON INITIATIVES TO BE GOVERNED BY ARTICLE 6 RULES

Global
LINKING EMISSIONS
TRADING SCHEMES

LINKING EMISSIONS TRADING SCHEMES¹⁰⁴

An Emissions Trading Scheme (ETS) is a market instrument where a regulator caps the volume of emissions that entities covered by the scheme are allowed to emit in each trading period, thereby incentivising emission reductions. Entities may buy emission allowances from other covered entities who are able to reduce emissions at costs below the allowance price. Conversely, they are allowed to sell unused allowances. There are now many different ETSs operating worldwide, including regional, national and subnational trading schemes. Existing and future ETSs can be linked to create a larger market size and potentially enhance liquidity, bolster gains from trading and lower the price of allowances as well as the overall programme cost. Linking ETSs between jurisdictions is a form of voluntary cooperation that can align with Article 6.2 cooperation under the Paris Agreement, because it is designed to make mitigation outcomes flow across borders as they are traded between entities covered under both schemes. Current ETS linking examples include the EU-Swiss ETS Linking, the EU-Norway-Iceland ETS linking as well as the California-Quebec ETS linking.

SUMMARY TABLE

Specific sectors and technologies	Coverage by existing ETSs span over a range of sectors and emission sources (often including energy and industry, and sometimes also covering agriculture and transport)
Possible stakeholders and participants	Private entities covered by the ETS and other entities allowed to trade on allowances.
Overall resources available (million \$)	N/A
Form of Article 6 cooperation	Needs consistency with Article 6.2 guidance in case of linking and/or cross boarder trading of allowances.
Relationship with NDCs	Most ETSs include sectors that are covered by the NDC and will thus require a process to avoid double claiming in the event of international trade or linkages
Volume and price of ITMOs	Not applicable. Varies depending on supply and demand dynamics, as well as the type of linkage
Sustainable development benefits	Focused largely on allowance trading between companies. No specific analysis of co-benefits through the use of new and more climate friendly technologies.

¹⁰⁴ This factsheet was updated based on publicly available information. Stakeholders were not available for interviews at this time.

THE EU-SWISS ETS LINKING

The European Union and Switzerland have had operational – but separate – ETSs since 2005 and 2008, respectively. After a an almost 10-year period, Switzerland and the EU concluded their negotiations to link the two systems during COP25 in Madrid in 2019. The linkage entered into force January 1, 2020, as of which date allowances from both the EU and Swiss systems can be used for compliance compensation.¹⁰⁵ The Swiss ETS is the first system to be linked to the EU ETS.

From the Swiss perspective, the linkage considerably expands their carbon market by adding approximately 11,000 installations covered by the EU ETS to the 50 companies covered by the Swiss ETS. As such, linking is expected to lead to cost efficiency and increased market liquidity, and to contribute to an even playing field that reduces carbon leakage.¹⁰⁶ Moreover, Switzerland has stated that access to the EU market is expected to give Swiss companies greater flexibility in meeting their CO₂ targets.¹⁰⁷

For the EU, which currently operates the largest ETS in the world, expanding its market through linkage is considered a political signal towards its commitment to achieving its PA objectives, and a way to promote global leadership on carbon pricing policies.¹⁰⁸ To ensure compatibility between the EU and Swiss ETS, a number of design elements of the Swiss ETS have been revisited. For example, the scope of the Swiss ETS was expanded to include the aviation and power sector. Similarly, the rules on the use of offsets have been aligned with the EU offsetting rules. In addition, the EU-Swiss Linking Agreement establishes a Joint Committee which is to ensure proper implementation of the Linking Agreement.¹⁰⁹ The EU and Switzerland will, however, continue to run separate auctions.

INTENDED FORM OF COOPERATION

The international transfer of mitigation outcomes through linkage requires the EU and Switzerland to consider how this is accounted for towards their respective NDCs. Accounting will need to ensure that the emissions allowances are reported properly at the national level, and that they are counted towards only one NDC target. The EU-Swiss Linking Agreement sets out that both Switzerland and the EU will account for the flow of allowances “in accordance with UNFCCC approved principles and rules for accounting”

¹⁰⁵ European Commission. [Agreement on linking the emissions trading systems of the EU and Switzerland](#). December 2019.

¹⁰⁶ Santikarn, M., Li, L., La Hoz Theuer, S., Haug, C. [A Guide to Linking Emissions Trading Systems](#). ICAP: Berlin. 2018.

¹⁰⁷ Federal Office for the Environment (FOEN) [Linking the Swiss and EU emissions trading schemes](#). 2018.

¹⁰⁸ European Commission. [EU and Switzerland sign agreement to link emissions trading systems](#). 2017.

¹⁰⁹ [Agreement between the European Union and the Swiss Confederation on the linking of their greenhouse gas emissions trading systems](#). Official Journal of the European Union. L. 322/3. 7 December 2017. Article 13

once these enter into force.¹¹⁰ As such, accounting is set out to be consistent with the Article 6.2 guidance. The mechanics of how to do this will be determined at a later stage and added to the Linking Agreement as an Annex.

EU-NORWAY-ICELAND ETS LINKING

The Norwegian Greenhouse Gas Emissions Trading Act (GGETA) describes the country's ETS which was launched on January 1, 2005. The Norwegian ETS was initially planned to be compatible with the EU ETS and share similar features. Like the EU ETS, the Norwegian ETS is split into three phases: Phase I (2005-07), Phase II (2008-12), and Phase III (2013-20). To ensure compatibility with the EU ETS during the Kyoto commitment period (Phase II, 2008-12), programme features of the Norwegian ETS were revised in June 2007 and February 2009 to be in line with Directive 2003/87/EC.

In October 2007, the European Commission announced the linkage of EU ETS with Norway, Iceland and Liechtenstein through the assimilation of the EU ETS Directive (Directive 2003/87/EC as amended) into the European Economic Area (EEA) agreement. The EU ETS and the Norwegian ETS linked at the beginning of Phase II, and by the beginning of Phase III they were fully harmonised.

Norway, along with Iceland and Liechtenstein are part of the EU ETS and thus possess a share of allowances to be auctioned. Rather than organising separate auctions, the trio chose to auction their allowances along with those of the 25 Member States taking part in the common auction platform. However, they were unable to auction their allowances until the end of 2018 because the EEA Agreement had to be revised to grant them participation in the Joint Procurement Agreement for the common auction platform.

The EU, Norway and Iceland agreed at the end of 2019, to deepen and extend their cooperation to reduce emissions.¹¹¹ The decision made by the EEA Joint Committee will enable the EU, Norway and Iceland to continue their collaborative participation in the EU ETS and to align their actions from various sectors not captured in the EU ETS, such as agriculture, transport, waste and buildings, as well as increased benefits from land use and forestry.¹¹² The decision provides a reconfirmation and political commitment from EU, Norway and Iceland to reach their Paris Agreement goals.

INTENDED FORM OF COOPERATION

¹¹⁰ [Agreement between the European Union and the Swiss Confederation on the linking of their greenhouse gas emissions trading systems](#). Official Journal of the European Union. L. 322/3. 7 December 2017. Article 4.

¹¹¹ European Commission. The European Union, Iceland and Norway agree to deepen their cooperation in climate action. 2019.

¹¹² Decision of the EEA Joint Committee, No 269/2019. 25 October 2019.

In its NDC, Norway explicitly states that it plans to use international market-based mechanisms including the EU ETS to fulfil its NDC commitments. In case their commitments are fulfilled collectively with the EU and its Member States, the EU ETS ensures no double counting of emissions. In case there is no agreement on collective action with the EU, Norway will fulfil its NDC commitments individually, seeking “an agreement of accounting for Norway’s participation in the EU ETS”.¹¹³

Moreover, Iceland outlines in its NDC that it will continue to take part in the EU ETS after 2020, which regulates around 40% of Iceland’s emissions. Similarly, to Norway, in the case that there is no agreement reached, Iceland will fulfill its NDC in another manner – although its participation in the EU ETS complicates the establishment of an economy-wide target as credits under the EU ETS are traded freely in a common market.¹¹⁴

With the decision to continue their cooperation, the next steps will be for Iceland to gain approval by its national parliament and for the EU, Norway and Iceland to enforce the rules. This will also entail robust monitoring and reporting.¹¹⁵

CALIFORNIA-QUEBEC ETS LINKING

California launched its ETS in 2013 and became North America’s first multi-sector cap-and-trade program, with Quebec introducing its ETS in 2012. In early 2014, Quebec linked its system with California creating the most comprehensive carbon trading system in North America. California and Quebec’s systems operate under the guidelines of the Western Climate Initiative (WCI). The WCI is a voluntary intergovernmental subnational organization that offers its members administrative and technical support for the implementation of cap-and-trade systems.

The California-Quebec ETS also benefitted from California’s sound reputation in policy leadership. However, ex-post assessments of the cost effectiveness effect due to linking in North America are currently lacking.

INTENDED FORM OF COOPERATION

Currently, within the California-Quebec ETS, members collaborate in a Consultation Committee and within the WCI. Joint auctions are held using the same auction platform and a common registry and tracking system, the Compliance Instrument Tracking System Service, provided by the WCI. A recent draft regulation will see Quebec harmonise its post-2020 allowance

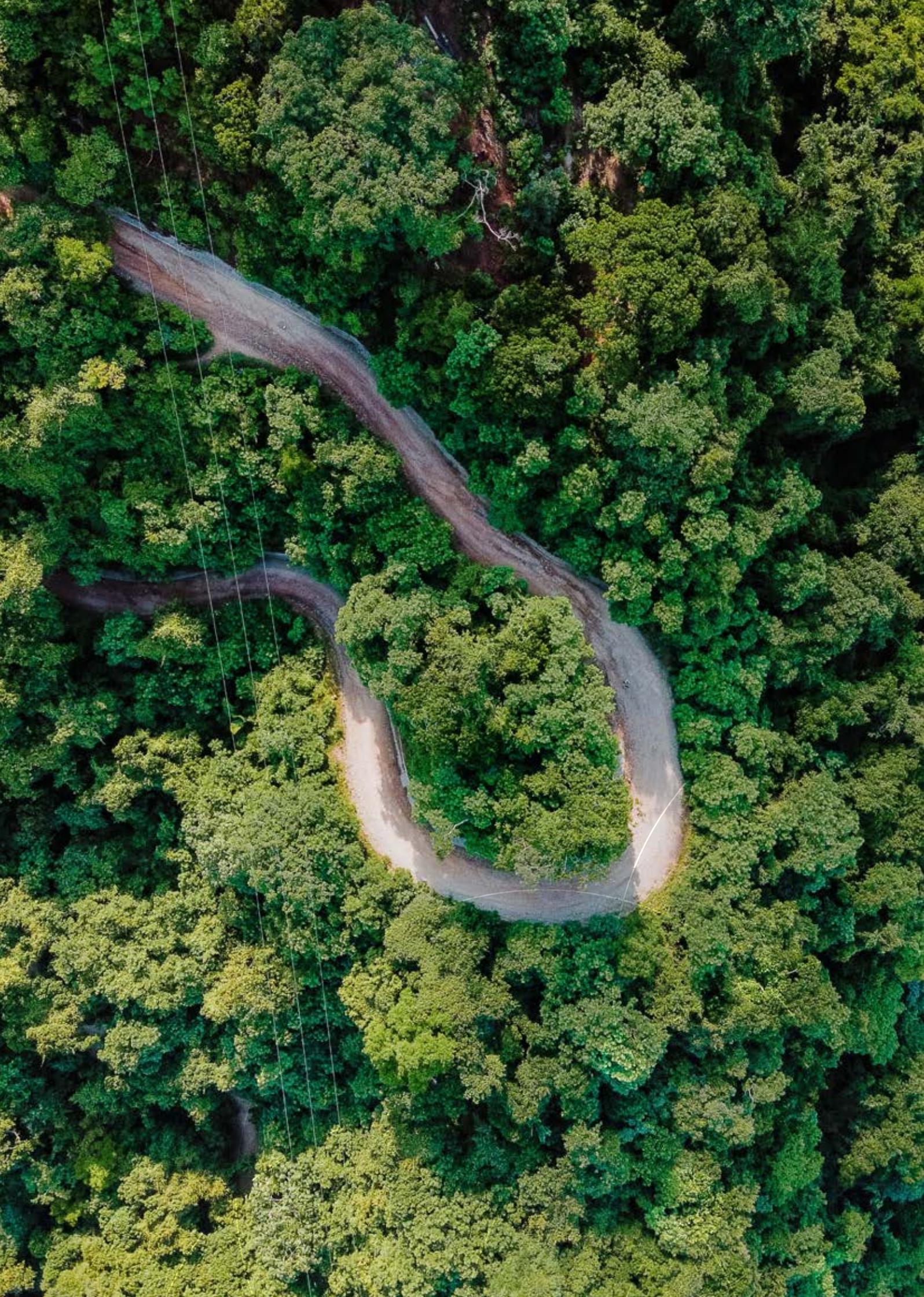
¹¹³ Norway’s Nationally Determined Contribution. 2015

¹¹⁴ Iceland’s Nationally Determined Contribution. 2015.

¹¹⁵ European Commission. [*The European Union, Iceland and Norway agree to deepen their cooperation in climate action.*](#) 2019.

reserve price tiers with that of California's.¹¹⁶ Article 6 requires that the use of ITMOs against NDCs is authorised by the participating Parties, thus, the linking of subnational initiatives like the California-Quebec ETS will require the respective Party authorisation. When international cooperation takes place between sub-national entities, the international accounting and reporting obligations ultimately remain with the respective national governments (as only Parties have obligations under the PA).

¹¹⁶ Carbon Pulse. Quebec to alter post-2020 ETS reserve sale prices in alignment with California. 2020.



ANNEX III: FACTSHEETS ON THE ENABLING INITIATIVES

African Development Bank
**ENERGY EFFICIENCY ITMO PROJECTS
IN WEST AFRICA**

ASIAN DEVELOPMENT BANK
ARTICLE 6 SUPPORT FACILITY

GERMANY
**BUNDESMINISTERIUM FÜR
UMWELT, NATURSCHUTZ UND
NUKLEARE SICHERHEIT (BMU)**

GGGI & SEA/ NORWEGIAN MINISTRY
OF CLIMATE AND ENVIRONMENT
**'MOBILIZING ARTICLE 6 TRADING
STRUCTURE' & 'DESIGNING POLICY
APPROACHES UNDER ARTICLE 6'
PROGRAMS**

**WEST AFRICAN AND EASTERN
AFRICA ALLIANCES ON CARBON
MARKETS AND CLIMATE FINANCE**

WORLD BANK
**THE CARBON PARTNERSHIP
FACILITY**

WORLD BANK
THE CLIMATE MARKET CLUB

WORLD BANK
**THE PARTNERSHIP FOR MARKET
IMPLEMENTATION**

WORLD BANK
THE WAREHOUSE FACILITY



THE AFRICAN DEVELOPMENT BANK: ENERGY EFFICIENCY ITMO PROJECTS IN WEST AFRICA

The AfDB is supporting energy efficient ITMO projects in West Africa with the aim to support both the development as well as the implementation of activities that can eventually be captured under Article 6.2 and 6.4 of the PA. Moreover, through this, the AfDB aims to create, enhance and share knowledge on obstacles that may hinder climate friendly technologies in Sub-Saharan Africa from partaking in international carbon markets. This effort is part of a larger initiative led by the African Climate Technology and Finance Center and Network (ACTFCN), to cooperate with regional MDBs for enabling access to climate finance as well as the scale-up of technology transfer through policy, institutional as well as organisational reforms.

The AfDB kick-started its efforts in October 2020, with the first phase entailing the preparation of scoping reports to identify obstacles and issues that may arise in the development of mitigation projects in West Africa, as well as the preparation of four project concept notes (PCNs). The four PCNs will be developed in a minimum of two West African countries, with the goal to further develop and implement two of them in two different countries, should additional funds become available through the AfDB's Fund for African Private Sector Assistance (FAPA). The countries have yet to be chosen and will be identified during the scoping stage. The focus on West African countries is due to the advanced activities of, inter alia, the West African Alliance on Carbon Markets and Climate Finance (WACC), the West African Power Pool (WAPP) and the engagement of countries in Article 6 negotiations and activities.

The revenues generated through the sale of ITMOs will form a (main) component of the financial backing for all projects that will be implemented. Once the first phase of project implementation has been completed, and contingent on additional funding through FAPA, the AfDB aims to support the development of full Mitigation Activity Design Documents (MADD) as well as enhancing capacities and institutional infrastructures needed to transact ITMOs.



ASIAN DEVELOPMENT BANK: ARTICLE 6 SUPPORT FACILITY¹¹⁷

The Asian Development Bank's (ADB) Article 6 Support Facility will provide capacity building and technical support to developing member countries (DMCs) to help them to identify, develop and test mitigation actions under the framework of Article 6 of the Paris Agreement.¹¹⁸ With its Carbon Market Program (CMP), the ADB is supporting DMCs to advance and implement market-based approaches under the Paris Agreement. Through this support, the ADB is aiming to play a leadership role in the development of post-2020 carbon markets in Asia.

The Facility was launched at COP24 in Katowice is financially supported by Germany and Sweden with an overall project budget of USD 4 million¹¹⁹. Since its launch, consultations with participating DMCs' counterpart agencies were held to agree on a work plan for the provision of technical support. Moreover, side events to engage stakeholders and promote the initiatives of the Article 6 Support Facility were organised during the 2019 Asia-Pacific Climate Week.¹²⁰

In 2019, ADB and the Sustainable Development Initiative (SDI) expressed interest to collaborate on SD piloting, i.e. an approach which aims at demonstrating the technical feasibility and cost-effectiveness of implementing a range of SD tools and approaches in Article 6 pilots. However, a potential pilot project had not been identified yet.¹²¹

The Facility intends to support DMCs on Article 6 piloting in two different ways. First, the implementation of Article 6 provisions will be tested on mitigation activities that had already been developed without a specific Article 6 focus. Second, the Facility aims at supporting the development of Article 6 concepts and virtual pilots that may lead to the delivery of ITMOs between 2020 and 2030.¹²²

¹¹⁷ This factsheet was updated based on publicly available information. Stakeholders were not available for interviews at this time.

¹¹⁸ ADB. [Regional: Establishing a Support Facility for Article 6 of the Paris Agreement](#). 2019

¹¹⁹ ADB. [ADB to Partner on New \\$4 Million Facility to Help Asia Meet Climate Commitments](#). December 7, 2018

¹²⁰ This information was taken from: ADB, [Regional: Establishing a Support Facility for Article 6 of the Paris Agreement](#), which was last updated in 2019.

¹²¹ Braden, S., Olsen, K., & Verles, M. [Assessment of sustainable development approaches for use in Article 6](#). 2019

¹²² IETA Insights, Asia Pacific Climate Week edition, part 1. [Piloting for post-2020 carbon markets](#). 2019

INTENDED FORM OF COOPERATION

Twenty-six countries in Asia and the Pacific have expressed their willingness to use carbon pricing, including international carbon markets, as a key tool for NDC implementation. The ADB aims to support its members engaging in mitigation actions under Article 6 to better understand the specific requirements and associated accounting systems that they will need to manage. Other areas of support will include sustainable development benefits, and ensuring environmental integrity and transparency. The support facility will mediate the guidance, rules and procedures from the Paris Rulebook (once Article 6 is operationalised) towards developing member countries and can translate these rules into the country context and potential pilot activities.



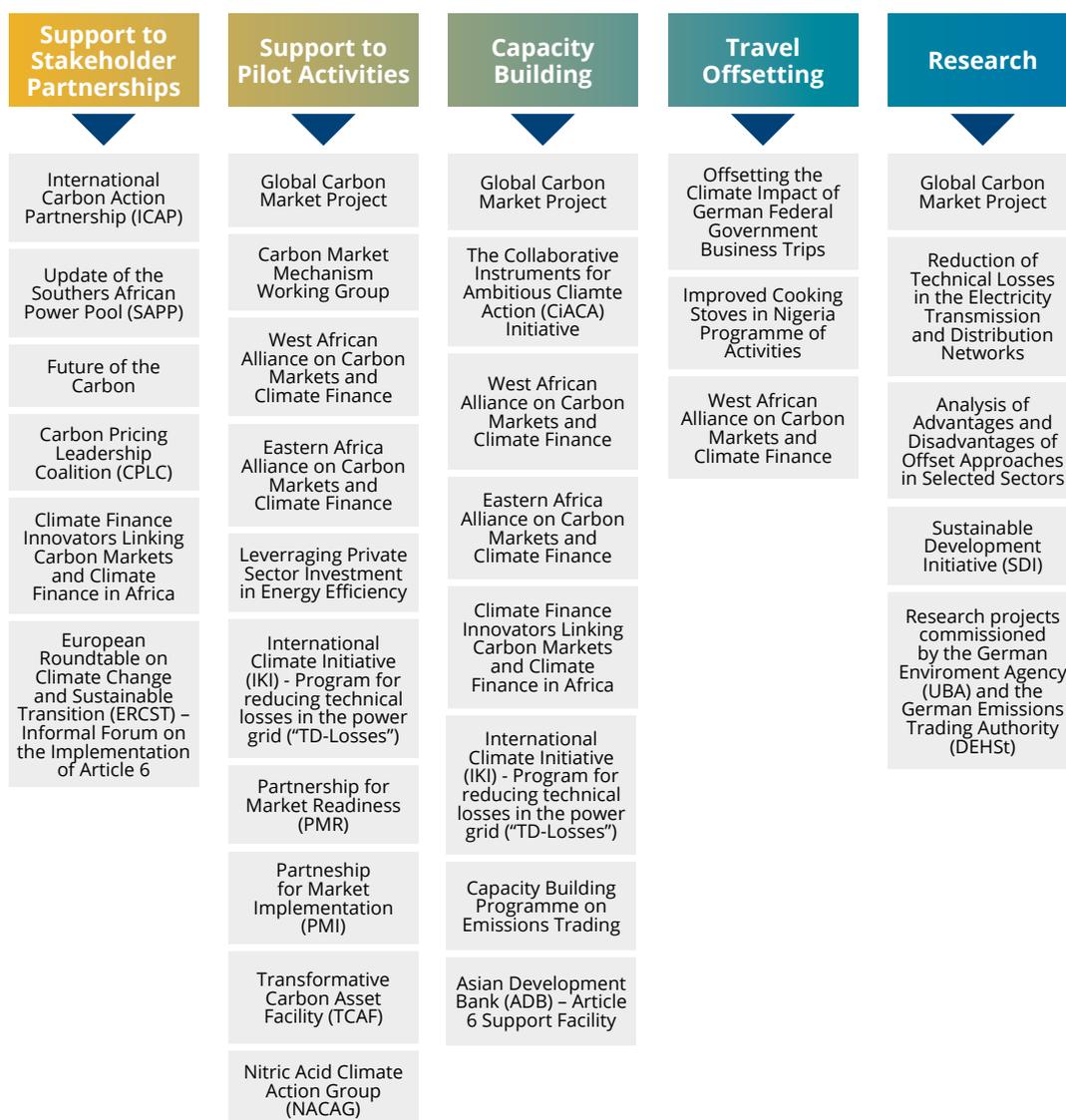
INITIATIVES SUPPORTED BY THE FEDERAL MINISTRY FOR THE ENVIRONMENT, NATURE CONSERVATION AND NUCLEAR SAFETY (BMU)

The German government has emerged as one of the key actors in the landscape of Article 6 initiatives and engages with the new market mechanisms in a variety of ways.

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) funds several initiatives that promote the development and design of the new international carbon markets under the Paris Agreement worldwide. In particular, BMU supports carbon market-related projects and activities that fall within four different scopes:

- i. Projects that aim at addressing outstanding issues in the international negotiations, thus laying the foundations for developing the rules of the new market-based mechanism;
- ii. Article 6 pilot projects that aim to test different cooperative approaches ahead of the operationalisation of the new carbon markets;
- iii. Activities aimed at developing institutional capacity for countries to use carbon pricing instruments and carbon markets; and
- iv. Platforms and partnerships that facilitate the exchange of information and foster coordination on carbon markets.¹²³

¹²³ BMU. [Transforming Carbon Markets. German Projects and Initiatives](#). 2019.



Source: Authors

GERMAN-FUNDED INITIATIVES

Several of the projects supported by BMU address the lack of capacity among countries of the Global South to engage with the new instruments for market-based cooperation under Article 6. The **'Global Carbon Market'** project, implemented by the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) in Eastern Africa, Chile, Tunisia, and India, gives assistance to policy-makers to define and utilise market-based instruments, including those provided for under Article 6, to meet their national mitigation goals. It also provides training to government representatives to the UNFCCC negotiations and supports regional collaboration on carbon markets and engages with the private sector.

Together with a number of other national governments, the German government through BMU co-funds the **'Collaborative Instruments for Ambitious Climate Action'** (CI-ACA) project. It aims at supporting jurisdictions

in designing and implementing carbon pricing instruments that are suited to their domestic needs, from the identification of such instruments to the roll-out on the ground.

BMU also contributes to some of the World Bank-led activities linked to the new market mechanisms of the Paris Agreement, including the '**Partnership for Market Readiness**' (PMR) and the 'Transformative Carbon Asset Facility' (TCAF). The PMR provides financial and technical support to selected countries to develop and implement price-based climate change mitigation instruments. It will be further developed through the '**Partnership for Market Implementation**' (PMI).¹²⁴ The TCAF supports countries of the Global South in establishing and implementing market-based mitigation mechanisms by providing results-based financing for emission reductions achieved at the sectoral level. The activities it carries out include enhancing the capacity of countries seeking TCAF support.

Under the **International Climate Initiative** (IKI), BMU funds projects that contribute to climate change mitigation and adaptation, including projects with an Article 6 focus, such as the 'Strategic use of cooperative approaches of the Paris Agreement to raise ambition' programme, the Climate Finance Innovators and the West African and Eastern Africa Alliances on Carbon Markets and Climate Finance. Furthermore, IKI supports bilateral cooperation projects with China, Mexico, and Ukraine that provide tailored help to partner countries for the establishment of emission trading systems. The scope of this cooperation includes capacity building for government bodies and authorities.

The '**Strategic use of cooperative approaches of the Paris Agreement to raise ambition**' programme is part of a global call for funding applications aimed at finding valuable ideas for international climate action.¹²⁵ The objective of the programme is to build capacity in middle-income countries to use international carbon market mechanisms i) to achieve effective NDC implementation, and ii) to develop strategies to broaden the unconditional goals of the NDC. The programme will target three to four countries and has a budget of 20 million Euros over four years. The target countries have not been selected yet. In the future, Article 6 pilot activities shall be developed within the framework of this programme.

The '**Climate Finance Innovators**' project aims to support the development of replicable climate financing models in Ethiopia, Senegal, and Uganda. The project involves the provision of capacity building support to member countries for Article 6 negotiations, as well as in the fields of climate finance and market-based mechanisms, including their synergies and the role they can play in supporting NDC implementation.

¹²⁴ See factsheet p. xx

¹²⁵ International Climate Initiative (IKI). [*IKI Thematic oriented selection procedure at COP 25*](#). December 2019.

BMU supports two sub-regional cooperation initiatives on carbon markets in Africa: the **'West African Alliance on Carbon Markets and Climate Finance'** through IKI and the **'Eastern Africa Alliance on Carbon Markets and Climate Finance'** through the GIZ Global Carbon Market project.¹²⁶ Both projects aim at enhancing the Article 6 readiness of member countries through different capacity building activities for government officials and through the creation of two networking and knowledge sharing platforms for the circulation of market-related knowledge in the two sub-regions.

In 2015, BMU launched the **'Nitric Acid Climate Action Group'** (NACAG), aiming to equip nitric acid plants worldwide with effective technology to abate nitrous oxide (N₂O) emissions. NACAG offers technical assistance to governments and plant operators on technological and regulatory issues regarding N₂O abatement, monitoring and reporting, as well as providing financial support to overcome investment burdens. So far, Tunisia, Zimbabwe, Georgia, and Mexico are the first countries that have qualified for the financial support under this programme by committing themselves to assure long term mitigation of nitric acid related N₂O emissions. Ten other countries have also joined the initiative,¹²⁷ currently being in the process of signing the respective statement for formalization of the commitment. NACAG has provided advisory and services to all of these and is in contact with sixteen other countries on this matter.

BMU also supports the initiative **'A Southern African Power Pool (SAPP) Results-based Renewable Energy Financing Mechanism'**, which developed a proposal for the design of the first Article 6 pilot activity in the sub-Saharan region – the Clean Energy Fund for the Southern African Power Pool (CEF4SAPP). Its goal is to support renewable energy deployment among member countries of the Southern African Power Pool (SAPP).

Finally, through the **German Environment Agency** (UBA), BMU supports a number of projects, including research projects and publications, that aim at laying the scientific background for Article 6 pilots. Several publications that explore different aspects of emission trading and of the operationalization of the new international market mechanisms, are available on the UBA and the German Emissions Trading Authority (DEHSt) websites.¹²⁸

One example of a project supported by UBA in this field is a social housing development project in Colombia – **'Achieving ambitious emission reductions through carbon pricing in developing countries'**. The project is aimed at identifying measures to provide incentives for emission reduction activities in Colombia's building sector by giving investors a share of the emission reductions in the form of carbon credits or by providing

¹²⁶ See factsheet p. 131

¹²⁷ Argentina, Jordan, The Federation of Bosnia and Herzegovina, Indonesia, Viet Nam, Cuba, Thailand, Pakistan, Uzbekistan, and Colombia.

¹²⁸ Umweltbundesamt. [Publications](#). 2020.
German Emission Trading Authority. [Publications](#). 2017.

results-based climate finance. Currently, under the project, NewClimate Institute and Öko-Institut are working on a conceptual study to leverage the potential for market-based cooperation offered by Article 6 to develop zero-energy homes.

Another example is the **'Capacity Building Programme on Emissions Trading'**, launched by BMU together with UBA and leading German experts. This project offers technical workshops, expert training and expert consultations to interested partner countries that request support to prepare and establish a domestic emission trading system. Current and former partners include Brazil, China, Chile, Kazakhstan, Mexico, South Korea, Thailand, Turkey, and Ukraine.



EMERGING INITIATIVES OF THE GLOBAL GREEN GROWTH INSTITUTE

GGGI is a new player entering the Article 6 piloting scene. The institute works with its member and partner countries to support developing country governments in transitioning towards sustainable green growth and climate resilience. The institute supports the access to all types of climate finance, considering carbon pricing and the piloting of carbon transactions important instruments in doing so.

GGGI is leading two Article 6 activities, the 'Mobilizing Article 6 Trading Structures (MATS) Programme' and the 'Designing Policy Approaches Under Article 6'. The first one is based on an agreement signed between the Swedish Energy Agency (SEA) and GGGI at COP25 in 2019. The second one is funded by the Norwegian Ministry of Climate and Environment.

MATS PROGRAMME

KEY FACTS

The 3-year technical assistance programme will support three low- and middle-income countries in establishing or revising domestic institutional capacities. Four mitigation activities shall be further developed under the programme with the goal to complete transactions of ITMOs.¹²⁹ Two activities will focus on the energy sector in Ethiopia, one will focus on the waste sector in Nepal and another one on the manufacturing sector in Cambodia.

The respective national capacities will be (re-)designed to be compliant with Article 6 requirements and allow for the assessment of mitigation potentials and subsequent trading of mitigation outcomes.¹³⁰ Given the novelty of the programme, most of the exact rules and procedures are still to be determined and more details can be expected over the next year. GGGI is currently in the selection process of concept notes and activities are still under way.

¹²⁹ GGGI. [GGGI and SEA to develop four mitigation activities generating ITMOs in energy, waste and manufacturing](#). October 2020.

¹³⁰ GGGI. [Swedish Energy Agency and Global Green Growth Institute partner to establish Article 6 Activities](#). December 2019.

The programme's main goal is to establish a sustainable institutional framework that is aligned with Article 6 requirements and enables the generation and trade of mitigation outcomes. Furthermore, it will also set up institutional procedures for signing of MOPAs and activity implementation.¹³¹ Upfront payments as part of the MOPAs are not envisaged at this moment.

INTENDED FORM OF COOPERATION

The activities to be supported under the MATS Programme are intended to be developed as Article 6.2 initiatives. Should the negotiations on Article 6 fail to be concluded in the next year, the MATS programme would endeavour to still transact under San José Principles or similar initiatives. Moreover, rules that are not in place yet could be decided bilaterally, especially if interested Parties are also firm believers in the San José Principles.

The carbon price of the envisaged transaction will be determined by bilateral negotiations between the SEA and the respective seller. Moreover, and unlike markets of the past, the carbon price will also be more closely related to the price of implementation. The same logic applies to the sharing of mitigation outcomes between buyer and seller, which will also be determined by bilateral negotiations. Furthermore, the programme envisages first market transactions depending on the costs of implementation and respective requirements within the host countries. For adequately tracking the transactions, the programme will most likely use multiple registries depending on the decisions taken by the SEA and the respective countries.¹³²

The supported pilot mitigation activity will form part of the scope of the NDC, but above and beyond the unconditional targets of the respective NDC. Due to the early stage of the programme and the selection process still under way, no information can be provided regarding quantified sectoral goals. Decisions as to whether sectoral level NDC tracking will be used against transactions will likely differ from country to country.¹³³

DESIGNING POLICY APPROACHES UNDER ARTICLE 6

KEY FACTS

The 'Designing Policy Approaches Under Article 6' programme focuses on developing policy approaches that could potentially generate ITMOs under Article 6 of the PA. The programme is pursuing the implementation of policy crediting approaches that are wider and more encompassing than the historic project-based carbon markets.¹³⁴ The project is divided

¹³¹ GGGI. [Swedish Energy Agency and Global Green Growth Institute partner to establish Article 6 Activities](#). December 2019.

¹³² Interview with GGGI. July 2020.

¹³³ Interview with GGGI. July 2020.

¹³⁴ GGGI. [Designing policy approaches under Article 6](#). December 2019.

into two phases, a scoping phase in eight countries to assess national policies and sectors for the identification of opportunities and a development phase of identified policy approaches in up to four selected countries.¹³⁵ The eight scoping countries of the first phase comprised Colombia, Mexico, Peru, Vietnam, Indonesia, Morocco, Thailand and Senegal.¹³⁶ Indonesia and Morocco have been selected for the second phase.

INTENDED FORM OF COOPERATION

The policy crediting programme's intended form of cooperation are Article 6.2 cooperative approaches.

¹³⁵ GGGI. [*Project Reference Profiles – Global \(GIS03\) Article 6 Sectoral Approach an Enabling Environment*](#). 2020.

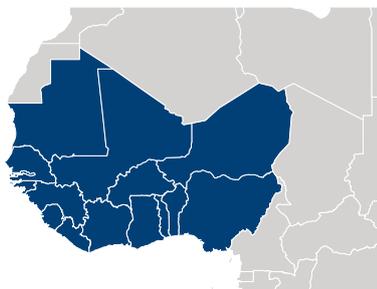
¹³⁶ See above.

WEST AFRICAN AND EASTERN AFRICA ALLIANCES ON CARBON MARKETS AND CLIMATE FINANCE

The West African and Eastern Africa Alliances on Carbon Markets and Climate Finance are two coalitions of African countries which pursue the same goal in two different sub-regions – foster sub-regional cooperation and enhance readiness for the implementation of the new Article 6 carbon market mechanisms and for climate finance mobilisation. The West African Alliance was established in 2017 by 16 West African countries, while the Eastern Africa Alliance, launched in 2019, comprises 7 Eastern African countries.¹³⁷ The former is supported by a nearly 2.8 M EUR grant of the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) awarded for the period August 2020 – January 2024.¹³⁸ The latter is supported by the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) Global Carbon Market Project in East Africa.¹⁴⁰ The work of both Alliances is member country-driven, meaning that it is tailored to the needs of member countries as defined by their country representatives.

Members of the two Alliances have been very active recently in the Paris Agreement Article 6 negotiations under the African Group of Negotiators (AGN) leadership, in order to ensure that Africa's special circumstances and needs are taken into consideration in the design of the new carbon markets.

THE WEST AFRICAN ALLIANCE



The West African Alliance aims at promoting sub-regional cooperation and enhancing capacity to increase the participation of West African countries in the international carbon markets and facilitate access to climate finance for NDC implementation.

¹³⁷ Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Nigeria, Liberia, Senegal, Sierra Leone and Togo.

¹³⁸ Burundi, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda.

¹³⁹ International Climate Initiative (IKI). [West African Alliance on Carbon Markets and Climate Finance](#). October 2020.

¹⁴⁰ International Institute for Sustainable Development (IISD). [Carbon Pricing and Markets Update: Initiatives Promote Carbon Pricing Approaches in Southern and Eastern Africa](#). September 2019.

To achieve this goal, the Alliance (i) supports member participation in international negotiations on Article 6, ensuring that African priorities are reflected in the design of the new carbon markets; (ii) organises capacity-building activities and provides hands-on advice to enhance member country readiness for Article 6 implementation; and (iii) facilitates the outset of Article 6 activities by providing a platform for member countries to connect with strategic actors of the international carbon markets.

A steering committee guides the strategic planning and implementation of the activities of the Alliance. The steering committee consists of the secretariat and coordinator of the Alliance, the financial host partner and trustee of the Alliance, the steering committee technical partner, and the donors.

The secretariat hosts the Alliance coordinator, who ensures the executive management of the Alliance. The secretariat manages the day-to-day operations of the Alliance, and supports the Alliance coordinator in his work as official representative of the Alliance.

The Alliance also includes thematic working groups which form the core of the substance-related work of the Alliance. Their main task is to act as focal point for information and to identify key topics that need to be further explored by the Alliance in order to improve country readiness for Article 6 implementation. The Alliance has established four thematic working groups: on carbon markets and carbon pricing; on climate finance; on transparency; and on technology transfer.

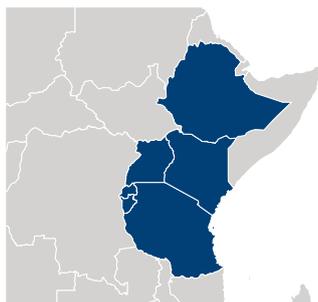
During its first phase (2017-2020), the Alliance launched an Article 6 in-country readiness support programme in 2018 to enhance Article 6 readiness in the region. Togo and Nigeria were selected among Alliance member countries to receive tailored readiness support. In Togo, the Alliance supports the government in increasing the country's MRV capacities and in identifying suitable transition pathways for its CDM portfolio. In Nigeria, the readiness support activities aim at exploring how carbon markets can facilitate the implementation of the NDC, which institutional set-up will need to be established under Article 6, and what is the future of Nigerian CDM activities.

Now, the Alliance has entered its second phase (2020-2024). Throughout the coming years, the Alliance plans to carry out a number of activities that will help member countries prepare for the implementation of Article 6 at the nation level. These include:

- (i) developing knowledge products, such as briefings and reports, that will build a conceptual framework for integrating Article 6 carbon markets and climate finance into West African national policy processes;
- (ii) creating national readiness platforms that will assist selected member countries in preparing for Article 6 implementation;
- (iii) developing a scoping study to identify private sector needs for engaging with carbon markets and climate finance;

- (iv) developing a database that will provide members with up-to-date information on relevant stakeholders for mitigation project development and implementation;
- (v) conducting workshops that will facilitate an exchange between regional stakeholders and match potential recipients with carbon markets and climate finance sources; and
- (vi) providing ad-hoc support on Article 6 upon member request.

THE EASTERN AFRICA ALLIANCE



The Eastern Africa Alliance aims at enhancing the region's readiness on the next generation of carbon markets under the Paris Agreement.

The Alliance (i) promotes a common vision on carbon markets and climate finance in the region; (ii) fosters the participation of delegates from mem-

ber countries in international negotiations and fora; and (iii) supports Article 6 readiness in the region through capacity building activities.

The strategic leadership of the Alliance is assumed by the Steering Committee of the Alliance, while the Coordinator, embedded in the Alliance Secretariat, manages the activities of the Alliance. Currently, the Secretariat is hosted ad interim at the UNFCCC Regional Collaboration Centre (RCC) in Kampala (Uganda).

Since its creation, the Alliance has carried out several activities aimed at supporting its member States, some of which are already ongoing:

- i. a virtual regional private sector dialogue aimed at increasing the knowledge base of the private sector on carbon markets in the context of the CDM transition was conducted in September 2020 and offered opportunities for peer learning based on the presentation of piloting experiences in the region;
- ii. an Article 6 handbook for Eastern African negotiators is currently under development;
- iii. a study on institutional and legal infrastructures for Article 6 for each member country has been commissioned by the Alliance, in an effort to promote convergence across such diverse systems;
- iv. a carbon pricing training, supported by GIZ, and a carbon taxation training, supported by the World Bank, are going to be held soon for focal points of the Alliance and government officials;
- v. a climate finance training is being organised in Rwanda with a view to scaled up in the region;
- vi. a training for East African negotiators on market mechanisms and Article 6 will take place in the upcoming months; and

vii. the calculation of the standardised baseline for the Grid Emission Factor (GEF) for the Republic of Kenya is planned to be made in the future.

COOPERATION

The strong synergies between the two projects have been recognised from the start and the two Alliances regularly collaborate and organise joint capacity building activities for their member countries, thus fostering collaboration on carbon markets beyond the sub-regional level. To date, the Alliances have organised together: i) joint consultations on Article 6 aimed at building knowledge and capacity of member countries on key issues pertaining to the Article 6 negotiations; and ii) a Buyers and Sellers Roundtable on Pilot ITMO Transaction Initiatives in West and Eastern Africa, which the Alliances aim at making a regular event.

RELATIONSHIP WITH NDCS

Both Alliances seek to increase access to carbon markets and climate finance in the two sub-regions to facilitate the implementation of member countries' NDCs. West and Eastern African countries are aware of the role that market mechanisms can play in facilitating the achievement of their NDC goals and have displayed openness to the use of carbon markets in their NDCs.

WORLD BANK: THE CLIMATE MARKET CLUB

The Climate Market Club was established by the World Bank together with the multilateral development bank (MDB) Working Group on Article 6.¹⁴¹ The Club aims at creating a platform to facilitate the development of Article 6.2 piloting modalities among members. Members of the Club are national governments which commit to adhere to the principles of guaranteeing environmental integrity, avoiding double counting, and following the rules and guidance that are progressively developed during the international Article 6 negotiations.¹⁴²

The Club is expected to accomplish a threefold purpose:

- i. Providing **a knowledge-sharing platform** for countries active in Article 6 piloting. Members can build on each other's experience to implement piloting concepts, discuss and address potential challenges or capacity-building gaps, and jointly develop practical approaches for robust and transparent cooperation.
- ii. Building **a solid knowledge base** for ITMO transactions. The Club is meant to develop template document frameworks and knowledge products that can increase capacity of member countries to generate, transfer and use mitigation outcomes generated from pilot activities. These products will be publicly available to facilitate dissemination among relevant stakeholders.
- iii. Giving **a signal of climate ambition**. Through their membership in the Club, countries can show their climate stewardship and contribute to the discussions around the operationalisation of Article 6.

INTENDED FORM OF COOPERATION

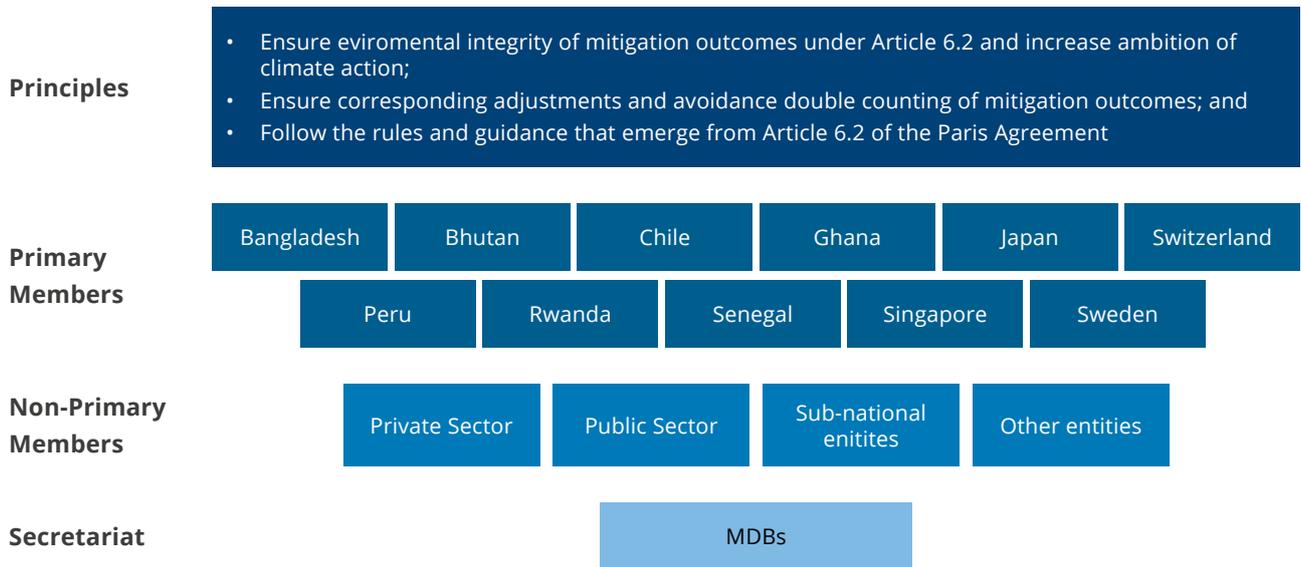
Countries join the Club on a voluntary and non-exclusive basis. At present, the Club comprises eleven country members, including Bangladesh, Bhutan, Chile, Ghana, Japan, Peru, Rwanda, Senegal, Singapore, Sweden, and Switzerland. Public or private sector entities, sub-national entities, or civil

¹⁴¹ The MDB Working Group on Article 6 comprises the Asian Development Bank (ADB), the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), and the Inter-American Development Bank (IDB), in addition to the World Bank Group.

¹⁴² Srinivasan, S., & Sanchez, F., *Unlocking ambition through a Climate Market Club*, November 2020.

society organisations may also be authorised by member countries to participate in the Club and share their experiences.

The figure below outlines the organisational structure of the Climate Market Club.



Source: Srinivasan, S., & Sanchez, F., [*Unlocking ambition through a Climate Market Club*](#), November 2020.

WORLD BANK: THE CARBON PARTNERSHIP FACILITY

The World Bank Carbon Partnership Facility (CPF) became operational in 2010 with the aim to scale-up and innovate use of carbon finance instruments to support country initiatives that move toward low-carbon economies. It has been developing pilot programmes to ‘test’ the programmatic crediting approach and scale-up business model for mitigation actions since 2012. The CPF collaborates with governments and private companies on both programmatic in developing countries in the form of CDM Programme of Activities (PoAs) and sector-based emission reduction programmes in the New Market Mechanism under Paris regime. The CPF provides a combination of carbon finance by acquiring emission reduction units (ERs) through the Carbon Fund, and technical assistance and capacity building in the form of grants through the Carbon Asset Development Fund to fund the preparation and implementation of the programmes.

The information provided in this factsheet is based on the most recent publicly available information, with the majority of the information dating from 2016.¹⁴³

SUMMARY TABLE

Specific sectors and technologies	Waste, urban development, gas flaring, power sector development
Possible stakeholders and participants	Country governments, (private) investors and project developers. In 2020, the CPF Carbon Fund had three Buyer Participants (the governments of Spain and Norway, and the Swedish Energy Agency) and ten Seller Participants. The Carbon Asset Development Fund is supported by four Donor Contributors (Governments of Italy, Norway, Spain and the European Commission).
Overall resources available	Buyer Participants had pledged EUR 98.8 million ¹⁴⁴ to the Carbon Fund and the Carbon Asset Development Fund had received USD 35 million in external funding.
Form of Article 6 cooperation	By operating as a facility where buyer and seller cooperate to develop upscaled approaches to emission reductions, the new programme that CPF intended to develop could fit under Article 6.2.
Relationship to NDC	Programmes supported by the CPF must be consistent with the sustainable development objectives and climate change strategy of the host country. The extent to which emission reductions paid for through the CPF contribute to the host country’s NDC depends on the host country’s NDC scope.

¹⁴³ The CPF website copyright license dates back to 2017.

¹⁴⁴ Carbon Partnership Facility. 2016 Annual Report. [From https://cpf.wbcarbonfinance.org/sites/cpf_new/files/2%20Annual%20Report.pdf](https://cpf.wbcarbonfinance.org/sites/cpf_new/files/2%20Annual%20Report.pdf)

<p>Volume and price of ITMOs</p>	<ul style="list-style-type: none"> • In 2020, the total PoA ERPA volume of the CPA portfolio is 7.5 million CERs. • Initially, the CPF pricing approach has relied on benchmarking against the price for primary market CERs, with a small risk premium or discount based on the risks of programme delivery. ERs are transacted at a negotiated fixed price.
<p>Sustainable development benefits</p>	<p>The Facility aims to integrate its carbon finance activities into existing sustainable and economic development policies.</p>

KEY FACTS

The CPF was established with the aim of developing the next generation of carbon finance for the post-2012, post-Kyoto climate change cooperation landscape. Since its inception, the CPF has worked on developing conceptual and methodological approaches to pilot scaled-up crediting mechanisms.

Already in 2012, prior to the adoption of the PA, the CPF started developing modalities to pilot cooperation under the ‘New Market Mechanism’. In their design, pilots had to consider the new requirement of global net mitigation of emissions rather than pure offsetting, where possible, adopt sectoral or economy-wide approaches, and consider the risk of double counting. Considering the very early stage of the design of post-Kyoto climate change cooperation, core challenges in designing these pilots included the lack of climate change policies and strategies in potential host countries, making it difficult to design pilot activities aligning with national priorities and circumstances. Connected to this was the challenge to determine sufficiently conservative crediting baselines, which are below BAU and consistent with emerging national ambitions and targets. In addition, there was a need to further develop methodological frameworks for accounting emissions reductions on a programmatic basis, rather than the project-structure that had mostly been applied by the CDM.¹⁴⁵

As of 2020, there are seven PoAs included in the CPF portfolio. Programs range from solid waste management in Brazil to renewable energy in Tanzania. The three Buyer Participants had pledged in total EUR 98.8 million to the Carbon Fund, and the Carbon Asset Development Fund had received USD 35 million of external funds through its four donors, charges and investment income.

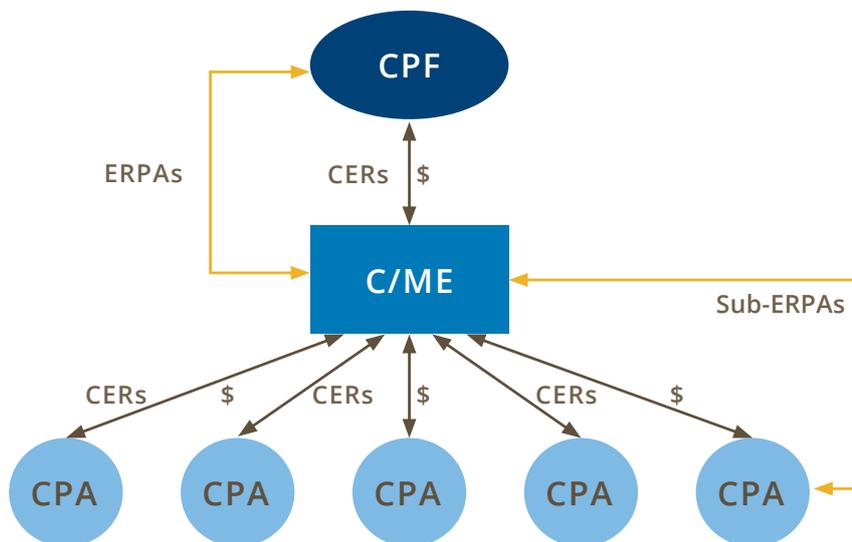
INTENDED FORM OF COOPERATION

The CPF has three types of participants. The first are Buyer Participants, pledging money to the Carbon Fund which is used to buy credits. The

¹⁴⁵ Carbon Partnership Facility (2012) World Bank Carbon Finance Unit Carbon Partnership Facility 2012 Annual Meeting. New Market Mechanism – Design Considerations and Piloting. At <https://bit.ly/2EevEoh>

second are Donors Contributors, contributing to the Carbon Asset Development Fund. These funds are not used to buy carbon credits, but rather to support the development of mitigation programmes. Finally, Seller Participants are the entities developing and managing the programmes.

The CPF is structured as a facility where Buyer and Seller Participants participate equally in its governance, and Donor participants (including countries, public or private entities) may participate in CPF governance in an advisory capacity. By bringing these parties together, the CPF works to have a closer cooperation between buyer and seller countries in developing programmatic approaches, aiming to make carbon finance an effective tool to mitigate carbon emissions. To further ensure this alignment, CPF eligibility requirements ensure programs supported through the CPF are consistent with the sustainable development objectives and climate change strategy of the host country.



Source: CPF (2014)

The CPF signs an Emission Reductions Purchase Agreement (ERPA) with the Coordinating/Managing Entity (CME) of a programme. These can be public or private entities, which are tasked with the development and implementation of the programme. Next, the CME concludes a number of sub-ERPAs for each individual CPA it likes to incorporate into its programme. As such, generated emission reductions move hands twice, first from the project developer to the CME, and secondly from the CME to the Buyer Participants of the CPF Carbon Fund.

Often, CPF carbon finance is part of a bigger programme financing package. Programmes may be further supported through the CPF Carbon Asset Development Fund, for example to fund capacity development for CMEs to manage programmes. Many CPF programmes are part of larger World Bank supported interventions that receive loans or grants from the World Bank or other private investors.

TRANSACTIONAL SET-UP

With its two funds, the CPF provides a blend of carbon and climate finance. To support the development and implementation of PoAs, the Carbon Asset Development Fund provides climate finance in the form of grant resources for methodological work and capacity building for programme developers. Through the Carbon Fund the CPF provides carbon finance as carbon credits generated by these programmes are bought by CPF Buyer Participants.¹⁴⁶

¹⁴⁶ See International Bank for Reconstruction and Development (15 July 2011) General Conditions Applicable to Certified Emission Reductions Purchase Agreement. Programmatic Climate Development Mechanism Programs.

WORLD BANK: THE PARTNERSHIP FOR MARKET IMPLEMENTATION

The World Bank Partnership for Market Implementation (PMI)¹⁴⁷, launched at COP25 Madrid as a successor programme to the Partnership for Market Readiness (PMR) has two key objectives:

1. Assisting client countries design and deploy explicit carbon pricing appropriate to their domestic context and compatible with their sustainable development priorities;
2. Catalysing the development of and enabling countries' participation in the next generation of international carbon markets.

The PMI considers Article 6 as a vehicle to facilitate international cooperation on carbon markets, and to promote the convergence of national carbon pricing instruments. The PMI is set up as a 10-year programme with a capitalisation target of USD 250 million and will be operational by December 2020.

INTENDED FORM OF COOPERATION

The PMI will operate on the basis of a country-led model and assist countries in further developing their nationally prioritised carbon pricing policies in line with their updated NDCs and long-term decarbonisation strategies. With three 'support categories' the PMI targets (i) countries that already have a demonstrated political commitment to implement a carbon price, or who already have a carbon pricing system in place; (ii) countries that require support to assess the choice of an appropriate carbon pricing instrument and carry out the early stages of policy development roadmaps and (iii) regions or sub-national jurisdictions that require targeted support to advance their carbon pricing systems, provided there is commitment and endorsement from the responsible federal entities.

On a needs-basis, the PMI may support countries with developing the required infrastructure for participation in Article 6 of the Paris Agreement. Activities could include capacity-building for GHG data collection and management, and supporting the design and/or enhancement of existing MRV frameworks. The PMI will also develop a knowledge base on market mechanisms and facilitate information exchange between actors through technical discussions and the publication of guides, trainings or brochures.

¹⁴⁷ World Bank. PMI, Partnership for Market Implementation. 2019

Administered by the World Bank, the PMI will be governed by a Partnership Council under an umbrella trust fund structure in accordance to the new trust fund reforms. The programme me aims to support 30 countries and jurisdictions in the development and implementation of carbon pricing instruments. The World Bank is currently finalizing donor commitments.

WORLD BANK: ESTABLISHING A WAREHOUSE FACILITY FOR MOs

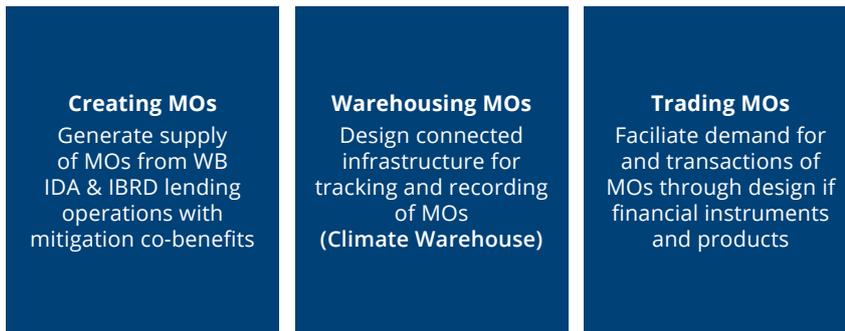
The World Bank's Climate Warehouse programme pilots activities to facilitate supply and demand for mitigation outcomes, and the infrastructure to support their exchange. This includes the simulation of an umbrella platform that surfaces information on mitigation activities and outcomes from connected systems. Mitigation outcomes are seen as assets that will be monitored, verified and either counted towards the NDC at the place of implementation, retired or transferred through a corresponding adjustment.

To ensure transparency and immutability, the Warehouse simulation relies on blockchain technology, which guarantees that changes made by partners to the information stored on the system are recorded and can be easily traced. The Warehouse meta-registry surfaces publicly available information from connected registries. To ensure the robustness of mitigation outcomes, the [Mitigation Action Assessment Protocol \(MAAP\)](#) has been developed. The MAAP tool aims to provide standardised process for independent assessment of the quality of mitigation activities generated from a variety of mechanisms and processes to enhance comparability.

INTENDED FORM OF COOPERATION

In its current concept, Climate Warehouse programme consists of 4 work streams:

1. **Creating mitigation outcomes (MOs):** Piloting the creation of an initial supply of Mitigation Outcomes (MOs) for post-2020 climate markets from the World Bank's lending programs. These MOs are units that have been generated either to be counted towards NDCs or for international transfers under Article 6 of the Paris Agreement
2. **Warehousing MOs:** Demonstrating the use of new technologies and infrastructure to track MOs and avoid double counting.
3. **Trading MOs:** Development of financial and risk management products that allow climate market transactions while managing regulatory and market uncertainty.
4. **Enabling environment:** Facilitating discussions between policymakers, the private sector and expert groups regarding the regulatory framework and enabling environment for operationalizing post-2020 climate markets.



Source: World Bank, Creating Climate Markets; presentation at the Global DNA Forum in Bonn; September 21st, 2018.

Create **enabling environment**, inform development of **regulatory framework**, **institutional arrangements** and efficient **market infrastructure** and associated **governance arrangements**, including:

- **Climate Market Club**
- **Approach Papers** on key operational issues such as environmental integrity, corresponding adjustment, host country institutional arrangements for Article 6 of Paris Agreement, etc.

Starting with pilots based on its own lending operations around the globe, the World Bank is expecting a capacity building effect to translate into a wider domestic Article 6 market readiness.

The first simulation of the meta-registry was run between August and November 2019. It involved four participants who connected their registries to the Warehouse: The Government of Chile (Ministry of Energy); the Government of Japan (Ministry of the Environment); the Gold Standard Foundation; and Verra. This first phase of simulation confirmed that the Warehouse can provide an effective decentralised meta-registry system to connect country and institutional registry systems, as well as enhance transparency of market activities through blockchain technology.¹⁴⁸ It also helped have greater clarity on how much countries need to report.

A second phase of simulation will be run soon, while a gradual scale up of the market infrastructure is expected to be achieved by 2021.

¹⁴⁸ The World Bank. Summary Report: Simulation on Connecting Climate Market Systems. 2019.

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