

Article 6 Corresponding Adjustments

Key accounting challenges for Article 6 transfers of mitigation outcomes

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On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany

Implemented by



Impressum

Publisher:	Climate Focus, B.V.	Perspectives Climate Group GmbH
	Sarphatikade 13 1017 WV Amsterdam Netherlands	Hugstetter Str. 7 79106 Freiburg, Germany Germany
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Date: 30.11.2019

This paper has been commissioned by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

Disclaimer

The analysis, results and recommendations in this paper, funded by the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU), represent the opinion of the authors and are neither necessarily representative of the position of the funder nor of the Gesellschaft für Internationale Zusammenarbeit (GIZ GmbH).

Acknowledgements

The authors wish to thank the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the Gesellschaft für Internationale Zusammenarbeit (GIZ) for their contribution in defining specific trends and topics of analysis and for sharing their insights and experiences. Needless to say, this does not imply that they endorse the analysis or recommendations included in the publication.

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Editorial/Introduction

On 4 November 2016, the Paris Agreement (PA) entered into force less than eleven months after its adoption in December 2015. The record speed with which countries ratified the agreement and met the double threshold of 55 Parties and 55% of global emissions is largely unprecedented in international policy in recent years. The approach of the PA, including its treatment of 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 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 Art. 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 and contradictory topic.

This study aims at making a step toward a better understanding of the above mentioned issues covered by Art. 6. as well as an enhanced usage of its scope. It is supported by a grant from the 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

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1 Introduction

The operationalization of Article 6 is one of the main gaps in the Paris Agreement rulebook adopted at COP24 in Katowice. While Parties have made progress in the various negotiation rounds, several crunch issues remain that will need to be concluded during COP25 in Santiago, Chile.

One main issue is the notion of ‘corresponding adjustments’ that are to be made to prevent double counting. Making a corresponding adjustment means that when Parties transfer a mitigation outcome internationally to be counted toward another Party’s mitigation pledge, this mitigation outcome must be ‘un-counted’ by the Party that agreed to transfer it. While this seems straightforward, questions around how and when a corresponding adjustment should be applied remain contentious.

This internal discussion paper intends to provide background information on these issues, while taking into account African country contexts. The paper seeks to capture and analyze the various options, definitions and questions coming out of the latest negotiations at SB50 in Bonn, and establish a basis for the upcoming negotiations at COP25. It should be noted that the negotiations on the translation of paragraph 77d of decision 18/CMA.1 into reporting formats - that specifies reporting guidelines and provides basic rules for corresponding adjustments - have been “put on hold” subject to agreement on Art. 6 modalities and procedures. Parties disagree with regard to the legal status of para 77d in the absence of an Article 6 decision, some Parties insist it would be fully applicable and others insist it would remain in abeyance.

2 Definition of ITMOS

There are two options in the negotiations for the definition of ITMOS:

- Keeping it as open as possible and designing an accounting system that is general yet strong enough to ensure robust accounting and transparency for any kind of “international transfers of mitigation outcomes”
- Agreeing on key characteristics of ITMOS so the accounting system can be designed specifically from the beginning to ensure it addresses the accounting challenges properly.

While Parties could agree on the first option more easily, there is a risk that, despite a CMA decision on Article 6, neither Parties nor non-Party stakeholders have the clarity needed to implement cooperative approaches in a robust way. Clarity on what ITMOS are facilitates the operationalization of accounting processes, and more specifically the applicability, timing and basis of corresponding adjustments.

Table 1 below, summarizes some of the key open questions with regard to the definition of ITMOS.

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Table 1: Overview of open questions related to ITMOs

<i>Open questions</i>	<i>Options</i>	<i>Consequences on accounting systems</i>
<i>How are ITMOs expressed?</i>	In a unit As an amount As a net flow	The fungibility of ITMOs (are ITMOs “credits” that can be traded on the global market?)
	All three forms interchangeably	The frequency of transfers and the timing of reporting (net flows can only be reported after a certain amount of time)
<i>At what point in time do mitigation outcomes become “internationally transferred mitigation outcomes”?</i>	At creation of the mitigation outcome	Timing of reporting and of corresponding adjustments
	At authorization of transfer At (first) transfer At use for the NDC /other mitigation purposes	
<i>Is ITMO a specific type of mitigation outcome?</i>	ITMO is a mitigation outcome that was created following the 6.2 guidance for transfers between Parties	The applicability of the accounting system to different types of mitigation outcomes- for instance carbon credits on the voluntary carbon market, A6.4ERs, traded emission allowances under linked ETS
	ITMO is any type of mitigation outcome transferred internationally	
<i>Do ITMOs have a common denomination?</i>	ITMOs are denominated in CO ₂ e	Simplicity of accounting and comparability of transfers with a view on their impact on PA mitigation objectives.
	ITMOs are expressed in any metric used in Parties NDC	Environmental integrity in accounting depends on various factors, including the conversion factors used when NDCs have different metrics

How are ITMOs expressed and when do they become ITMOs?

Defining ITMOs specifically to be units, amounts or net flows has implications on the point in time when a mitigation outcome would turn an “internationally transferred mitigation outcome” and how they are accounted for.

2.1 ITMOs are units that move across or within electronic registries

Narrowly seen, units would be credited mitigation outcomes for a specific mitigation intervention, “issued” into a registry and that can be traded multiple times. A stringent interpretation could require that unit issuance is verified by internationally accredited third-party auditors and in line with the Article 6.2 guidance. In a broader interpretation, ITMOs could be an overarching category of multiple types of units, including A6.4ERs, units certified by voluntary carbon standards (only if brought under Article 6.2 by Parties) or nationally certified units eligible under ETS as long as they respect the Article 6.2 principles on environmental integrity. This definition would also include cases where mitigation outcomes are owned and used by non-Party stakeholders. Even more broadly defined, governments could issue units not linked to specific mitigation interventions comparable to Assigned Amount Units (AAUs) under the Kyoto Protocol, generated by NDC overachievement, ETS

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transfers or for instance “surpluses” in emission budgets.

2.2 ITMOs are amounts transacted by Parties

Amounts can be interpreted as quantities of mitigation outcomes transacted from one government to another at a specific point in time, without being tradable by non-government actors and also not being held in specific registries. This would allow to cover the trade of emission allowances in linked ETSs that are not covering the entire economy without the necessity of issuing units for transferred amounts.

2.3 ITMOs are net flows reported by Parties

Net flows would reduce accounting for ITMOs to the balance of cross-border transactions over a certain period and not take into account single transactions. Defining ITMOs as a “net flow” between Parties would thus decouple the accounting systems from the real-time single transfers happening. Tracking of transfers could occur for all units and amounts traded, however, accounting would only occur after a certain period of time (e.g. annually) and only for the reported net flows of transfers between two Parties. For instance, in the case of linked ETSs, the single transactions of allowances between entities subject to a linked ETS would not be considered ITMO transactions. The ITMO transaction would occur at the moment of “netting” the transfers, when the Parties involved in the ETS would quantify the net mitigation outcome transferred between the ETS as a result of the linking.

Should ITMOs be denominated in a common metric?

There are two possible objectives of accounting for ITMO transfers:

1. Accounting for the mitigation impact of transfers as accurately as possible
2. Facilitating accounting for the achievement of NDCs in the broadest way possible

Imposing tCO_2e as a single and common metric for ITMOs would ensure comparability of traded mitigation outcomes in terms of their mitigation impact and their contribution to the achievement of Paris Agreement mitigation objectives. It would also make it easier to compile and compare ITMO transfers across implemented cooperative approaches, if the mitigation impact is calculated using the same global warming potentials, which will be the case at least from the second round of NDCs onwards (Schneider et al. 2017).

Allowing for transfers in different metrics that are used in countries’ NDCs would enable countries with NDC targets in non-GHG terms to engage in cooperative approaches without clarifying what their NDC means in GHG terms and could thereby facilitate the implementation of –for instance- accounting for regional renewable energy trading schemes. If both transferring and acquiring Party use the same indicator for accounting for their NDC targets (for instance installed capacity for generation of renewable energy) accounting for trading of outcomes denominated in this indicator can be very straightforward.

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However, in case non-GHG metrics are traded, the impact of the transferred mitigation outcome in terms of mitigation impact may not necessarily correspond. One *MWh* of renewable electricity in one country could lead to higher or lower emission reductions if accounted for in another country – given differences in the grid emissions factor of the respective countries (Schneider et al. 2017). To ensure accounting has high environmental integrity, there are two theoretical options:

- a) Converting non-GHG mitigation targets into corresponding GHG emission targets and then trading ITMOs denominated in tCO₂e; or
- b) Converting the corresponding adjustments so that they are consistent with the metrics of the two mitigation targets and, at the same time, correspond to the same mitigation outcome. However, this would be highly improbable as both countries would have the same emission factor for the parameter used for ITMOs.

Given that the second approach would only work in extremely unlikely cases, a third, pragmatic approach would be to require conservative conversion factors. This would then result in corresponding adjustments that correspond in terms of their mitigation impact. The key question here would be who would exercise oversight on the robustness of the conversion? The Article 6 technical expert review, the UNFCCC Secretariat or the Parties themselves?

3 What are Corresponding Adjustments?

Parties are to make a corresponding adjustment (CA) when transferring ITMOs for national emissions and removals covered by their NDC, to account for these transfers and ensure the avoidance of double counting (paragraph 36, Decision 1/CP.21).

Several questions arise in the operationalization of the concept:

- In which metric are CAs to be made – CO₂e or other metrics as well?
- Against what parameter should the CA be done – against the NDC target or the NDC covered emissions as per the inventory?
- How can correspondence of the adjustment be assured?
- When do CAs have to be performed? Do they have to be undertaken by both Parties at the same time?

These questions are discussed below in light of the conceptual appropriateness of the proposed solutions as well as the current state of negotiations.

3.1 Metric of Corresponding Adjustments

While the discussion whether ITMOs are defined in tCO₂e vs. other metrics is a crunch issue in the Article 6 negotiation, the metric of CAs receives far less attention. Usually it is just assumed that CAs will be done in the metric in which ITMOs are denominated. Thus, the metric of CAs has **neither been defined in the Paris Agreement** nor is it explicitly addressed in the draft texts. However, the draft Article 6.2 decision text hints at the possibility that CAs could be made in a metric other than t CO₂e by requesting the SBSTA to elaborate *how corresponding adjustments may be applied [in*

metrics other than CO2 equivalent determined by participating Parties][to all metrics of participating Parties' nationally determined contributions (NDCs)] (paragraph 4b, Draft CMA decision on guidance on cooperative approaches referred to in Article 6.2, v.2 from 26 June 2019, SBSTA 50).

If ITMOs can be defined in metrics other than t CO₂e, it would be consistent for CAs to also be made in such metrics. As CAs are however a dependent variable, subject to the preceding ITMO transaction and the way in which NDC progress is tracked in each country, it makes sense to determine the metric of the CA not in and by itself but subject to:

- The metric of the ITMO being transferred, and/or
- The metric used for tracking and reporting progress towards achievement of the NDC

One could argue that **the leading parameter for determining in which metric CAs should be made is the metric in which progress is reported towards implementation and achievement of a country's NDC** because of the primary importance of the NDCs and the country's own accounting methodology.

According to the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, **each Party shall identify the indicator(s) that it has selected to track progress towards the implementation and achievement of its NDC under Article 4.** Indicators shall be relevant to a Party's NDC under Article 4, may be either qualitative or quantitative and can include, for example, net GHG emissions and removals, percentage reduction of GHG intensity, relevant qualitative indicators for a specific policy or measure, mitigation co-benefits of adaptation actions and/or economic diversification plans or other (e.g. hectares of reforestation, percentage of renewable energy use or production, carbon neutrality, share of non-fossil fuel in primary energy consumption and non-GHG related indicators) (18/CMA.1, paragraphs 65-66).

Example:

Country 1 aims at reducing energy related emissions by 5% compared to BAU emissions at the end of the NDC period. The indicators used to track progress are t CO₂e emissions per year from energy consumption as well as GDP and population growth.

Country 2 has a target to enhance access to energy across the country using sustainable sources. It adopts a number of indicators tracking the implementation of national goals (e.g. installation of 50,000 household biogas digesters) as well as indicators tracking yearly CO₂ emissions of each sector included in its NDC.

Both countries wish to engage in a cooperative approach as a seller. Country 1 is offered financial support from a buying country to switch from coal to natural gas in its electric utilities and country 2 increases its dissemination of household biogas digesters through the support. How would both

countries perform a CA?

The case of country 1 may be straightforward by adding ITMOs that are transferred to its yearly indicator of emissions from the energy sector. Country 2, however, could either perform a CA by deducting the biogas digesters implemented through the support from the total number of biogas digesters implemented in the country, or it could add the CO₂ emissions transferred to its yearly CO₂ emissions. In the latter case host countries tracking their NDC implementation would have to decide whether emissions should be added to the energy sector (given that biogas digesters are an energy related intervention) or the land use sector (as emission reductions come from reduced use of firewood).

Other than the example cited above where two countries trade ITMOs in a different metric (e.g. MWh) but CO₂ emission reductions do not correspond due to different underlying grid emission factors, the fact that countries perform their *accounting* in different metrics may not per se constitute a problem. From the same transaction, the selling country could for example deduct the number of biogas projects supported through the cooperation from the total number of biogas digesters installed, not counting these its NDC achievement, while the buying country could add the associated emission reductions. Given that each biogas digester installed could be converted into an emission reduction value, this is readily feasible and as long as the selling country does not also claim the CO₂ emission reductions for its NDC achievement there is no double counting.

The key political question however still remains whether the participation in markets requires countries to adopt an emissions-based reporting to track progress towards their NDCs or whether countries' prerogative to choose NDC indicators takes precedence over the accounting of ITMOs.

3.2 Parameter to which corresponding adjustments are applied

This leads to the question of what is the basis for accounting, i.e. what parameters are CAs to be performed against. It seems that the main options considered are either an emissions-based accounting or an NDC-target based accounting, however, these two options are not clearly expressed in the Article 6.2 draft text.

The Article 6.2 draft guidance lists instead the following options:

- Reported NDC-covered emissions, derived from the country's national inventory report (for ITMOs measured in tCO₂e)
- A budget basis, based on the quantification of the greenhouse gas emissions level corresponding to the country's NDC
- A starting point of zero / buffer registry (for ITMOs in metrics determined by Parties [and for ITMOs measured in tCO₂e])

Conceptually, the reported NDC-covered emissions derived from a country's national inventory report appears straightforward. However, it bears the question of how this would fit with a country's own progress reporting if indicators are defined in non-CO₂ metrics. Other conceptual difficulties include:

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- **Emission reductions achieved through a cooperative approach may not always show up in the inventory** because of the method of calculation. For some emission sources, in particular non-CO2 emissions, simple Tier 1 methods are not sufficient to ensure that the emission reductions are captured in the inventory. If, for example, national emissions are estimated from a sector using IPCC tier 1 methods based on default values, emission reductions achieved in reality will not be captured. Adding ITMOs to the reported emissions without having a corresponding reduction in emissions to report makes the achievement of the country's NDC more difficult.
- In some situations, it is **not clear how to allocate CAs to a sector**. Examples include the above biogas digester case – an energy sector cooperation with emission reductions achieved in the land use sector. Other examples include Article 6 cooperation in sectors or with regard to gases that are not covered by the country's NDC (see below). It may be that in the structured summaries CAs only have to be applied to the NDC covered emissions as a whole and not differentiated by sector. Nevertheless it will be important for host countries to know which sector is contributing how many emissions.

The **budget-based reporting**, which in the style of the Kyoto Protocol translates countries' NDC targets into a budget of allowances, is often described as mathematically comparable to the emissions-based approach but seen as less conservative for not being grounded in real numbers. Parties have expressed reservations against the approach for fear of creating hot air or implying a certain right to a budget while the combined NDC pledges fall short of meeting the Paris temperature goal. The conceptual difficulties listed above for the emissions-based reporting equally apply to the budget-based reporting.

The **buffer registry** or starting point of zero suggests a parallel bookkeeping throughout the NDC period between ITMOs being traded and the tracking of progress of the NDCs. Only at the end of the NDC period would the final tally be made and the net results of ITMOs transferred or acquired be added to or subtracted from the NDC pledges. How the final accounting would take place is not pre-determined, leaving the door open for an accounting made in metrics other than CO2. It would be logical to link this to the NDC parameters; however, this is at best implicitly stated in the proposal by referring to other metrics. The proposal of a buffer registry may also refer to the infrastructure needed to track different metrics rather than a method of accounting and in that case perhaps rather relate to the functionalities provided by the central accounting and reporting platform.

While the basis of accounting is an open issue in the Article 6.2 negotiations, para 77d of decision 18/CMA.1 on the enhanced transparency framework (ETF) defines an emissions balance as the basis for corresponding adjustments. During SBSTA 50, the question of the status of para 77d resulted in a hold-up of the negotiations and a clarification by the SBSTA chair that further negotiations regarding details of ITMO accounting under the ETF will take a back seat until Article 6 has considered the issue. As per the current wording of para 77d, Parties that decide to participate in the cooperative approaches under Article 6 or authorize the use of ITMOs for purposes beyond

their NDC achievement, would have to follow Paragraph 77(d) and provide information that will feed into the transparency framework.

In doing so, Parties would have to report an emissions balance that reflects the level of emissions and removals covered by their NDCs and adjusted using corresponding adjustments. This means, Parties would have to make an addition for ITMOs first-transferred/transferred and a subtraction for ITMOs used/acquired.

Article 13 Modalities, procedures and guidelines; Paragraph 77. (d).¹

77. Each Party shall provide the information referred to in paragraphs 65–76 above in a structured summary to track progress made in implementing and achieving its NDC under Article 4, including:

(d) Each Party that participates in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards an NDC under Article 4, or authorizes the use of mitigation outcomes for international mitigation purposes other than achievement of its NDC, shall also provide the following information in the structured summary consistently with relevant decisions adopted by the CMA on Article 6:

- i. The annual level of anthropogenic emissions by sources and removals by sinks covered by the NDC on an annual basis reported biennially;*
- ii. An emissions balance reflecting the level of anthropogenic emissions by sources and removals by sinks covered by its NDC adjusted on the basis of corresponding adjustments undertaken by effecting an addition for internationally transferred mitigation outcomes first-transferred/transferred and a subtraction for internationally transferred mitigation outcomes used/acquired, consistent with decisions adopted by the CMA on Article 6;*
- iii. Any other information consistent with decisions adopted by the CMA on reporting under Article 6;*
- iv. Information on how each cooperative approach promotes sustainable development; and ensures environmental integrity and transparency, including in governance; and applies robust accounting to ensure inter alia the avoidance of double counting, consistent with decisions adopted by the CMA on Article 6.*

3.3 Timing and triggers of corresponding adjustments

Parties shall account for their NDCs in biennial transparency reports (BTR), including through a structured summary consistent with the guidance under the ETF (4/CMA.1, paragraph 17). While the guidance is mandatory for the second and subsequent NDC periods, its application to the first NDC period is voluntary (1/CP.21, paragraph 32).

Accounting therefore takes place on a biennial basis, even though many NDC pledges contain single year targets and only relate to the achievement of a certain reduction in emissions at the end of the NDC period. According to paragraph 77 (d) this includes the accounting of ITMOs which would have

¹ Article 13, Annex on Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement; III. Information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement; C. Information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4 of the Paris Agreement; Paragraph 77. (d).

https://unfccc.int/sites/default/files/resource/cma2018_3_add2_new_advance.pdf#page=18

to be reported biennially.

On this basis, a key question that arises is whether corresponding adjustments are related to the achievement of Parties' NDC pledges or to the regular tracking of Parties' progress toward their NDCs – or perhaps to both? In other words, are corresponding adjustments intended to occur at the end of Parties' implementation periods or continuously throughout.

The Article 6 draft text is not very clear in answering this question. However, based on the text, there is an indication that corresponding adjustments indeed relate to both "implementation" and "achievement". The implementation is for instance captured through the BTRs and in accordance with Paragraph 77(d) of the ETF, whereas the various accounting methods presented in the text seem to relate to the achievement. This dual purpose though, adds to the complexity of understanding when the actual accounting of corresponding adjustments would take place.

Figure 1 attempts to provide an overall depiction of the process of accounting as it is envisaged in the Article 6.2 text. It also tries to clarify and showcase the difference between the tracking and recording of ITMOs and the reporting of corresponding adjustments.

As corresponding adjustments need to be made against an accounting basis, it seems that this can only happen in Parties' reporting. This would refer to the reporting of regular information under Article 6 and in the BTRs, however not the initial reporting under Article 6, which only captures eligibility requirements and the approach to accounting. The timing of corresponding adjustments therefore would depend on the timeline of these reports:

- **Initial reporting:** Parties submit the initial report at the **outset** of the NDC implementation period, or prior to or at the time of first transfer or acquisition of ITMOs. The information is submitted to the Secretariat to be reviewed and recorded in the Article 6 database as well as submitted to the Article 6 technical expert review.
- **Regular information:** Parties submit the regular information **annually** to the Secretariat to be reviewed and recorded in the Article 6 database as well as to the Article 6 technical expert review.
- **Biennial Transparency Report:** Parties submit information on corresponding adjustments as part of their BTRs following the modalities, procedures and guidelines of the ETF (para 77(d), which is then reviewed by the Article 13 technical expert review.

This is different from tracking and recording the flow of ITMOs, which takes place in relation to the transfer and acquisition by Parties. The tracking and recording of ITMOs follows a different timeline and triggers from corresponding adjustments and includes a whole spectrum of things:

- Tracking and recording work together to ensure the whereabouts of the ITMOs and status of the transfer
- Takes place in real-time at (first) transfer and acquisition of ITMOs
- The information is tracked and recorded in the Article 6 database and centralized accounting

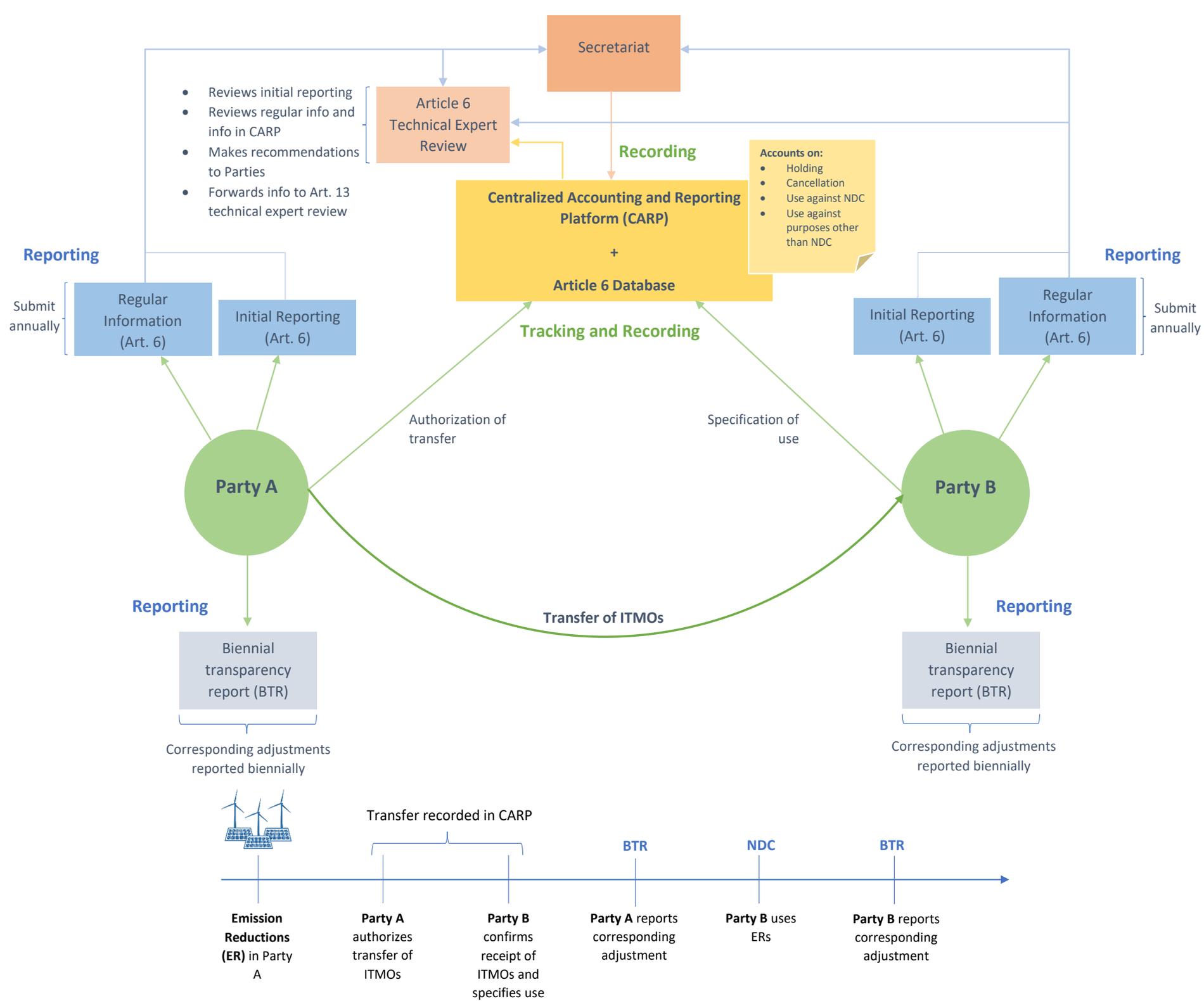
and reporting platform (CARP)

- The information tracked and recorded includes: the creation, (first) transfer, acquisition, holding, cancellation, and use of ITMOs

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Figure 1 – Overview of Timing and Triggers of Corresponding Adjustments



4 Methods of accounting in light of different NDC timeframes

NDCs encompass a wide range of target types and timeframes as nationally determined pledges. While most NDCs have a single-year target, only few have opted for a multi-year target whereby pledges are made for timeframes throughout the NDC implementation period. Article 6.2 requires Parties to safeguard environmental integrity and avoid double counting, which in the light of these differing NDC targets raises some complexities.

The Article 6.2 draft negotiation text puts forth several accounting methods that Parties could make use of: target year, cumulative, vintage, averaging, and multi-year trajectory methods. Parties are to apply their chosen approach consistently throughout their NDC implementation period. Some Parties also suggested the introduction of default options should a country not select an approach – for multi-year targets the proposed default is a multiyear trajectory method and for single-year targets it is the averaging method (Paragraph 26 Option C).

However, with the array of NDCs and target timeframes, not all accounting approaches are compatible with one another. Especially for NDCs with a single year target, it is problematic if ITMOs are transacted prior to the target year but not considered in the accounting of the target year. If the acquiring Party would at the same time reduce its mitigation effort by the acquired amount, this could potentially lead to an increase in global emissions. The accounting methods presented in Article 6.2 are essentially reactions to this perceived risk and also specify which methods can be used in combination with each other.

Definition of multi-year target

- Used in the draft Article 6.2 text
- Has no formal definition
- Seems to relate to the budget approach under the Kyoto era, which was conducive to emissions trading
- Interesting to note that there is basically no country that has a multi-year target in the style of the Kyoto Protocol
- What can be observed are a few NDCs that have more than one target year – however, this is not for every year of the NDC period

4.1 Cumulative accounting: Option for single-year and multi-year NDCs

The cumulative accounting method refers to effecting corresponding adjustments at the end of the NDC period for the total volume of ITMOs transferred and used or acquired over the NDC implementation period. Parties would adjust the cumulative total of ITMOs transferred in their NDC implementation period and apply corresponding adjustments in the target period equalling the total net amount of ITMOs traded in the NDC period.

Figure 2: Cumulative corresponding adjustment by buyer country



Source: authors

Figure 3: Cumulative corresponding adjustment by seller country



Source: authors

Advantages: The method accurately reflects all transfers during the NDC period and not just the target year. Especially the seller accounts for all pre-target year ITMO vintages.

Challenges: A cumulative adjustment of multiple years for one target year results in less ITMO generation activity. The acquiring Party would need to buy less to meet its NDC and the seller Party might be discouraged from trading large amounts of ITMOs as it may not achieve its own NDC when adjusting for the large cumulative amount of ITMOs. Less representative overview of Parties' NDC achievements and not representative of activities over the whole period.

4.2 Averaging method: Option for single-year NDCs

The averaging approach requires Parties to calculate the average annual amount of ITMOs transferred over the NDC implementation period, whereby the corresponding adjustment is applied according to this average amount for the NDC year. This is done by dividing the total net ITMOs traded by the number of years in the NDC period. In the negotiation text, this would be the default method for Parties with single year targets that have not chosen a method.

Figure 4: Averaging corresponding adjustments by buyer country



Source: authors

Figure 5: Averaging corresponding adjustments by seller country



Source: authors

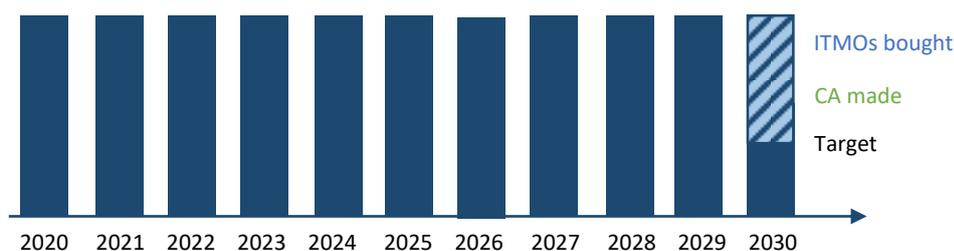
Advantages: Averaging could raise ambition for both trading Parties, as the buying Party would need to buy more ITMOs than needed to achieve its NDC in the target year because it can only apply 1/5th or 1/10th of bought ITMOs to its NDC target/budget, meaning there is higher demand.

Challenges: Averaging could lead to delayed engagement in carbon markets if it only becomes clear at the end how much is needed. Also, how much a country needs to buy (or can sell) over the entire period depends on the mitigation gap or overachievement of a single year. This is very uncertain, as emissions in 2030 may be impacted by temporary occurrences such as weather patterns.

4.3 Target-year method: Option for single-year NDCs

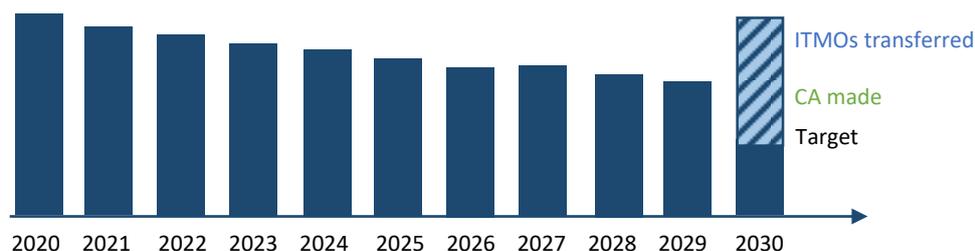
If Parties choose to apply the target-year method, they may only transfer and/or acquire ITMOs from the same vintage as the Party's target year and effect corresponding adjustments in that year only. This means that Parties with single-year NDCs would calculate the total net flow of ITMOs in the given target year and apply corresponding adjustments during their final NDC accounting.

Figure 6: Single year corresponding adjustments by buyer country



Source: authors

Figure 7: Single year corresponding adjustments by seller country



Source: authors

Advantages: relatively simple to calculate the net corresponding adjustments, as adjustments are made in the same year.

Challenges: This method does not allow for the trade of ITMOs in non-target years and therefore is not particularly conducive towards to a market approach as there would not be any demand for ITMOs of vintages other than that of the target year. Trading Parties also need to have the same NDC target year. As well, this approach favours the buyer as the amount that needs to be purchased is limited to the difference during the target year only. The seller Party then would have to overachieve its target in the final year, in order to sell ITMOs and still achieve its own NDC pledge. The method does not give incentives for working towards the NDC target but the buyer could pursue a one-off fix through purchasing credits when not meeting the target.

4.4 By vintage (yearly): Option for single-year and multi-year NDCs

This method refers to effecting corresponding adjustments in each year of the NDC implementation period.

Figure 8: Yearly corresponding adjustments by buyer country



Source: authors

Figure 9: Yearly corresponding adjustments by seller country



Advantages: Highly suitable for multi-year target buyers. Ideal for carbon markets to work.

Challenges: This method is complicated in the case of single-year NDC targets. Even though a country has adopted a single year target, it would have to act as if it had multiple targets and perform adjustments every year. It is however unclear, what the meaning of the adjusted emissions is if a country does not have a target for a particular year. It is also unclear, whether only the adjustments made in the target year count or whether the yearly balances need to be taken into account. It seems that without definition of multi-year targets that are derived from the single year, as done in the multi-year trajectory described below, this approach has little meaning. If only what happens in the target year counts this approach could lead to a net increase in emissions. If the seller country sells only in pre-target years and the buyer country uses the amount only in the target year, the adjustments in the target year would not correspond.

4.5 Multi-year trajectory: Option for single-year and multi-year NDCs

Using the multi-year trajectory means that Parties need to calculate a multi-year emissions trajectory for their NDC implementation period that is consistent with the NDC and the trajectory caps emissions for each year in the NDC period. Where emissions are below or above the trajectory, emission reductions could be sold or would have to be purchased to stay on target for every year of the NDC period. Corresponding adjustments are then applied annually. According to the current negotiation text, this would be the default method for Parties with multi-year targets that do not choose a method. In Figures 10 and 11 we first show the case of a linear trajectory from the NDC

starting year to the target year.

Figure 10: Corresponding adjustments against a multi-year trajectory of buyer country



Source: Authors

Figure 11: Corresponding adjustments against a multi-year trajectory of seller country



Source: Authors

Advantages: Allows for transparency from the start regarding the amount of ITMOs Parties can transfer or must purchase to meet or stay below their annual emissions caps in the emissions trajectory.

Challenges: This method requires Parties to translate their NDC targets into multi-year trajectories, which may be technically and/or politically challenging.

Compared to the averaging approach, this method could lead to smaller or bigger purchases of the buyer. If the buyer misses the target in the final year by a larger margin compared to the deviation in earlier years, it will have to buy a greater amount under the averaging approach because the final margin has to be multiplied by the total years of the NDC period. If the buyer was on target in the final year but not in the years before than the multi-year trajectory approach would lead to greater purchases.

There are other variants of the multi-year trajectory method taking into account the likely shape of national emissions trajectories under single year targets. Trajectories could also be defined as convex (assuming emissions will first go up before dropping at the end of the period) or concave (first dropping, then rising again). This opens up the possibility for gaming. In case the buyer adopts a

convex emission trajectory as a basis, meaning that emissions will first go up before dropping at the end of the period, but actual emission trends are linearly declining, it will be on track most of the time and will only have to purchase emission reductions at the very end. This would allow the buying party to purchase fewer emission reductions under the same single year target than if a steady decline trajectory was taken as a basis.

4.6 Landing on an appropriate method

As outlined above, it is evident that each accounting method presents different advantages and disadvantages that Parties need to consider when choosing an approach. Parties need to also keep in mind the following key aspects:

- The chosen accounting method is to be applied to the entire NDC implementation period
- Parties wanting to cooperate and trade ITMOs must have the same accounting method
- Parties wanting to cooperate and trade ITMOs need to also have the same target year(s)

On this basis, the linear multi-year trajectory seems to be the overall frontrunner among the various accounting approaches, as it requires Parties to create multiple target throughout the NDC implementation period and is close to the spirit of continuously increasing ambition. It therefore reacts closest to the two-fold purpose of accounting: tracking implementation of progress and measuring achievement. A second runner-up is the averaging method, as it is fairly easy to calculate and capture ITMOs transferred throughout the NDC implementation period. However, averaging accounting takes place ex-post, and is more dependent on the duration of the covered period compared to the multi-year trajectory.

The cumulative approach makes most sense for Parties with a budget approach, however, no Party has currently submitted an NDC based on a budget approach. It does not necessarily make sense for Parties with a single-year target. The approach favours the buyer and leaves the seller with having to considerably overachieve its NDC in the target year to be able to compensate for ITMOs sold throughout. The target year method similarly favours the buyer and does not give a continuous price signal for investors. The approach also gives no incentives for continuous progression and offers a one-off fix for buyers in case the target is missed. The yearly/vintage approach, is in essence similar to the target year approach when applied to a single year NDC, as it is unclear if the final NDC accounting would cover all the ITMOs traded throughout the NDC implementation period, therefore it might pose risks for environmental integrity.

5 Accounting for ITMOs inside vs. outside NDCs

When considering accounting for ITMOs inside versus outside NDCs, the key question that arises is whether corresponding adjustments are needed for emission reductions that are not covered by an NDC.

5.1 Defining “outside” the NDC

In order to understand this issue better and find a common understanding, it is important to first define what ‘outside the NDC’ or ‘not covered’ means. **‘Not covered by the NDC’ can refer to sectors or gases that are not considered in an NDC or related to the NDC targets.**

While the main focus here is on this interpretation, another definition being proposed by some, refers to ‘outside the NDC’ as any action going beyond the actions required to meet the NDC targets. This would include sectors and gases not mentioned in the NDC, but also any mitigation activities that go beyond what would happen in the context of the NDC implementation². Some argue therefore that in the case that mitigation from an activity under Article 6 is exceeding NDC-related mitigation is proven under international oversight (i.e. the Article 6.4 mechanism), there is no need for applying corresponding adjustments. However, in this case a significant risk of double counting would persist. Projects implemented in sectors subject to an NDC target would reduce inventory emissions compared to what they would have otherwise been.

If left unaccounted for, it will be very difficult to ensure these emission reductions were not accounted towards the sectoral or economy-wide NDC target.³ Therefore it is argued that corresponding adjustments should apply to any activities in sectors mentioned in the NDC, regardless of whether they exceed the mitigation of the NDC. This should be ensured for all Article 6 activities in any case to safeguard environmental integrity of international market-based approaches.

5.2 Reasons for accounting for outside NDC transfers

A second precondition to finding a common understanding on this issue is to define the objective of accounting for transfers from ‘outside’ the NDC. From a technical perspective, a transfer from a mitigation activity ‘outside’ the host Parties’ NDC would not lead to double counting as long as:

1. there is no interim update of the NDC and the activity is “brought into the NDC” after mitigation outcomes are transferred
2. the crediting period does not exceed the NDC implementation period, at which point projects might transition from outside to inside the NDC in the context of ambition raising.⁴

Around 12-14% of global emissions by 2030 are currently “not covered” by NDCs, meaning their sectors or gases are not mentioned in the NDC.⁵ An analysis by the Environmental Defense Fund (EDF) concluded that circa 6.5 % of annual global emissions stem from sectors or gases not included in the NDC. This shows that allowing for transfers from mitigation achieved “outside” the NDC could

² Hood (2019): Completing the Paris ‘Rulebook’: Key Article 6 issues. C2ES, Center for Climate and Energy Solutions.

³ Ibid.

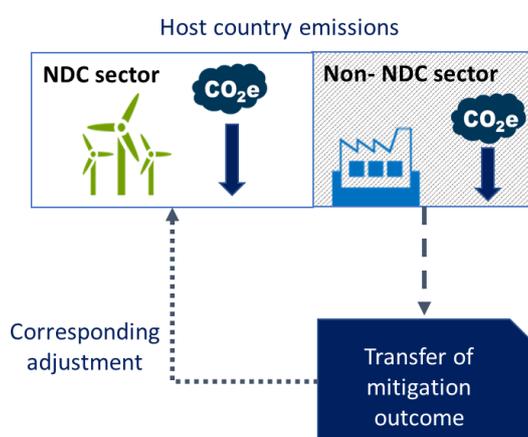
⁴ Hood (2019): Completing the Paris ‘Rulebook’: Key Article 6 issues. C2ES, Center for Climate and Energy Solutions.

⁵ Spalding-Fecher (2017): Article 6.4 crediting outside of NDC commitments under the Paris Agreement: issues and options. Policy Briefing, Carbon Limits.

harness a huge mitigation potential that would otherwise be lost or at least only taken up much later. Especially in countries where due to poor data availability and lack of understanding of mitigation potential sectors are excluded from NDC commitments, allowing crediting could facilitate their inclusion in future NDC cycles, as could the reduction of mitigation costs that are driven by increased experiences and economies of scale.⁶

In any case, applying a corresponding adjustment to the NDC if the mitigation outcome was achieved outside of it, would be a strong deterrent to pursue any market-based mitigation action outside- as it would make achieving the host Parties' NDC more difficult (see Figure 12).

Figure 12: Applying corresponding adjustments to transfers for mitigation outcomes outside of the NDC



Source: based on Michaelowa et al. 2019, p. 15

Not imposing corresponding adjustments also bears risks. If there is no accounting for these transfers, this could disincentivize Parties to expand their NDC coverage (and therefore ambition) over time and thus contradict the overall thrust of the Paris Agreement.⁷

In addition, some fear that in the absence of detailed international guidance, mitigation outcomes achieved outside of NDCs would be subject to less scrutiny and quality assurance from the host country.⁸ This is based on the assumption that for any mitigation activity covered by the NDCs there would be a 'self-policing' effect, as the host country wants to protect itself from overselling its emission reductions. However, the 'self-policing' effect is only valid in countries with ambitious NDC targets.⁹

Another issue is that it is often difficult to determine what mitigation is to be considered inside or outside the NDC, in particular for project activities that affect multiple emission sources. Many NDCs

⁶ Ibid.

⁷ Hood (2019): Completing the Paris 'Rulebook': Key Article 6 issues. C2ES, Center for Climate and Energy Solutions.

⁸ Hood (2019): Completing the Paris 'Rulebook': Key Article 6 issues. C2ES, Center for Climate and Energy Solutions.

⁹ Spalding-Fecher (2017): Article 6.4 crediting outside of NDC commitments under the Paris Agreement: issues and options. Policy Briefing, Carbon Limits.

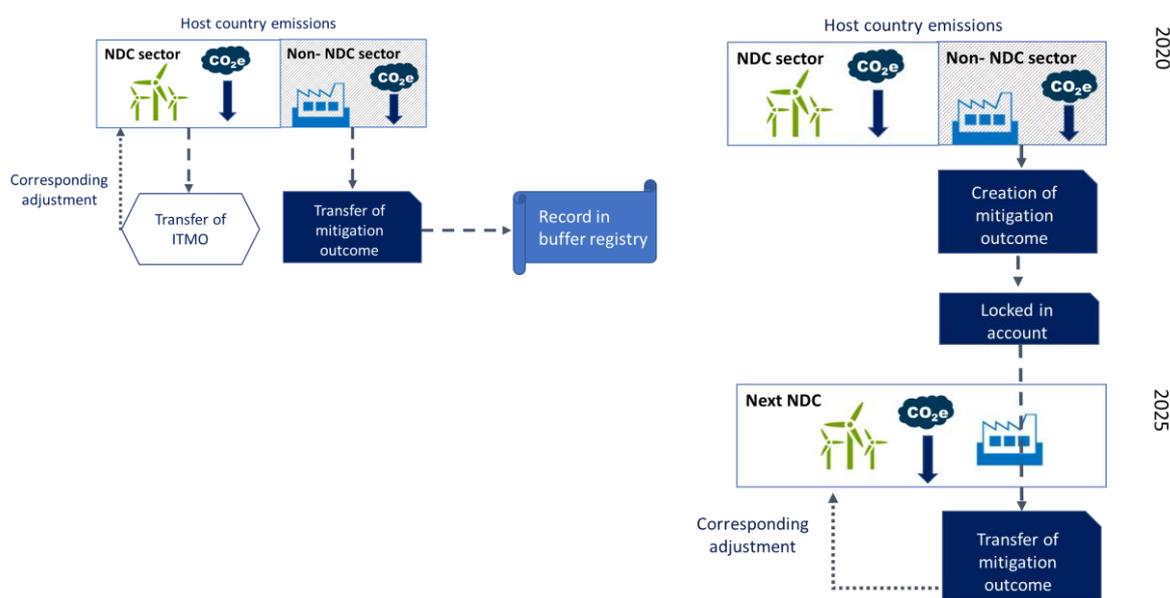
lack clarity regarding sectoral boundaries and guidance on how countries should describe and clarify the scope of NDCs will only be mandatory for second and subsequent NDCs (Schneider et al. 2019).

a. Options to operationalize corresponding adjustments for outside NDC transfers

There are several ways of how accounting can be ensured and environmental integrity safeguarded for transfers outside the NDC, even if corresponding adjustments are not immediately undertaken:

1. Corresponding adjustments to transfers from outside the NDC could be applicable from the second NDC implementation period onwards. Countries have the opportunity to use Article 6 in their first NDC implementation period to build capacities to expand the NDC scope.
2. Mitigation outcomes from outside the NDC could be recorded in a separate registry and corresponding adjustments be applied if the NDC is updated. When reporting, Parties would differentiate between mitigation outcomes transferred from inside or outside the NDC. This would ensure transparency on the order of magnitude of mitigation mobilized outside and allow taking stock of the impacts of Article 6, for instance in the context of the Global Stocktake.¹⁰

Figure 13: Recording transfers of mitigation outcomes from outside of the NDC in a buffer registry or locked account



Source: based on Michaelowa et al. 2019, p. 15 - 16

3. The crediting of mitigation outcomes outside the NDC could be restricted to the Article 6.4 mechanism, where there is international oversight on the quality and additionality of the credits, as well as their relationship to the NDC.¹¹
4. In addition, credits issued could be “locked” for transfer until the NDC of the host country includes the respective sector or gas. This would allow countries to go ahead with mitigation activities and build capacities in the respective sectors, while transfer would only be possible when corresponding adjustments can be applied properly. However, the attractiveness of

¹⁰ (Müller and Michaelowa 2019): How to operationalize accounting under Article 6 market mechanisms of the Paris Agreement, in: *Climate Policy*, 19, p. 812-819.

¹¹ Spalding-Fecher 2017): Article 6.4 crediting outside of NDC commitments under the Paris Agreement: issues and options. Policy Briefing, Carbon Limits.

investing in activities that generate “locked” credits would be reduced in line with the discount rate applied by the investor which may be increased by distrust that the credit will ever be “unlocked”.

Similar policy recommendations are also given by Lambert Schneider et al. in “Outside in? Using International carbon markets for mitigation not covered by nationally determined contributions (NDCs) under the Paris Agreement”¹².

5.3 Accounting for non-NDC ITMOs (e.g. CORSIA and voluntary markets)

When looking at the accounting of ITMOs not used against the NDC (e.g. CORSIA and voluntary markets), the key question is whether the Article 6 guidance can apply to ITMOs not used towards NDCs and if corresponding adjustments are required in this case.

The Article 6.2 guidance specifically refers to the accounting of ITMOs used towards NDCs. This is interpreted by some to have as consequence that ITMOs only “exist” in the Paris Agreement context and does not apply to other types of carbon credits traded across borders. Others stress that the principle of ensuring robust accounting not only refers to the progress in implementing NDCs but to the overall progress towards implementing the Paris Agreement objectives.¹³ Here, the actions of non-Party stakeholders are specifically recognised by the Paris Agreement and its accompanying decision. In addition, international market-based mechanisms such as the CDM have also always been used for other purposes than UNFCCC mitigation target compliance.

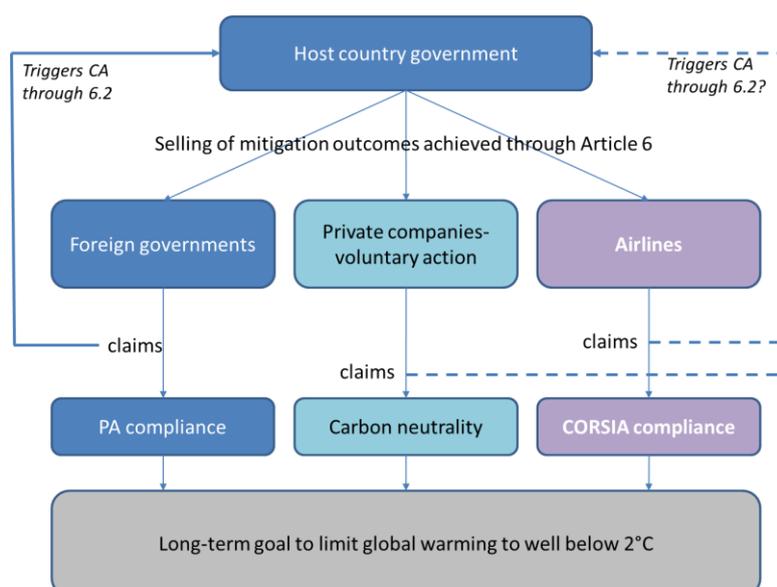
The reporting requirements on Article 6, as laid out by paragraph 77d of CMA decision 18/CMA.1 already include reporting of information on transfers if the Party authorized the use of mitigation outcomes for international mitigation purposes other than the achievement of NDCs. Paragraph 77d is not entirely clear with regard to the need to apply corresponding adjustments. The chapeau includes a reference to international mitigation purposes - which suggests that this should be accounted for - whereas the sub-paragraphs do not specifically cover such purposes. This question is still considered under Article 6.

In the current context, “other uses” mainly refers to two other international mitigation purposes: The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) of ICAO and the voluntary carbon market, where companies and individuals purchase offsets to compensate their emissions. Some Parties stress that double counting can only occur between Parties to the Paris Agreement and relate to double counting in the context of NDCs. However, a widely accepted definition of double counting includes “double claiming” of emission reductions. **The risk to address through accounting here would not be double counting of emission reductions towards NDCs, because the mitigation outcome would be accounted towards different mitigation objectives in different “systems”, but the double claiming of emission reductions by companies and states, which would complicate assessing the global mitigation effects achieved by carbon markets.**

¹² Schneider, Lambert, Stephanie La Hoz Theuer, Andrew Howard, Kelley Kizzier & Martin Cames (2019) Outside in? Using international carbon markets for mitigation not covered by nationally determined contributions (NDCs) under the Paris Agreement. Climate Policy, ISSN: 1752-7457.

¹³ Ibid.

Figure 14: Transfers of mitigation outcomes towards different international mitigation purposes



Source: based on Michaelowa et al. 2019, p. 18

Avoiding double claiming between NDCs and CORSIA is of particular relevance given CORSIA’s large potential demand of 1.6-3.7 Gt CO₂e between 2021-2035.¹⁴ In addition, the ICAO council itself demands that units used under CORSIA must be counted only towards this specific mitigation obligation. However, ICAO has communicated it will align with Article 6 rules for accounting.

Currently, non-state actors in the voluntary carbon market are facing a high level of uncertainty.¹⁵ These actors have developed mainly two dominant coping strategies: (1) use the carbon market for voluntary and non-party offsetting beyond NDCs and (2) promote their standards in the context of results-based financing for emission reductions and sustainable development. Most voluntary carbon market actors identify emissions accounting as a major challenge, as being in line with the Paris Agreement is central to their claim of environmental integrity.

View of voluntary markets

An alternative view from the voluntary markets is that voluntary carbon credits may be counted by the host country where the emission reductions occurred and that double counting is avoided as long as only one country claims the emission reductions, whereas there is no issue if a non-governmental entity claims the same emission reductions. Emission reductions would be reported in the national inventory and the retiring organization can claim they have contributed to the Paris Agreement goals. Leading actors in the voluntary market therefore propose to have projects in the voluntary carbon not subject to corresponding adjustments as there would be no compensation required in this instance.¹⁶ International standards should, however, provide safeguards against double counting, including double issuance or double use in the case mitigation outcomes are used for actual offsetting, as other actors in the voluntary carbon market nevertheless aim to sell

¹⁴ (Hood 2019).

¹⁵ (Lang et al. 2019).

¹⁶ See the Working Group Statement (Gold Standard, WWF, CDP, WRI, The Nature Conservancy, Carbon Market Watch, ICROA and others): Envisioning the voluntary carbon market post-2020. Available [here](#).

mitigation outcomes to offset emissions, in particular in the context of carbon neutrality efforts of individuals or companies.

From an accounting perspective, these are the options for negotiators, from the most lenient to most stringent, with regards to the avoidance of double claiming:

- 1. Strictly separate the PA regime from other international mitigation purposes:** ITMOs and Article 6.4ERs could only be used for the purpose of NDCs and neither be used nor claimed by non-Party stakeholders. Emission reductions that occur within a country due to other international mitigation activities can be accounted towards the respective countries' NDC. This would mean that the impact of different mitigation on the PA goals can only be assessed indirectly. Also, there would be a double claiming of mitigation outcomes across different regimes and schemes.
- 2. Separate the PA regime from other international mitigation purposes, while expanding reporting:** Parties would report if parts of their emission reductions were achieved due to the purchase of mitigation outcomes in the context of CORSIA or the voluntary carbon market, but no corresponding adjustment for these emission reductions would be undertaken. The impact of other mitigation schemes on Parties' NDCs could be assessed better, but this would not be a solution to address double claiming.
- 3. Implement corresponding adjustments regardless of the use of the ITMO:** Corresponding adjustments could be implemented at the moment of transfer, regardless of the ultimate use of the ITMO. This would impede any double claiming of mitigation outcomes between different regimes, as long as the other international mitigation regimes have the necessary modalities to ensure that mitigation outcomes used are not circulated further in the international market, i.e. through cancellation of units.
- 4. Restrict other uses of Article 6 mitigation outcomes to A6.4ERs** as here, the credits can be tracked within the mechanisms registry and cancelled by non-Party stakeholders if they want to use them towards other international mitigation outcomes. This would increase transparency and ensure that the same mitigation outcome would not be sold twice, on the voluntary market and transacted between governments. The accounting rules of the Article 6.4 mechanism would apply.

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