CLIMATE CHANGE
10/2026

Final report

Using Article 6 to raise climate ambition

Options for Germany to engage in cooperative approaches and identifying suitable mitigation activities

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publisher:
German Environment Agency

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Umwelt Bundesamt

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AA-Forschungsplan of the Federal Foreign Office

Project No. (FKZ) 3721 42 501 0
FB001547/ENG

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Imprint

Publisher
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Report completed in:
April 2024

Edited by:
Section V 2.6 Climate Protection Projects – Market Mechanisms UNFCCC
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DOI:
https://doi.org/10.60810/openumwelt-8300

ISSN 1862-4359

Dessau-Roßlau, January 2026

Abstract: Using Article 6 to raise climate ambition

The level of ambition of Parties' current Nationally Determined Contributions (NDCs) is insufficient to ensure that climate change remains within the internationally agreed limits of well below 2° C above pre-industrial levels and to keep the 1.5° C limit within reach. One way to close this ambition gap is through international cooperation. Article 6 of the Paris Agreement offers three avenues for Parties to collaborate voluntarily in the implementation of their NDCs (Art. 6.2, 6.4 and 6.8). This report explores how Article 6.2 could be used as a tool to raise climate ambition and summarizes the findings of the research project "International Market-Based Approaches for Raising Climate Ambition".

This report analyses how Germany could use Article 6.2 of the Paris Agreement by looking at the supply and demand side of cooperative approaches. It identifies different options for Germany to engage in cooperative approaches and concludes that the use of internationally transferred mitigation outcomes (ITMOs) for voluntary purposes has greater potential than the compliance options analyzed. With the subsequent focus on the supply side, a set of evaluation principles and criteria is developed that could guide the identification of potential partner countries and mitigation activities. The report then moves from the conceptual perspective to a more practical one: The actual interest of countries in using Article 6 is explored through an analysis of Parties' NDCs, while two case studies (South Africa and Indonesia) shed light on the practical applicability of the evaluation principles and criteria and the benefits and limitations of the approach.

Kurzbeschreibung: Die Nutzung von Art. 6 zur Steigerung der Ambition

Das Ambitionsniveau der derzeitigen national festgelegten Beiträge (NDC) der Vertragsparteien reicht nicht aus, um die Begrenzung des Klimawandel innerhalb der international vereinbarten Grenzen von deutlich unter 2° C über dem vorindustriellen Niveau sicherzustellen und die 1.5 °C-Obergrenze in Reichweite zu halten. Eine Möglichkeit für die Vertragsparteien, diese Ambitionslücke zu schließen, ist die internationale Zusammenarbeit. Artikel 6 des Pariser Abkommens bietet den Vertragsparteien drei Möglichkeiten zur freiwilligen Zusammenarbeit bei der Umsetzung ihrer NDCs (Art. 6.2, 6.4 und 6.8). Dieser Bericht untersucht, wie Artikel 6.2 als Instrument zur Steigerung der Klimaambition genutzt werden kann und fasst die Ergebnisse des Forschungsprojekts "Internationale marktbasierte Ansätze zur Steigerung der Klimaambition" zusammen.

Der Bericht untersucht, wie Deutschland Artikel 6.2 nutzen könnte und betrachtet dabei sowohl die Angebots- als auch die Nachfrageseite von Kooperativen Ansätzen. Es werden verschiedene Optionen für Deutschland aufgezeigt, sich an Kooperativen Ansätzen zu beteiligen. Dabei wird festgestellt, dass die Nutzung von international übertragenen Minderungsergebnissen (ITMOs) für freiwillige Zwecke ein größeres Potenzial aufweist als deren Nutzung zu Verpflichtungszwecken. Mit dem anschließenden Fokus auf die Angebotsseite werden Bewertungsprinzipien und Kriterien entwickelt, die bei der Identifizierung möglicher Partnerländer und Minderungsaktivitäten helfen könnten. Der Bericht geht anschließend von der konzeptionellen zu einer praktischen Perspektive über: Das tatsächliche Interesse der Länder an der Nutzung von Artikel 6 wird durch eine Analyse der NDCs der Vertragsparteien untersucht, während zwei Fallstudien (Südafrika und Indonesien) die praktische Anwendbarkeit der Bewertungsprinzipien und Kriterien sowie die Vorteile und Grenzen des Ansatzes beleuchten.

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List of abbreviations

Abbreviation	Explanation
AFOLU	Agriculture Forestry and Other Land Use
BAU	Business as usual
BMUV	German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
BMWK	German Federal Ministry for Economic Affairs and Climate Action
CA	Corresponding Adjustments
CAT	Climate Action Tracker
CDM	Kyoto Protocol's Clean Development Mechanism
CER	Certified Emission Reductions
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CO_2	Carbon dioxide
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
COP	Conference of the Parties
DFFE	Department of Forestry, Fisheries and the Environment
DIRCO	Department of International Relations and Cooperation
DMRE	Department of Mineral Resources and Energy
ETF	Enhanced Transparency Framework
EU	European Union
FCPF	Forest Carbon Partnership Facility
GHG	Greenhouse gas
GS	Gold-Standard
GTS	Green Transport Strategy
IKI	International Climate Initiative
ILO	International Labor Organization
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Plan
ITMO	Internationally transferred mitigation outcomes
JETP	Just Energy Transition Partnership
KliK	Swiss Foundation for Climate Protection and CO_2 Compensation
LDC	Least developed countries

Abbreviation	Explanation
LT-LEDS	Long-term low greenhouse gas emission development strategies
LULUCF	Regulation on land, land use change and forestry
MAC	Marginal Abatement Cost
MADD	Mitigation Activity Design Document
MIT	Mitigation
MO	Mitigation outcomes
MRV	Monitoring, Reporting and Verification
nETS	National Emissions Trading System
NDC	Nationally Determined Contributions (in Paris-Agreement)
NDC-P	NDC Partnership
NTCSA	National Transmission Company of South Africa
OECD	Organisation for Economic Cooperation and Development
OC	Over-crediting
OMGE	Overall mitigation in global emissions
PCC	Presidential Climate Commission
RE	Renewable energies
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RL	Reference emission level
RSA	Republic of South Africa
SADC	Southern African Development Community
SAPP	Southern African Power Pool
SD	Sustainable development
SDG	Sustainable development goals
SEA	Swedish Energy Agency
SOP	Share of Proceeds
UBA	Federal Environment Agency
uNDC	Unconditional NDC
UNFCCC	United Nations Framework Convention on Climate Change
VCM	Voluntary carbon market
VCS	Verified Carbon Standard

Summary

In order to limit the increase of the global mean temperature to well below 2 °C above pre-industrial levels and to maintain the 1.5 °C limit within reach, global greenhouse gas (GHG) emissions must be reduced drastically and rapidly. However, the ambition levels of Parties' current Nationally Determined Contributions (NDCs) are insufficient to ensure climate change stays within these internationally agreed limits.

One way for Parties to close this ambition gap is through international cooperation. Article 6 of the Paris Agreement offers three avenues for Parties to collaborate voluntarily in the implementation of their NDCs. Article 6.2 of the agreement introduces an accounting and reporting framework that allows Parties to participate in so called cooperative approaches. When engaging in cooperative approaches, Parties can generate mitigation outcomes (MOs) that can be transferred internationally as internationally transferred mitigation outcomes (ITMOs) and be used for various purposes. Article 6.4 establishes a crediting mechanism overseen by the United Nations Framework Convention on Climate Change (UNFCCC) that can be considered a successor of the Kyoto Protocol's Clean Development Mechanism (CDM). Once operational, the Article 6.4 mechanism will issue Article 6.4 Emission Reductions (A6.4ERs) that can be transferred internationally as ITMOs. While Article 6.2 and Article 6.4 are market-based mechanisms, a non-market approach has been introduced under Article 6.8 that does not involve any transfers of mitigation outcomes.

Market-based cooperation has always been one of the particularly contentious topics under the UNFCCC. The Article 6 text was one of the last issues to be agreed in the last night of the Conference of the Parties (COP) 21 in Paris (Marcu, 2016). And while Parties at COP 24 in Katowice in 2018 agreed on the functioning of most aspects of the Paris Agreement, the negotiations on the so-called Article 6 rulebook dragged on until COP 26 in Glasgow. The Article 6 rulebook lays out the functioning of voluntary cooperation in some detail while leaving some operational aspects open, that are subject to ongoing debate in the climate negotiations. Despite the fact that Parties at COP28 in Dubai were unable to agree on fundamental design aspects of cooperative approaches, Article 6.2 has already left the conceptual stage. Some industrialized country Parties have already moved forward by establishing bilateral agreements with developing countries in order to generate mitigation outcomes (MOs), transfer them as ITMOs and have them counted towards their NDC. This culminated in the conclusion of the first transfer of ITMOs for NDC compliance between Thailand and Switzerland in January 2024 (Carbon Pulse, 2024). If designed and implemented carefully, such bilateral market-based cooperation could allow participating Parties to increase their ambition levels.

This report summarizes the findings of the research project "International Market-Based Approaches for Raising Climate Ambition". The project was commissioned by the Federal Environment Agency (Umweltbundesamt, UBA) and conducted jointly by Wuppertal Institute and the GFA Consulting Group. The project explores how Germany could make use of Article 6.2 as an acquiring Party by considering the supply and the demand side of cooperative approaches.

What basic principles should guide the use of Article 6.2?

The authors specify three key principles that all cooperative approaches must adhere to. All three principles are included in the so-called 'chapeau' Article 6.1 of the Paris Agreement that sets the framing for all Article 6 activities:

"Parties recognize that some Parties choose to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for ***higher ambition*** *in their mitigation and*

*adaptation actions and to promote **sustainable development** and **environmental integrity**."*
(UNFCCC, 2016, Article 6.1 Paris Agreement, emphasis added)

- **Environmental integrity** is understood to be ensured if the cooperation and transfer of ITMOs under Article 6.2 leads to aggregated GHG emissions over time that are not higher than those that would have occurred in the absence of the cooperation.
- **Ambition raising** is understood as a concept that applies to activities as well as the climate targets of the participating Parties. Individual activities can 'go beyond' of what is currently possible, for instance by applying technologies that are currently inaccessible. At the national target level, this ambition raising impact must be secured through a dynamic enhancement over time. In this report, the concept of ambition raising also includes a contribution to overall mitigation in global emissions (OMGE).
- **Sustainable development** contributions are considered a key requirement for all cooperative approaches. Negative social and environmental impacts, in turn, must be avoided and, where this might not be possible, minimized.

While environmental integrity and ambition raising apply to the demand side (acquiring Party) and the supply side (transferring Party) of a cooperative approach, sustainable development is considered a principle that only applies to the supply side.

Reporting and transparency are elements of crucial relevance in the context of Article 6 and the Paris Agreement more broadly. We consider **Article 6.2 to be an open reporting and accounting framework** that allows for multiple uses. Its use for acquiring Parties can therefore go well beyond NDC attainment and should be seen a framework integrated into Article 6 and the entire Paris Agreement.

How could Germany use Article 6.2 to foster ambition?

What are the potential avenues for Germany to use Article 6.2 of the Paris Agreement and how could this engagement lead to increased ambition? The project team explores this question and identifies different options by focusing on the demand side of a cooperative approach. The findings of this research process are included in a separate discussion paper (Kreibich & Burian, 2023) that can be downloaded from the Federal Environment Agency's website.

By considering Article 6.2 as a reporting and accounting framework that allows for multiple uses, we explore how acquiring Parties could participate in cooperative approaches without necessarily using ITMOs for NDC attainment. This consideration is relevant, as it is currently not possible for Germany to use Article 6.2 for NDC achievement. Germany is a Party to the UNFCCC and a member state of the European Union (EU), which in turn acts as a regional economic integration organization under the UNFCCC and the Paris Agreement. Germany is therefore bound by the EU NDC and has not submitted a separate NDC.

Against this background, the EU's positioning towards carbon markets is of key relevance for Germany. After having been the main source of demand for carbon credits under the Kyoto Protocol, the EU has maintained a careful stance towards the use of international carbon credits under the Paris Agreement. With the update of its NDC in October 2023, the EU has again confirmed the domestic nature of its reduction target: The EU and its member states commit to a legally binding target of a domestic reduction of GHG emissions by at least 55% compared to 1990 by 2030, highlighting that the term domestic means without use of international credits (EU, 2023). While using ITMOs for NDC achievement is therefore not possible for Germany, we

identify other options for using Article 6 that could be viable. We find that opportunities are manifold in principle and identify a total of six use options:

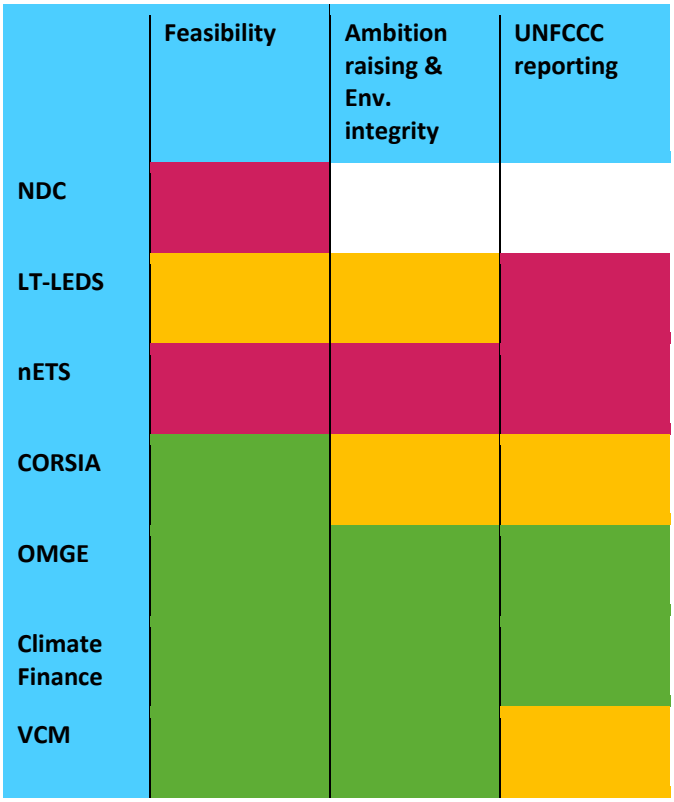
- Contribution to Germany's long-term low greenhouse gas emission development strategies (LT-LEDS) and national long-term policy targets
- Use of ITMOs for compliance with obligations under Germany's national Emissions Trading System (nETS)
- Supporting German airline operator's access to high quality units for compliance with obligations under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
- German contribution to OMGE
- Using Article 6.2 for (private) climate finance
- Supporting VCM actors' access to high quality units

The actual potential of these use options to contribute to ambition raising while upholding environmental integrity varies.

We find that the **actual potential of compliance use options is limited**. This is mainly due to the fact that Germany did not submit its own NDC but committed to the domestic EU NDC. This does exclude the use of ITMOs for NDC attainment and further challenges the use of cooperative approaches in the context of long-term targets and the use of ITMOs under Germany's nETS. We find the use of cooperative approaches to support airlines in accessing high quality units to comply with their obligations under CORSIA to be the only feasible compliance use options for Germany.

Our analysis finds that the **voluntary use options have a larger potential** to contribute to ambition raising and uphold environmental integrity but are also easier to implement. A German contribution to OMGE would make a direct and immediate contribution to ambition raising while the UNFCCC also provides for this option in its reporting framework. Using Article 6 for private climate finance is particularly interesting if combined with the 'contribution claim' approach, which is currently being discussed in the context of the voluntary carbon market (VCM). Using the Article 6.2 for this option would allow for a stronger and more visible private sector engagement in climate finance, while Germany could report on this engagement under the Enhanced Transparency Framework. Finally, using cooperative approaches to support VCM actors in accessing high quality units seems to hold particularly large potential. Given that German VCM actors may find it challenging to access high quality credits that are authorized by host Parties, the German government could support these actors by building on its diplomatic influence. The main benefit of this option is its potential to influence and increase the quality of units used by private credit buyers in Germany, while also allowing the German government to govern this market by making the access contingent on specific requirements. Table 1 below provides an overview of the findings from the assessment.

Table 1: Overview of the assessment of different use options



What criteria should guide the selection of Article 6 activities and partner countries?

Considering the supply of ITMOs, mitigation activities could be required to comply with additional criteria as a precondition for Germany's participation in the cooperative approach. To establish a sound foundation for the assessment of possible criteria, in a first step we assess the requirements of the Art. 6.2 guidance in general, including the detailed provisions for Corresponding Adjustments (CAs), the establishment of baselines and other aspects agreed during COP26 in Glasgow. Art. 6.2 is designed as a flexible crediting framework with minimum requirements based on government-to-government cooperation. The design of Art. 6.2 inherently assumes that functions such as the development of robust GHG emission estimates or the choice of an existing registry / the development of a new registry for the issuance and transfer of ITMOs are regulated by participating Parties themselves. We also note that there is an absence of guidance on how to develop a baseline aligned with the unconditional NDC (uNDC) target of the host country. Such issues, but also the framework character of the Art. 6.2 guidance creates opportunities to formulate complementary quality criteria.

The development of quality criteria may build on existing frameworks. The Swedish Energy Agency (SEA) as well as the Swiss KliK Foundation developed detailed evaluation frameworks for assessing whether to co-fund Art. 6 activities. These evaluation frameworks exceed the requirements of robust accounting, as established under the Kyoto Protocol's flexible mechanism considering current and future policies (i.e. abandoning the unfortunate E+/E- policy approach, cp. CDM EB52, Annex 3) putting an emphasis on sustainable development (e.g. requiring the monitoring of SD impacts) and attribution. The analysis finds that these frameworks form an excellent building block for the development of the quality criteria.

Similarly, the Verified Carbon Standard (VCS) and the Gold Standard (GS) offer a range of elements for developing suitable quality criteria. The VCS offers a wealth of methodologies (e.g. in the Agriculture Forestry and Other Land Use (AFOLU) sector) and tools (e.g. non-permanence tool, additionality tool for AFOLU), which are complementary to CDM methodologies, in particular for the AFOLU sector. Especially, the GS offers requirements for safeguards and for stakeholder consultation, which could guide Art. 6 activity design. Moreover, ensuring compliance with the International Labor Organization (ILO) core conventions (e.g. no child labor) is a convincing element of a do-no-harm approach. However, similar to the CDM, VCS and GS methodologies do not provide a robust basis for developing baselines that are in consistency with an uNDC target of a host country.

The analysis of the abovementioned frameworks allows to formulate 21 criteria (categorized along the three principles environmental integrity, ambition raising and sustainable development) that are compiled in the Evaluation Principles and Criteria included in section 2.4. The Evaluation Principles and Criteria may be used for selecting suitable Art. 6 activities and identifying potential host countries. These criteria do not aim to provide a detailed assessment to facilitate whether or not to invest in a specific mitigation activity, but merely aim to provide a framework for assessing the quality of carbon credits.

Are Parties interested in using Article 6?

A precondition for applying the criteria to select Article 6 activities and to identify suitable partner countries is the actual interest of countries to make use of Article 6. The report approaches this question by analyzing 195 NDCs submitted by Parties to the UNFCCC until September 2022. The findings from the analysis were compiled in a fact sheet (Kreibich, 2024) that can be downloaded from the German Environment Agency's website.

The findings of the analysis show that the NDCs can only serve as a first indicator regarding Parties' actual interest to engage under Article 6. The findings are particularly valuable for those Parties that have specified in their NDC their intention to make use of Article 6 or explicitly exclude an engagement in voluntary cooperation. However, for Parties that have not provided specific information about whether and how to use Article 6, more in-depth analysis of individual countries is needed. In general, the analysis shows that there is considerable openness towards Article 6, with many Parties intending or considering to engage in voluntary cooperation.

With regard to the different types of voluntary cooperation considered, the NDCs only provide limited insights, as specific references to cooperative approaches under Art. 6.2, to the 6.4 mechanism and non-market approaches under Art. 6.8 are only included in some of the NDCs.

Similarly, the findings regarding the question of whether Parties consider themselves as buyers or sellers of ITMOs should be treated with some caution. While the analysis has shown that the intention to buy ITMOs or A6.4ERs is much more limited than to sell such units, this does not automatically translate into a demand and supply imbalance. The actual market imbalance will depend on the volumes traded and not on the numbers of Parties involved. Furthermore, demand from actors outside the UNFCCC can be expected to play a significant role in the future, potentially mitigating this effect. With regard to the potential for Article 6 to be implemented in specific sectors and the use of Article 6 in conditional and unconditional elements of Parties' NDC, the information provided by Parties does not allow to derive a clear picture of key sectors at a global level.

More generally, the findings indicate that the latest positioning of a Party might not always be reflected in its NDC. This must be seen in light of an evolving domestic policy context that is

influenced by the dynamic developments of the international climate negotiations. The findings of the global NDC analysis should therefore be complemented with country-specific research, allowing for a more complete picture about the role Article 6 could play in the future.

How could the evaluation principles and criteria be applied in practice?

In order to assess whether the Evaluation Principles and Criteria could be applied in practice, South Africa and Indonesia are selected as two case studies. The two countries are identified by means of an analysis tool created by the project team, which uses various indicators to identify suitable partner countries. The database created by the project allows for a comprehensive global (meta-) analysis of countries to assess and narrow down the cooperation potential based on a set of elaborated political, economic, and social indicators. These indicators are based on a variety of sources, one of which and the most important are the countries' NDCs.

To assess the applicability of the Evaluation Principles and Criteria, semi-structured qualitative interviews were conducted with experts in Indonesia and South Africa (for a list of the interviewees see the Annex). The interviews were held on the basis of a catalogue of guiding questions prepared and shared with interviewees in advance.

The results of the practical check show that the criteria for the approval of mitigation activities under Art. 6 were developed from a German perspective. They are guided by principles of German climate policy, such as the phase-out of fossil fuels, or also Germany's development policy goals for achieving the international Sustainable Development Goals. The applicability check shows that these principles do not necessarily correspond with the strategies for using Art. 6 in the two case study countries. Their strategies are primarily aligned with national framework conditions (e.g. carbon tax in South Africa) and the (climate) policy goals of the respective countries.

The interviews conducted with local experts provides a differentiated picture for both countries with regard to a possible Art. 6 cooperation with Germany, taking into account the proposed criteria. This is primarily due to:

- Different definitions of the emission reduction targets included in the NDC, especially with regard to the distinction between non-conditional and conditional targets;
- The status of the respective country with regard to the decisions already taken or still to be taken by the competent bodies in the countries on the design and application of the Art. 6 mechanisms;
- The considerable differences in the political objectives of both countries depending on the national socio-economic framework conditions, such as the state of the energy sector, the level of industrial development, or the education and employment situation, whereby these factors have a considerable influence on the respective climate policy potentials and objectives.

The South African Carbon Market Framework is currently under development with international support. Delays in the implementation of the Art. 6 strategy were partly due to the question of responsibility. Since the ministries involved are pursuing different strategies, these are also likely to influence the design of the carbon market framework. However, there seems to be agreement between the ministries on additionality, baselines, or methodologies.

To what extent the approval of Art. 6 projects under the South African Framework might depend on their contribution to the achievement of international (and national) sustainable development goals cannot be answered at this time. Some of South Africa's key policies may

indeed play a significant role in this context. The Just Transition Framework, developed on behalf of the Presidential Climate Commission, touches on issues such as job creation, natural resource protection, health, gender equity, finance and others. Eskom's Just Energy Transition strategy, which focuses on achieving 'net zero' carbon emissions by 2050, with an increase in sustainable jobs and greater conservation of biodiversity in South Africa, may also become relevant. Both strategies are aimed at transformative change and, in particular, the creation of new employment opportunities, one of the country's key policy objectives.

The South African Carbon Tax is expected to have a significant impact on the future shape of the South African carbon market. According to interviewees, many national mitigation projects that would in principle qualify as Art. 6 projects could be used as "offset projects" in the national market. There may well be the possibility that two distinct Art. 6 markets will emerge in South Africa at the end of this development: (a) a domestic market for voluntary projects and/or Art. 6.4 projects without Corresponding Adjustments (CA), where MOs are priced based on the level of carbon tax payments, and (b) an ITMO market for higher-priced emission reductions that enable the implementation of strategic projects in South Africa through cooperation with international buyers.

Indonesia, the second case study analyzed, is currently in the process of developing regulation on carbon trading that also guide the participation in international market-based cooperation, including Article 6. The government has inter alia defined a list of sectors (and sub-sectors) in which carbon trading is allowed. While in principle all sectors could become a source of carbon credits, the analysis shows that the actual suitability of sectors and technologies in Indonesia will also depend on whether units will be backed by corresponding adjustments (CAs), one key consideration under Article 6.

With regard to the suitability of the Evaluation Principles and Criteria developed within this research project for assessing Article 6 mitigation activities in Indonesia, three cases are differentiated:

- In some areas, the analysis shows that there is a strong complementarity between national provisions in Indonesia and the Evaluation Principles and Criteria. Indonesia has for instance established a requirement to develop baselines and carbon trading roadmaps at sectoral and sub-sectoral levels and to only allow trading after sectoral targets were achieved. This is in accordance with the criterion to ensure NDC alignment of Article 6 activities and avoid overselling. The requirement to develop baselines at sectoral and sub-sectoral level is also in line with the requirement to develop baselines that are aligned with the NDC, as included in the Evaluation Principles and Criteria document.

- For some aspects contained in the list of Evaluation Principles and Criteria, coverage at sub-ordinate level or inclusion at a later point in time can be expected. This pertains for instance the rules for ensuring the additionality of the mitigation activity, which will presumably be covered at the methodological level as well as provisions for dealing with non-permanence of emission reductions and removals, which will be included in sector-specific regulations. One of the aspects that will presumably find its way into the regulations at a later stage is the mitigation activities' contributions to transformational change, which will presumably build on ongoing processes, such as the Just Energy Transition Partnership (JETP). Similarly, the details of sustainable development and other concepts are not included in the regulation at this stage, given that the government is ensuring the alignment of its regulation with other international processes in which it is involved.

- At the same time, however, the analysis also highlights areas of divergence. There is, for instance, no link to the SDG process, and market activities are currently not required to contribute to Indonesia's SDGs. Similarly, the findings indicate that defining the eligibility of activities at the global level can be problematic and that specific national circumstances need to also be taken into consideration.

The general prospects for cooperation between Indonesia and Germany appear somewhat mixed. While there is a need for international support and Indonesia is open to exploring new possibilities for cooperation, the country is already cooperating with several partners. Many of these countries have clearly expressed their willingness to buy ITMOs and are in advanced stages of cooperation also with other countries. This could limit the potential for Germany to become a partner country in the area of market-based cooperation.

The results of the practical check show that the Evaluation Principles and Criteria were drawn up from a German perspective and follow the principles of German climate policy, such as the phase-out of fossil fuels or also Germany's development policy goals for achieving the international Sustainable Development Goals. These principles do not necessarily correspond to the strategies for using Art. 6 in the partner countries. These are primarily aligned with national framework conditions (e.g. carbon tax in South Africa) and the (climate) policy goals of the respective countries.

If the criteria for the selection of Art. 6 projects were to coincide between Germany and partner countries, nothing would stand in the way of successful Art. 6 cooperation. However, the examples of South Africa and Indonesia show that certain projects that would be suitable for carbon financing from the perspective of the host country might not be acceptable from the German side.

What overall conclusions can be drawn regarding Germany's role in fostering ambition through Art. 6?

The findings of the project indicate that there are multiple options for Germany to use Article 6.2, despite the fact that using ITMOs for NDC achievement is not possible. Overall, the use of cooperative approaches for voluntary purposes has a stronger potential while risks are lower than for compliance purpose uses. Making use of Article 6 as a framework to mobilize private sector capital and increase attractiveness for VCM buyers may hold considerable potential.

To ensure that this potential translates into actual benefits, the engagement should be guided by the basic principles derived from Article 6.1: environmental integrity, ambition raising and sustainable development. On the basis of the analysis of existing frameworks (KliK, SEA, GS, VCS) we developed a list of criteria that specify the three overarching principles compiled in the Evaluation Principles and Criteria. These criteria are intended to guide the selection of partner countries and mitigation activities in practice.

The applicability check of the selection criteria using the case studies of South Africa and Indonesia underscores the relevance of national policy making in the host countries and how this influences the applicability of criteria developed unilaterally.

For some of the criteria we identified a strong complementarity with the national priorities, for instance with regard to the development of conservative baseline and avoidance of overselling. In some areas, however, the selection criteria do not necessarily align with the national priorities, for instance when it comes to the linkage to the SDG process or the sectoral focus of eligible mitigation activities. Overall, the findings indicate that defining the eligibility of activities

at the global level has considerable limitations and that specific national circumstances need to also be taken into consideration.

We therefore suggest a bilateral process to be established between Germany and its potential partner countries. The process should involve stakeholders from both sides and also include representatives from the private sector, civil society and indigenous peoples organizations as well as academia. The dialogue should be guided by a common understanding of the overarching principles of environmental integrity, ambition raising and sustainable development. While the criteria should be considered a first step towards their operationalisation, there should be sufficient room to align the criteria to the specific national situation. With this, the design of the cooperative approach could be adjusted to national priorities of the countries involved and foster more ambition in the fight against climate change, while adherence to the overarching principles of the Paris Agreement is ensured.

Zusammenfassung

Um den Anstieg der globalen Durchschnittstemperatur auf deutlich unter 2 °C zu begrenzen und die Obergrenze von 1,5 °C im Vergleich zum vorindustriellem Niveau in Reichweite zu halten, müssen die weltweiten Treibhausgas-Emissionen drastisch und schnell reduziert werden. Allerdings reicht das Ambitionsniveau der jetzigen Nationally Determined Contributions (NDCs) der Vertragsparteien nicht aus, um sicherzustellen, dass der Klimawandel innerhalb dieser international vereinbarten Grenzen bleibt.

Eine Möglichkeit für die Vertragsparteien, diese Ambitionslücke zu schließen, ist die internationale Zusammenarbeit. Artikel 6 des Pariser Abkommens bietet den Vertragsparteien drei Möglichkeiten zur freiwilligen Zusammenarbeit bei der Umsetzung ihrer NDCs. Artikel 6.2 des Abkommens führt einen Berichts- und Verrechnungsrahmen ein, der es den Vertragsparteien ermöglicht, sich an sogenannten Kooperativen Ansätzen zu beteiligen. Bei Kooperativen Ansätzen können die Vertragsparteien Minderungsergebnisse (Mitigation Outcomes, MOs) erzielen, die als international übertragene Minderungsergebnisse (ITMOs) übertragen und für verschiedene Zwecke verwendet werden können. Artikel 6.4 sieht einen Mechanismus vor, der unter der Aufsicht der Rahmenübereinkommen der Vereinten Nationen über Klimaänderungen (UNFCCC) steht und als Nachfolger des Clean Development Mechanism (CDM) des Kyoto-Protokolls angesehen werden kann. Sobald sich der Mechanismus in der Umsetzung befindet, wird er Emissionsreduktionen nach Artikel 6.4 (A6.4ER) ausstellen, die international als ITMOs übertragen werden können. Während Artikel 6.2 und Artikel 6.4 marktbasierte Mechanismen darstellen, wurde mit Artikel 6.8 ein nicht-marktbasierter Ansatz eingeführt, der keine Transfers von Minderungsergebnissen vorsieht.

Die marktbasierte Zusammenarbeit ist seit jeher eines der besonders umstrittenen Themen im unter der UNFCCC. Der Text zu Artikel 6 war einer der letzten Punkte, auf den man sich in der letzten Nacht der COP 21 in Paris einigte (Marcu, 2016). Und während sich die Parteien auf der COP 24 in Kattowitz 2018 auf die Funktionsweise der meisten Aspekte des Pariser Abkommens einigten, zogen sich die Verhandlungen über das sogenannte Artikel-6-Regelwerk bis zur COP 26 in Glasgow hin. Das Artikel-6-Regelwerk legt die Funktionsweise der freiwilligen Zusammenarbeit in einigen Details fest, lässt aber einige operative Aspekte offen, die Gegenstand der laufenden Debatte in den Klimaverhandlungen sind. Obwohl sich die Vertragsparteien auf der COP28 in Dubai nicht auf die grundlegenden Gestaltungsaspekte der kooperativer Ansätze einigen konnten, hat Artikel 6.2 bereits das konzeptionelle Stadium verlassen. Einige Industrieländer haben bereits bilaterale Abkommen mit Entwicklungsländern vorangebracht, um Minderungsergebnisse (MOs) zu generieren, sie als ITMOs zu übertragen und auf ihre NDC anzurechnen. Ein Meilenstein hierbei wurde mit dem Abschluss des ersten Transfers von ITMOs zur NDC-Erfüllung zwischen Thailand und der Schweiz im Januar 2024 erreicht (Carbon Pulse, 2024). Bei sorgfältiger Planung und Umsetzung könnte eine solche bilaterale marktbasierte Zusammenarbeit es den teilnehmenden Parteien ermöglichen, ihr Ambitionsniveau zu erhöhen.

Der vorliegende Bericht fasst die Ergebnisse des Forschungsvorhabens "Internationale marktbasierte Ansätze zur Steigerung der Klimaschutzambitionen" zusammen. Das Projekt wurde vom Umweltbundesamt (UBA) in Auftrag gegeben und gemeinsam vom Wuppertal Institut und der GFA Consulting Group durchgeführt. Das Projekt untersucht, wie sich Deutschland an Kooperativen Ansätzen unter Artikel 6.2 beteiligen könnte und berücksichtigt dabei die Angebots- und Nachfrageseite.

Welche Prinzipien sollten die Anwendung von Artikel 6.2 leiten?

Die Autoren nennen drei Grundprinzipien, die bei allen kooperativen Ansätzen zu beachten sind. Alle drei Prinzipien finden sich im so genannten "chapeau" Artikel 6.1 des Pariser Abkommens, welches den Rahmen für alle Aktivitäten nach Artikel 6 vorgibt:

*"Parties recognize that some Parties choose to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for **higher ambition** in their mitigation and adaptation actions and to **promote sustainable development** and **environmental integrity**."*
(UNFCCC, 2016, Article 6.1 Paris Agreement, emphasis added)

- Die **Umweltintegrität** gilt als gewährleistet, wenn die Zusammenarbeit und der Transfer von ITMOs gemäß Artikel 6.2 im Laufe der Zeit zu aggregierten Treibhausgasemissionen führen, die nicht höher sind als diejenigen, die ohne die Zusammenarbeit entstanden wären.
- **Ambitionssteigerung** wird als ein Konzept verstanden, das sowohl die Aktivitäten als auch die Klimaziele der teilnehmenden Vertragsparteien einbezieht. Einzelne Aktivitäten können über das derzeit Mögliche hinausgehen, z.B. durch den Einsatz von Technologien, die derzeit nicht zugänglich sind. Auf der Ebene der nationalen Ziele muss diese Ambitionssteigerung durch eine dynamische Verbesserung im Laufe der Zeit abgesichert werden. In diesem Bericht umfasst das Konzept der Steigerung der Ambition auch einen Beitrag zur Gesamtminderung der Globalen Emissionen (OMGE).
- Der Beitrag zu einer **nachhaltigen Entwicklung** wird als wesentliche Voraussetzung für alle kooperative Ansätze betrachtet. Negative soziale und ökologische Auswirkungen müssen vermieden werden und dort, wo dies nicht möglich ist, minimiert werden.

Während Umweltintegrität und Ambitionssteigerung sowohl für die Nachfrageseite (Käuferstaaten) als auch für die Angebotsseite (Verkäuferstaaten) eines Kooperativen Ansatzes gelten, ist nachhaltige Entwicklung ein Prinzip, das nur für die Angebotsseite gilt.

Berichterstattung und Transparenz sind im Zusammenhang mit Artikel 6 und dem Pariser Abkommen von großer Bedeutung. Wir betrachten Artikel 6.2 als einen offenen Verrechnungs- und Berichterstattungsrahmen, der vielfältige Nutzungsformen zulässt. Sein Nutzen für die anwendenden Vertragsparteien kann daher weit über das Erreichen der NDCs hinausgehen und sollte als ein allgemeiner Rahmen in Artikel 6 und dem gesamten Pariser Abkommen angesehen werden.

Wie könnte Deutschland Art. 6.2 zur Förderung der Ambition nutzen?

Welche Möglichkeiten hat Deutschland, Artikel 6.2 des Pariser Abkommens zu nutzen, und wie könnte diese Engagement zu mehr Ambition führen? Das Projektteam geht dieser Frage nach und identifiziert verschiedene Optionen indem es die Nachfrageseite eines Kooperativen Ansatzes in Mittelpunkt rückt. Die Ergebnisse dieses Forschungsprozesses sind in einem separaten Diskussionspapier (Kreibich & Burian, 2023) dargelegt, welches auf den Internetseiten des Umweltbundesamtes heruntergeladen werden kann.

Indem wir Artikel 6.2 als einen Verrechnungs- und Berichterstattungsrahmen betrachten der vielfältige Nutzungsformen zulässt, können wir untersuchen, wie sich Käuferstaaten an Kooperativen Ansätzen beteiligen könnten, ohne notwendigerweise ITMOs für die NDC-

Erreichung zu verwenden. Diese Überlegung ist relevant, da Deutschland derzeit nicht die Möglichkeit hat, Artikel 6.2 für die NDC-Umsetzung zu nutzen. Deutschland ist eine Vertragspartei des UNFCCC und ein Mitgliedsstaat der Europäischen Union (EU), die wiederum als regionale wirtschaftliche Integrationsorganisation im Rahmen des UNFCCC und des Pariser Abkommens fungiert. Deutschland ist daher an das EU-NDC gebunden und hat kein eigenes NDC vorgelegt.

Vor diesem Hintergrund ist die Positionierung der EU gegenüber den Kohlenstoffmärkten für Deutschland von zentraler Bedeutung. Während die EU unter dem Kyoto-Protokoll die Hauptnachfragequelle von Emissionsgutschriften war, hat sie unter dem Übereinkommen von Paris eine vorsichtige Haltung gegenüber der Nutzung internationaler Emissionsgutschriften eingenommen. Mit der Aktualisierung ihres NDC im Oktober 2023 hat die EU den inländischen Charakter ihres Reduktionsziels bekräftigt: Die EU und ihre Mitgliedsstaaten verpflichten sich zu dem rechtsverbindlichen Ziel, die Treibhausgasemissionen bis 2030 national um mindestens 55% gegenüber 1990 zu reduzieren, wobei der Begriff "intern" genutzt wird, um auszudrücken, dass keine internationale Gutschriften verwendet werden (EU, 2023). Während die Nutzung von ITMOs zur Erreichung der NDCs für Deutschland somit nicht möglich ist, zeigen wir andere Optionen zur Nutzung von Artikel 6 auf, die praktikabel sein könnten. Wir stellen fest, dass die Möglichkeiten prinzipiell vielfältig sind und identifizieren insgesamt sechs Nutzungsoptionen:

- Ein Beitrag zu Deutschlands langfristigen Entwicklungsstrategien für niedrige Treibhausgasemissionen (LT-LEDS) und nationalen langfristigen politischen Zielen
- Die Nutzung von ITMO zur Erfüllung der Verpflichtungen aus dem nationalen Emissionshandelssystem (nETS) in Deutschland
- Die Unterstützung des Zugangs deutscher Fluggesellschaften zu hochwertigen Einheiten zur Erfüllung der Verpflichtungen aus dem Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
- Ein deutscher Beitrag zu OMGE
- Die Nutzung von Art. 6.2 für (private) Klimafinanzierung
- Die Unterstützung des Zugangs von VCM-Akteuren zu hochwertigen Einheiten

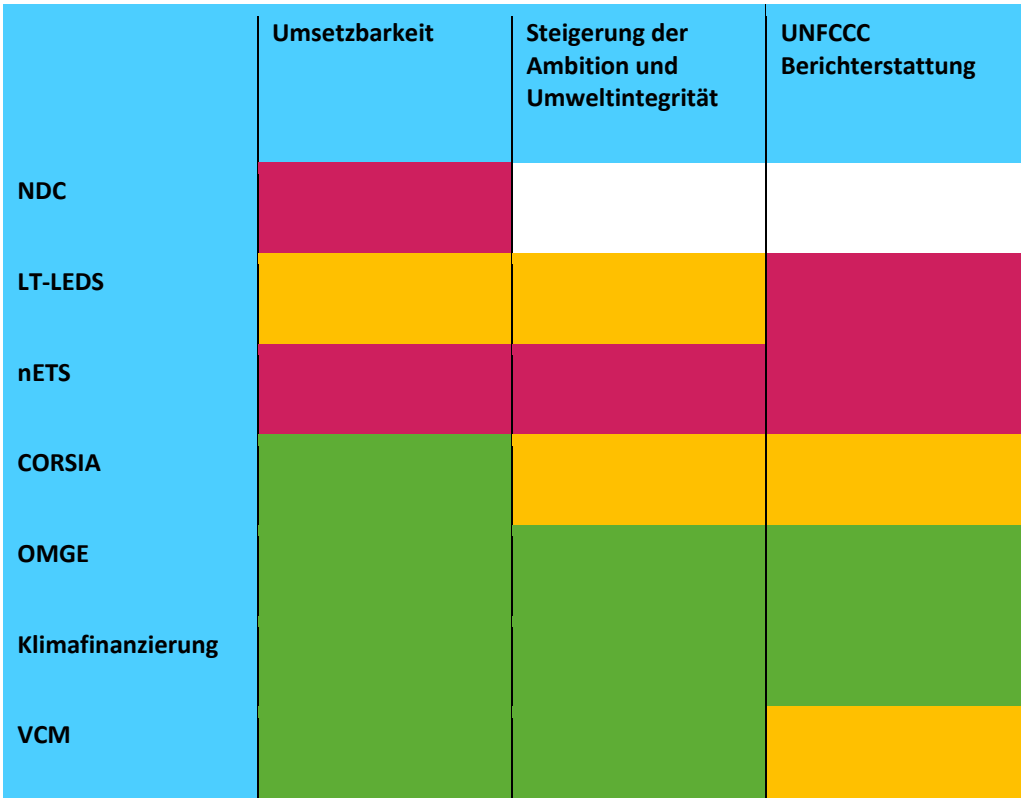
Das tatsächliche Potenzial dieser Nutzungsoptionen, zur Steigerung der Ambitionen bei gleichzeitiger Wahrung der Umweltintegrität beizutragen, ist unterschiedlich.

Wir stellen fest, dass das **tatsächliche Potenzial der Nutzung von Art. 6.2 zu Verpflichtungszwecken begrenzt** ist. Dies liegt vor allem daran, dass Deutschland kein eigenes NDC vorgelegt hat, sondern an das EU-NDC gebunden ist, das intern erreicht werden soll. Dies schließt die Nutzung von ITMOs zur Erreichung der NDCs aus und stellt die Nutzung von kooperativen Ansätzen im Zusammenhang mit Langfristzielen und die Nutzung von ITMOs im Rahmen des deutschen nETS in Frage. Wir stellen fest, dass die Nutzung Kooperativer Ansätze zur Unterstützung der Fluggesellschaften beim Zugang zu qualitativ hochwertigen Einheiten für die Erfüllung ihrer CORSIA-Verpflichtungen die einzige praktikable Verpflichtungsnutzung für Deutschland ist.

Unsere Analyse kommt zu dem Ergebnis, dass die **freiwilligen Optionen über ein größeres Potenzial** verfügen, zur Steigerung der Ambition und zur Wahrung der Umweltintegrität beizutragen, und zudem einfacher umzusetzen sind. Ein deutscher Beitrag zur OMGE würde direkt und unmittelbar zur Ambitionssteigerung beitragen, während die UNFCCC diese Option auch in ihrem Berichtsrahmen vorsieht. Die Nutzung von Artikel 6 für private Klimafinanzierung

ist besonders interessant, wenn sie mit dem Ansatz des Contribution Claim kombiniert wird, der derzeit im Zusammenhang mit dem freiwilligen Kohlenstoffmarkt (Voluntary Carbon Market, VCM) diskutiert wird. Die Nutzung von Artikel 6.2 für diese Option würde ein stärkeres und sichtbareres Engagement des Privatsektors in der Klimafinanzierung ermöglichen, während Deutschland über dieses Engagement im Rahmen des Erweiterten Transparenzrahmens berichten könnte. Schließlich scheint die Nutzung Kooperativer Ansätze zur Unterstützung von VCM-Akteuren beim Zugang zu hochwertigen Einheiten ein besonders großes Potenzial zu haben. Angesichts der Tatsache, dass es für deutsche VCM-Akteure schwierig sein kann, Zugang zu hochwertigen, von den Gastgeberländern genehmigten Gutschriften zu erhalten, könnte die deutsche Bundesregierung diese Akteure unterstützen, indem sie ihren diplomatischen Einfluss geltend macht. Der Hauptvorteil dieser Option liegt in der Möglichkeit, die Qualität der von privaten Käufern in Deutschland verwendeten Gutschriften zu beeinflussen und zu verbessern, während die Regierung gleichzeitig die Möglichkeit hat, diesen Markt zu steuern, indem sie den Zugang von bestimmten Anforderungen abhängig macht. Tabelle 1 fasst die Ergebnisse der Bewertung zusammen.

Table 2: Überblick über die Bewertung der verschiedenen Nutzungsoptionen



Welche Kriterien sollten für die Auswahl von Artikel 6-Maßnahmen und Partnerländern gelten?

Mit Blick auf das Angebot von ITMOs könnten zusätzliche Anforderungen an die Minderungsaktivitäten als Voraussetzung für die Teilnahme Deutschlands am dem Kooperativen Ansatz gestellt werden. Um eine solide Grundlage für die Bewertung möglicher Kriterien zu schaffen, bewerten wir in einem ersten Schritt die Anforderungen der Art. 6.2-Guidance im Allgemeinen, einschließlich der detaillierten Vorgaben für Corresponding Adjustments (CAs),

die Festlegung von Baselines sowie andere Aspekte, die auf der COP26 in Glasgow vereinbart wurden. Art. 6.2 ist als flexibler Verrechnungsrahmen mit Mindestanforderungen auf der Grundlage der Zusammenarbeit zwischen Regierungen konzipiert worden. Die Ausgestaltung von Art. 6.2 geht naturgemäß davon aus, dass Funktionen wie die Entwicklung robuster THG-Emissionsschätzungen oder die Wahl eines bestehenden Registers / die Entwicklung eines neuen Registers für die Ausstellung und Übertragung von ITMOs von den teilnehmenden Parteien selbst geregelt werden. Wir stellen außerdem fest, dass es keine Anleitung für die Entwicklung einer Baseline gibt, die mit dem unkonditionalen NDC (uNDC) Ziel des Gastgeberlandes abgestimmt ist. Solche Fragen, aber auch der Rahmencharakter der Art. 6.2 Guidance bieten die Möglichkeit, ergänzende Qualitätskriterien zu formulieren.

Die Entwicklung von Qualitätskriterien kann auf bestehenden Rahmenwerken aufbauen. Die Schwedische Energieagentur (SEA) und die schweizerische Stiftung KliK verfügen über detaillierte Bewertungsrahmen für die Beurteilung der Kofinanzierung von Art. 6-Aktivitäten. Diese Bewertungsrahmen gehen über die Anforderungen einer soliden Bilanzierung hinaus, wie sie im Rahmen der flexiblen Mechanismen des Kyoto-Protokolls unter Berücksichtigung aktueller und zukünftiger Politiken festgelegt wurden (d.h. Abkehr vom E+/E- Politikansatz, vgl. CDM EB52, Anhang 3), und legen den Schwerpunkt auf nachhaltige Entwicklung (z.B. durch die Forderung nach einem Monitoring der Auswirkungen auf die nachhaltige Entwicklung) und Anrechenbarkeit. Die Analyse kommt zu dem Schluss, dass diese Rahmenwerke eine ausgezeichnete Grundlage für die Entwicklung von Entwürfen für Qualitätskriterien darstellen.

In ähnlicher Weise bieten der Verified Carbon Standard (VCS) und der Gold Standard (GS) eine Reihe von Elementen zur Entwicklung geeigneter Qualitätskriterien. Der VCS bietet eine Vielzahl von Methoden (z.B. für den Sektor Landwirtschaft, Forstwirtschaft und andere Landnutzungen (AFOLU)) und Instrumenten (z.B. Non-Permanence-Tool, Additionality-Tool für AFOLU), die die CDM-Methoden insbesondere für den AFOLU-Sektor ergänzen. Insbesondere stellt der GS Anforderungen an Schutzmaßnahmen und die Konsultation von Stakeholdern, die die Ausgestaltung von Art. 6 Aktivitäten beeinflussen könnten. Darüber hinaus ist die Einhaltung der Kernkonventionen der Internationalen Arbeitsorganisation (ILO) (z.B. keine Kinderarbeit) ein überzeugendes Element des Do-no-harm-Ansatzes. Ähnlich wie beim CDM bieten die VCS- und GS-Methoden jedoch keine solide Grundlage für die Entwicklung von Baselines, die mit einem uNDC-Ziel des Gastgeberlandes übereinstimmen.

Die Analyse der oben genannten Rahmenwerke ermöglicht die Formulierung von 21 Kriterien (kategorisiert nach den drei Prinzipien Umweltintegrität, Ambitionssteigerung und nachhaltige Entwicklung), die in Abschnitt 2.4 unter „Evaluation Principles and Criteria“ enthalten sind. Die darin enthaltenen Bewertungsprinzipien und Kriterien zielen nicht darauf ab, eine detaillierte Bewertung vorzunehmen, um die Entscheidung für oder gegen eine bestimmte Minderungsmaßnahme zu treffen, sondern sollen lediglich einen Rahmen für die Bewertung der Qualität von Minderungsgutschriften bieten.

Sind die Vertragsparteien an der Nutzung von Artikel 6 interessiert?

Eine Voraussetzung für die Anwendung der Bewertungskriterien zur Auswahl von Artikel 6-Aktivitäten und zur Ermittlung geeigneter Partnerländer ist das tatsächliche Interesse der Länder, Artikel 6 zu nutzen. Der Bericht nähert sich dieser Frage durch die Analyse von 195 NDCs, die von den Vertragsparteien bis September 2022 bei der UNFCCC eingereicht wurden. Die Ergebnisse der Analyse wurden in einem Fact Sheet zusammengefasst (Kreibich, 2024), das auf der Website des Umweltbundesamtes heruntergeladen werden kann.

Die Ergebnisse der Analyse zeigen, dass die NDCs nur als erster Indikator für das tatsächliche Interesse der Vertragsparteien an einer Verpflichtung nach Artikel 6 dienen können. Die Ergebnisse sind besonders wertvoll für Vertragsparteien, die in ihren NDCs ihre Absicht bekundet haben, von Artikel 6 Gebrauch zu machen, oder die eine Verpflichtung zur freiwilligen Zusammenarbeit ausdrücklich ausgeschlossen haben. Für die Vertragsparteien, die keine spezifischen Informationen darüber vorgelegt haben, ob und wie sie Artikel 6 nutzen wollen, ist jedoch eine eingehendere Analyse der einzelnen Länder erforderlich. Im Allgemeinen zeigt die Analyse, dass eine beträchtliche Offenheit gegenüber Artikel 6 besteht und viele Vertragsparteien beabsichtigen oder erwägen, sich an der freiwilligen Zusammenarbeit zu beteiligen.

Die NDCs bieten jedoch nur einen begrenzten Einblick in die verschiedenen Arten der freiwilligen Zusammenarbeit, da spezifische Verweise auf Kooperative Ansätze nach Art. 6.2, auf den Mechanismus nach Art. 6.4 und auf nicht-marktbasierte Ansätze nach Art. 6.8 nur in wenigen NDCs enthalten sind. Ebenso sind die Ergebnisse hinsichtlich der Frage, ob sich die Vertragsparteien als Käufer oder Verkäufer von ITMOs sehen, mit einer gewissen Vorsicht zu betrachten. Obwohl die Analyse gezeigt hat, dass die Absicht, ITMOs oder A6.4ER zu kaufen, deutlich geringer ist als die Absicht, solche Einheiten zu verkaufen, führt dies nicht automatisch zu einem Ungleichgewicht zwischen Angebot und Nachfrage. Das tatsächliche Marktungleichgewicht hängt von den gehandelten Mengen und nicht von der Anzahl der beteiligten Parteien ab. Darüber hinaus ist zu erwarten, dass die Nachfrage von Akteuren außerhalb der Klimarahmenkonvention in Zukunft eine wichtige Rolle spielen wird, wodurch dieser Effekt abgeschwächt werden könnte. Was das Potenzial für die Umsetzung von Artikel 6 in bestimmten Sektoren und die Nutzung von Artikel 6 in den konditionalen und unkonditionalen Teilen der NDCs der Vertragsparteien betrifft, so ergibt sich aus den von den Vertragsparteien vorgelegten Informationen kein klares Bild der Schlüsselsektoren auf globaler Ebene.

Generell deuten die Ergebnisse darauf hin, dass sich die jüngste Positionierung einer Partei nicht immer in ihrem NDC widerspiegelt. Dies muss vor dem Hintergrund eines sich wandelnden innenpolitischen Kontextes gesehen werden, der von den dynamischen Entwicklungen in den internationalen Klimaverhandlungen beeinflusst wird. Die Ergebnisse der globalen NDC-Analyse sollten daher durch länderspezifische Untersuchungen ergänzt werden, um ein vollständigeres Bild der Rolle zu erhalten, die Artikel 6 in Zukunft spielen könnte.

Wie könnten die Bewertungskriterien in der Praxis angewendet werden?

Um die Anwendbarkeit der Bewertungsprinzipien in der Praxis zu beurteilen, wurden Südafrika und Indonesien als zwei Fallstudien ausgewählt. Beide Länder wurden mit Hilfe eines vom Projektteam entwickelten Analyseinstruments identifiziert, das verschiedene Indikatoren zur Identifizierung geeigneter Partnerländer heranzieht. Die im Rahmen des Projekts erstellte Datenbank ermöglicht eine umfassende, globale (Meta-) Länderanalyse, um das Kooperationspotenzial anhand einer Reihe von entwickelten politischen, wirtschaftlichen und sozialen Indikatoren zu bewerten und einzugrenzen. Diese Indikatoren basieren auf einer Vielzahl von Quellen, von denen eine und die wichtigste die NDCs der Länder sind.

Um die Anwendbarkeit der Bewertungsprinzipien und Kriterien zu beurteilen, wurden semi-strukturierte qualitative Interviews mit Expertinnen und Experten in Indonesien und Südafrika durchgeführt (für eine Auflistung der Interviewpartner*innen siehe Annex). Die Interviews

wurden auf der Grundlage eines Leitfragenkatalogs geführt, der im Vorfeld erstellt und mit den Befragten geteilt wurde.

Die Ergebnisse des Praxischecks zeigen, dass die Bewertungsprinzipien und Kriterien für die Genehmigung von Minderungsmaßnahmen nach Artikel 6 aus deutscher Sicht entwickelt wurde. Sie orientieren sich an Prinzipien der deutschen Klimapolitik, wie dem Ausstieg aus fossilen Energieträgern, oder auch an den entwicklungspolitischen Zielen Deutschlands zur Erreichung der internationalen Sustainable Development Goals. Die Prüfung der Anwendbarkeit zeigt, dass diese Prinzipien nicht notwendigerweise mit den Strategien zur Umsetzung von Art. 6 in den beiden Fallstudienländern übereinstimmen. Die Strategien orientieren sich in erster Linie an den nationalen Rahmenbedingungen (z.B. Kohlenstoffsteuer in Südafrika) und (klima-) politischen Zielen der jeweiligen Länder.

Aus den Interviews mit den lokalen Expertinnen und Experten ergibt sich für beide Länder ein differenziertes Bild hinsichtlich einer möglichen Art. 6-Kooperation mit Deutschland unter Berücksichtigung der vorgeschlagenen Ausgestaltungskriterien. Dies ist vor allem auf folgende Punkte zurückzuführen:

- Unterschiedliche Definitionen der im NDC enthaltenen Emissionsminderungsziele, insbesondere hinsichtlich der Unterscheidung zwischen unkonditionalen und konditionalen Zielen;
- Der Status des jeweiligen Landes in Bezug auf bereits getroffene oder noch zu treffende Entscheidungen der zuständigen Gremien in den Ländern zur Ausgestaltung und Anwendung der Art. 6-Mechanismen;
- Die erheblichen Unterschiede in den politischen Zielsetzungen beider Länder in Abhängigkeit von den nationalen sozioökonomischen Rahmenbedingungen, wie z.B. dem Zustand des Energiesektors, dem Stand der industriellen Entwicklung oder der Bildungs- und Beschäftigungssituation, die einen erheblichen Einfluss auf die jeweiligen klimapolitischen Potenziale und Ziele haben.

Der South African Carbon Market Framework wird derzeit mit internationaler Unterstützung, insbesondere aus Deutschland, entwickelt. Verzögerungen bei der Umsetzung der Art. 6-Strategie sind zum Teil auf Kompetenzfragen zurückzuführen. Da die beteiligten Ministerien unterschiedliche Strategien verfolgen, dürften diese auch die Ausgestaltung des Kohlenstoffmarktrahmens beeinflussen. In Bezug auf Zusätzlichkeit, Baselines oder Methoden scheint jedoch Einigkeit zwischen den Ministerien zu bestehen, was auch den Vorschlägen des Kriterien- und Prüfkatalogs entspricht.

Inwieweit die Genehmigung von Art. 6-Projekten im South African Carbon Market Framework von ihrem Beitrag zur Erreichung der internationalen (und nationalen) Nachhaltigkeitsziele abhängig gemacht werden könnte, kann zum jetzigen Zeitpunkt nicht beantwortet werden. Einige der wichtigsten politischen Maßnahmen Südafrikas könnten in diesem Zusammenhang eine wichtige Rolle spielen. Das Just Transition Framework, das im Auftrag der Presidential Climate Commission entwickelt wurde, behandelt Themen wie die Schaffung von Arbeitsplätzen, den Schutz natürlicher Ressourcen, Gesundheit, Geschlechtergerechtigkeit, Finanzen und andere. Auch die Just Energy Transition Strategie von Eskom, die darauf abzielt, bis 2050 Netto-Null-Kohlenstoff-Emissionen zu erreichen und gleichzeitig mehr nachhaltige Arbeitsplätze zu schaffen und die Biodiversität in Südafrika zu erhalten, könnte relevant sein. Beide Strategien zielen auf einen transformativen Wandel und insbesondere auf die Schaffung neuer Beschäftigungsmöglichkeiten ab, eines der wichtigsten politischen Ziele des Landes.

Es wird erwartet, dass die südafrikanische Kohlenstoffsteuer einen erheblichen Einfluss auf die zukünftige Ausgestaltung des südafrikanischen Kohlenstoffmarktes haben wird. Nach Ansicht der Befragten könnten viele nationale Minderungsprojekte, die im Prinzip als Art. 6-Projekte gelten würden, auf dem nationalen Markt als "Offsets" genutzt werden. Es ist durchaus möglich, dass sich in Südafrika zwei verschiedene Art. 6-Märkte entwickeln: (a) ein nationaler Markt für freiwillige Projekte und/oder Art. 6.4-Projekte ohne Corresponding Adjustments (CA), bei denen der Preis für Emissionsreduktionen durch die Höhe der Kohlenstoffsteuerzahlungen bestimmt wird, und (b) ein ITMO-Markt für höherpreisige Emissionsreduktionen, der die Umsetzung strategischer Projekte in Südafrika durch die Zusammenarbeit mit internationalen Käufern ermöglicht.

Indonesien, die zweite analysierte Fallstudie, ist derzeit dabei, Regeln für den Kohlenstoffhandel zu entwickeln, die auch die Teilnahme an der internationalen marktbasierten Zusammenarbeit, einschließlich Artikel 6, regeln. Unter anderem hat die Regierung eine Liste von Sektoren (und Subsektoren) erstellt, in denen der Handel mit Emissionsrechten erlaubt ist. Die Analyse zeigt jedoch, dass die tatsächliche Eignung von Sektoren und Technologien in Indonesien auch davon abhängt, ob die Einheiten durch CAs abgesichert sind, was ein wichtiger Aspekt von Artikel 6 ist.

Im Hinblick auf die Eignung der in diesem Forschungsprojekt entwickelten Bewertungsgrundsätze und Kriterien für die Bewertung von Artikel 6-Minderungsmaßnahmen in Indonesien können drei Fälle unterschieden werden:

- Die Analyse zeigt, dass in einigen Bereichen eine hohe Komplementarität zwischen den nationalen Bestimmungen in Indonesien und den Bewertungsprinzipien und -kriterien besteht. So hat Indonesien z.B. die Verpflichtung eingeführt, auf sektoraler und subsektoraler Ebene Baselines und Roadmaps für den Emissionshandel zu entwickeln und den Handel erst dann zuzulassen, wenn die sektoralen Ziele erreicht sind. Dies steht im Einklang mit dem Kriterium, die NDC-Anbindung von Artikel 6-Aktivitäten sicherzustellen und ein Overselling zu vermeiden. Die Anforderung, Baselines auf sektoraler und subsektoraler Ebene zu entwickeln, steht auch im Einklang mit der Anforderung, NDC-angepasste Baselines zu entwickeln, wie in den Bewertungsgrundsätzen und der Kriterien dargelegt.

- Für einige Aspekte, die in den Evaluation Principles and Criteria enthalten sind, wird erwartet, dass sie auf untergeordneter Ebene behandelt oder zu einem späteren Zeitpunkt aufgenommen werden. Dies betrifft z.B. die Regeln zur Sicherstellung der Zusätzlichkeit von Minderungsmaßnahmen, die wahrscheinlich auf der methodischen Ebene behandelt werden. Regeln zum Umgang mit der mangelnden Permanenz von Emissionsreduktionen und CO_2-Entnahmen, wiederum werden voraussichtlich in sektorspezifischen Regelungen enthalten sein. Einer der Aspekte, der wahrscheinlich zu einem späteren Zeitpunkt in die Regelungen aufgenommen wird, ist der Beitrag der Minderungsmaßnahmen zum transformativen Wandel, der wahrscheinlich auf laufenden Prozessen wie der Just Energy Transition Partnership (JETP) aufbauen wird. Auch die Details der nachhaltigen Entwicklung und anderer Konzepte sind zum jetzigen Zeitpunkt noch nicht in der Verordnung enthalten, da die Regierung sicherstellt, dass ihre Verordnung mit anderen internationalen Prozessen, an denen sie beteiligt ist, übereinstimmt.

- Gleichzeitig zeigt die Analyse aber auch Bereiche auf, in denen es Abweichungen gibt. So gibt es beispielsweise keine Verbindung zum SDG-Prozess und Marktaktivitäten sind derzeit nicht verpflichtet, einen Beitrag zu den SDGs Indonesiens zu leisten. Ebenso zeigen die Ergebnisse, dass die Definition der Förderfähigkeit von Aktivitäten auf globaler Ebene problematisch sein kann und auch die spezifischen nationalen Umstände berücksichtigt werden müssen.

Die allgemeinen Aussichten für die Zusammenarbeit zwischen Indonesien und Deutschland erscheinen eher gemischt. Zwar besteht Bedarf an internationaler Unterstützung und Indonesien ist offen für neue Kooperationsmöglichkeiten, jedoch arbeitet das Land bereits mit mehreren Partnerländern zusammen. Viele dieser Länder haben ihre Bereitschaft zum Kauf von ITMOs deutlich gemacht und befinden sich in einem fortgeschrittenen Stadium der Zusammenarbeit, auch mit anderen Ländern. Dies könnte das Potenzial Deutschlands als Partnerland im Bereich der marktorientierten Zusammenarbeit einschränken.

Die Ergebnisse des Praxischecks zeigen, dass die Bewertungsprinzipien und Kriterien aus deutscher Sicht entwickelt wurden und den Prinzipien der deutschen Klimapolitik, wie dem Ausstieg aus fossilen Energieträgern oder auch den entwicklungspolitischen Zielen Deutschlands zur Erreichung der internationalen Sustainable Development Goals folgen. Diese Grundsätze entsprechen nicht notwendigerweise den Strategien zur Umsetzung von Artikel 6 in den Partnerländern. Diese orientieren sich in erster Linie an den nationalen Rahmenbedingungen (z.B. Kohlenstoffsteuer in Südafrika) und (klima-)politischen Zielen der jeweiligen Länder.

Würden die Kriterien für die Auswahl von Art. 6-Projekten zwischen Deutschland und den Partnerländern übereinstimmen, stünde einer erfolgreichen Art. 6-Kooperation nichts im Wege. Die Beispiele Südafrika und Indonesien zeigen jedoch, dass bestimmte Projekte, die aus Sicht des Gastlandes für eine Kohlenstofffinanzierung geeignet wären, von deutscher Seite nicht akzeptiert werden.

Welche allgemeinen Schlussfolgerungen können hinsichtlich der Rolle Deutschlands bei der Förderung der Ambition durch Artikel 6 gezogen werden?

Die Ergebnisse des Projekts deuten darauf hin, dass es für Deutschland mehrere Möglichkeiten gibt, Artikel 6.2 zu nutzen, obwohl die Nutzung von ITMOs zur Erreichung der NDCs nicht möglich ist. Insgesamt hat die Nutzung von Kooperativen Ansätzen für freiwillige Zwecke ein größeres Potenzial, während die Risiken geringer sind als bei der Nutzung für Verpflichtungszwecke. Die Nutzung von Artikel 6 als Rahmen für die Mobilisierung von Kapital aus dem Privatsektor und die Steigerung der Attraktivität für VCM-Käufer könnte ein erhebliches Potenzial bergen.

Um sicherzustellen, dass dieses Potenzial in tatsächliche Vorteile umgesetzt wird, sollte sich das Engagement an den Grundprinzipien orientieren, die sich aus Artikel 6.1 ergeben: Umweltintegrität, Ambitionssteigerung und nachhaltige Entwicklung. Basierend auf der Analyse bestehender Rahmenwerke (KliK, SEA, GS, VCS) haben wir eine Liste von Kriterien entwickelt, die die drei übergeordneten Prinzipien spezifizieren. Diese sind in den Evaluation Principles and Criteria zusammengefasst.

Die Kriterien sollen die Auswahl von Partnerländern und Minderungsmaßnahmen in der Praxis leiten. Die Überprüfung der Anwendbarkeit der Auswahlkriterien anhand der Fallbeispiele Südafrika und Indonesien unterstreicht die Bedeutung der nationalen Politikgestaltung in den Gastgeberländern und wie diese die Anwendbarkeit einseitig entwickelter Kriterien beeinflusst.

Bei einigen Kriterien konnte eine starke Komplementarität mit nationalen Prioritäten festgestellt werden, z.B. bei der Entwicklung einer konservativen Baseline und der Vermeidung von Overselling. In einigen Bereichen stimmen die Auswahlkriterien jedoch nicht unbedingt mit den nationalen Prioritäten überein, z.B. bei der Verknüpfung mit dem SDG-Prozess oder der sektoralen Ausrichtung der förderfähigen Minderungsmaßnahmen. Insgesamt deuten die

Ergebnisse darauf hin, dass der Definition der Förderfähigkeit von Aktivitäten auf globaler Ebene erhebliche Grenzen gesetzt sind und auch spezifische nationale Gegebenheiten berücksichtigt werden müssen.

Wir schlagen daher vor, einen bilateralen Prozess zwischen Deutschland und potenziellen Partnerländern zu etablieren. Dieser Prozess sollte Akteure auf beiden Seiten einbeziehen und auch Vertreterinnen und Vertreter der Privatwirtschaft, der Zivilgesellschaft, der Organisationen indigener Völker und der Wissenschaft einbeziehen. Der Dialog sollte von einem gemeinsamen Verständnis der übergreifenden Prinzipien ökologische Integrität, Ambitionssteigerung und nachhaltige Entwicklung geleitet sein. Während der Entwurf der Kriterien als erster Schritt zu ihrer Operationalisierung zu verstehen ist, sollte genügend Spielraum bleiben, um die Kriterien an die spezifische nationale Situation anzupassen. Dies würde es ermöglichen, die Kooperativen Ansätze auf die nationalen Prioritäten der beteiligten Länder abzustimmen und ehrgeizigere Klimaschutzziele zu fördern, während zugleich die Einhaltung der übergeordneten Prinzipien des Pariser Abkommens sichergestellt wird.

1 Basic principles of Article 6 and use options for Germany

In a separate discussion paper (Kreibich & Burian, 2023) that can be downloaded from the Federal Environment Agency's website, we present the basic principles that all cooperative approaches must adhere to, discuss the reporting structure established by Article 6.2 and outline how we read specific areas of the Art. 6.2 Guidance that still offer considerable room for interpretation. On the basis of these observations, the discussion paper explores how Germany as an acquiring Party could participate in cooperative approaches without necessarily using ITMOs for NDC attainment.

Parties to the UNFCCC have adopted some basic principles that must be observed in the context of voluntary cooperation under Article 6. All three principles are included in the so-called 'chapeau' Article 6.1 of the Paris Agreement that sets the framing for all types of voluntary cooperation under Article 6. The three principles are defined as follows:

- **Environmental integrity**: We will consider environmental integrity to be ensured if the use of Article 6.2 leads to aggregated GHG emissions over time that are not higher than those occurring in the absence of the cooperation.
- **Ambition raising**: We understand ambition to relate to both, the demand and the supply side of a cooperative approach. On the supply side, ambition is raised if an increased mitigation impact achieved at the activity level is also embedded in the host Party's NDC and secured at the target level. On the demand side, the use of ITMOs must hence lead to an additional benefit for the climate, while using ITMOs for mere offsetting of emissions is not sufficient. We further consider a contribution to overall mitigation in global emissions (OMGE) to be part of ambition raising.
- **Sustainable development**: Contributions to sustainable development and avoidance of adverse social and environmental impacts are relevant when designing and implementing mitigation activities on the supply side. Especially for Least Developed Countries (LDC) the contributions of an Art. 6 activity to sustainable development may be even more important than the mere reduction of GHG emissions. Impacts on sustainable development are, however, not directly linked to how ITMOs are used on the demand side, but also for buyers the sustainable development co-benefits of an Art. 6 activity may be of increasing importance in case the engagement is also used for Environmental, Social and Governance reporting purposes.

The **accounting and reporting framework** established under Article 6.2 of the Paris Agreement is part of the broader UNFCCC reporting framework. We consider Article 6.2 to be an open framework, allowing us to identify various use options for Germany as an acquiring Party involved in cooperative approaches.

Germany is a Party to the UNFCCC and a member state of the European Union (EU), which in turn acts as a regional economic integration organization under the UNFCCC and the Paris Agreement. Germany has not submitted a separate NDC and is committed to the EU NDC, making the EU's positioning towards carbon markets highly relevant. After having been the main source of demand for carbon credits under the Kyoto Protocol, the EU has maintained a careful stance towards the use of international carbon credits under the Paris Agreement. With the update of its NDC in October 2023, the EU has again confirmed the domestic nature of its reduction target: The EU and its member states commit to a legally binding target of a domestic reduction of GHG emissions by at least 55% compared to 1990 by 2030, highlighting that the term domestic means without use of international credits (EU, 2023).

By considering Article 6.2 a reporting and accounting framework that allows for multiple uses beyond using ITMOs for NDC achievement, we identify a total of six use options for Article 6.2 that could be viable:

- Contribution to Germany's long-term low greenhouse gas emission development strategies (LT-LEDS) and national long-term policy targets
- Use of ITMOs for compliance with obligations under Germany's national Emissions Trading System (nETS)
- Supporting German airline operators in accessing high quality units for compliance with obligations under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
- German contribution to OMGE
- Using Article 6.2 for (private) climate finance
- Supporting VCM actors' access to high quality units

The actual potential of these use options to contribute to ambition raising while upholding environmental integrity varies. Table 3 below provides an overview of the findings from the assessment in the three areas of feasibility (1), contribution to ambition raising and safeguarding environmental integrity (2) and UNFCCC reporting (3).

Table 3: The assessment of different use options

Use Option	Feasibility	Ambition raising and environmental integrity	UNFCCC reporting
NDC	Requires major political change (-)	Not applicable	Not applicable
LT-LEDS	Possible from a domestic legal perspective (+) Problematic due to domestic nature of EU NDC (-)	Could allow Germany to achieve its GHG neutrality target earlier (+) Risk of ITMO purchase being used as argument against domestic reductions in the future (-)	Not provided for and problematic given the missing link between LT-LEDS and EU NDC (-)
nETS	Challenging due to domestic nature of EU ETS (-) Instrument design (fixed price period, price corridor, etc.) (-)	System was introduced without offsetting component and introduction could lower scheme's ambition level (-)	Not provided for and problematic in terms of transparency (-)
CORSIA	Allows for different implementation options for the government (+) Demand already existing (+)	Ambition level of CORSIA determined by ICAO cannot be adapted (-) Quality of units will go beyond existing requirements (+) If robust accounting is ensured env. integrity	Not provided for but not problematic in terms of transparency. Relevance for the government to report on this use option under the UNFCCC limited. (+-)

Use Option	Feasibility	Ambition raising and environmental integrity	UNFCCC reporting
		concerns are limited, as offsetting component with minimum criteria already in place (+)	
OMGE	Allows for different implementation options for the government (+) Potential to also involve non-state actors (+) Actual demand from non-state actors uncertain (-)	Immediate ambition raising impact (+) No environmental integrity concerns (+)	Provided for under the Article 6.2 Guidance and highly relevant for the government (+)
Results-based climate finance	Allows for different implementation options for the government (+) Several benefits for government as well as non-state actors (+) Actual demand from non-state actors uncertain (-)	Contribution to climate finance available (+) Assistance in implementation of (conditional) host Party target (+) No adverse impact on environmental integrity if misuse of this option for neutrality target is controlled for (+)	Not provided for under the Article 6.2 Guidance but reporting possible under the ETF through the BTR (+)
VCM	Allows for different implementation options for the government (+) Growing demand for and difficult access to credits makes this an interesting option for VCM actors (+)	Potential to foster investments into high quality activities (+) Possibility to avoid use of low-quality credits (+) Possibility to regulate claims (+) Offsetting model already in place (+-). Use option will not increase global emissions level (+)	Not provided for but not problematic in terms of transparency. Relevance for Government to report on this use option under the UNFCCC limited. (+-)

Source: Kreibich & Burian (2023)

We find that the **actual potential of compliance use options is limited**. The main limitation for the compliance use options is the fact that Germany did not submit its own NDC but committed to the EU NDC, which is domestic in nature. This does not only exclude the use of ITMOs for NDC attainment for the time being but also challenges the use of cooperative approaches in the context of long-term targets and the use of ITMOs under Germany's nETS. Finally, the use of cooperative approaches to support airlines in accessing high quality units to comply with obligations under CORSIA seems the only feasible compliance use options for Germany, despite limited possibilities to report on this option under the UNFCCC.

Our analysis finds that **the voluntary use options have a larger potential** to contribute to ambition raising and uphold environmental integrity but are also easier to implement. A German contribution to OMGE would make a direct and immediate contribution to ambition raising while the UNFCCC also provides for this option in its reporting framework. Using Article 6 for

private climate finance is particularly interesting if combined with the 'contribution claim' approach, which is currently being discussed in the context of the voluntary carbon market (VCM). Since the contribution claim approach builds on the idea that mitigation outcomes remain with the host Party, there are no transfers of ITMOs involved. This use option therefore only uses some elements of the Art. 6.2 framework by building on its reporting infrastructure and as a tool to quantify emission reductions. This allows for a stronger and more visible private sector engagement in climate finance, while Germany could report on this engagement under the Enhanced Transparency Framework. Finally, using cooperative approaches to support VCM actors in accessing high quality units seems to hold particularly large potential, despite the fact that reporting on this option under the UNFCCC is not provided for under the Article 6.2 Guidance. Given that German VCM actors may find it challenging to obtain high quality credits that are authorized by host Parties, the German government could support these actors by building on its diplomatic influence. The main benefit of this option is its potential to influence and increase the quality of units used by private credit buyers in Germany, while also allowing the German government to regulate this market. Access to these units could be tied to specific requirements, such as disclosure of emissions data, ambitious climate targets and transparent communication.

2 Developing criteria for Germany's engagement in Article 6 activities

2.1 Introduction

With the adoption of the Paris Agreement and more recently, the adoption of the Article 6.2 guidance (Decision 12a/CMA3) and the rules, modalities and procedures for the Article 6.4 Mechanism (Decision 12b/CMA3), a new framework for international market-based cooperation has been created.

Market-based cooperation, if rigorously applied, may allow to reduce the costs of implementing GHG emission reduction targets for the acquiring as well as for the transferring Party. This could, in principle, enable both Parties to increase their level of ambition, i.e. the comparative cost advantage from international trade may be used by both sides to adopt and follow through on more ambitious targets. Such an increase of ambition is deeply needed.

The ambition level of current NDCs submitted by the Parties is not sufficient to keep global warming within the limits set by the Paris Agreement; even if fully implemented, they would lead to an estimated increase in the global average temperature of 2.4 °C (cp. CAT 2021). Hence, an increase in ambition is urgently needed and considering the immensurable costs of a global transition, it is essential to explore cost-efficient pathways for climate change mitigation.

The completion of the Article 6.2 guidance in Glasgow prepares the ground to develop frameworks for acquiring Parties for both:

- Regulating the supply side by formulating quality criteria being complementary to the Article 6 Rulebook in general and Article 6.2 guidance specifically. Such additional criteria may set a high standard for assuring environmental integrity, raising ambition and contributions to sustainable development.
- Regulating the demand side, by considering the use of ITMOs for compliance purposes or for voluntary use, for instance, by non-state actors.

The formulation of such new quality criteria may complement the existing rules and procedures finalized in Glasgow. The development of such criteria may build on a wide range of existing achievements. The Clean Development Mechanism (CDM) has developed methodologies and tools, which, while being insufficient to reflect an uNDC, are considered to be important building blocks. Furthermore, the Gold Standard and the Verified Carbon Standard have developed complementary rules and procedures e.g. to guide the development of mitigation activities for Agriculture Forestry and Other Land Use (AFOLU), and / or to ensure strong development impacts. Exploring such criteria may contribute to the development of an Article 6 approach, which delivers outstanding development impacts in the transferring Party, while ensuring a high level of environmental integrity and accuracy.

Against the background described above, this report develops a possible set of criteria for Article 6 activities and transferring Parties (complementary to Decision 12a, CMA3) assuring / supporting environmental integrity, ambition raising and sustainable development.

The following section provides a summary of key terms used in the report:

- **Baseline, Business as Usual Scenario and Mitigation Scenario:** The framework of the Kyoto Protocol and the related Clean Development Mechanism (CDM) established the term baseline, which refers to both the business as usual (BAU) as well as the project/mitigation

scenario. The difference between both allows to estimate the volume of certified emission reductions. Under the Article 6.2 guidance, the uNDC needs to be considered in the baseline setting (cp. Paragraph 18.d Decision 12a, CMA3) for which we subsequently use the term baseline.

- **Article 6.2 activities, projects and programs:** We acknowledge that Article 6 activities may be either projects (e.g. construction & operation of a hydropower project) or programs (e.g. the introduction of a fuel economy standard to regulate and reduce the emissions from the transport sector). The subsequent analysis employs the term 'activity' to comprise/address both, projects and programs.
- **Acquiring-, transferring Party and Host Country:** Considering the framework of the Kyoto Protocol, the term 'host country' was used to refer to the country where the CDM project is being implemented. Following the Article 6 Rulebook we use the term transferring Party to denominate the country where the mitigation activity is being implemented. The term acquiring Party has no pendant under the Kyoto Protocol and refers to the country where the ITMOs are transferred to. Please note, this does not necessarily imply that the government of the acquiring Party is the investor in the mitigation activity, this may also be a private company based in the transferring country (or similar), acquiring ITMOs.
- **'Germany':** This report explores options for Germany to engage under Article 6.2. Germany is being used as an umbrella term that comprises different actors such as the German government, as well as other subnational actors and companies based in Germany.
- **MOs and ITMOs:** The Article 6 rulebook refers to mitigation outcomes (MOs) and Internationally Transferable Mitigation Outcomes (ITMOs). We use the term MO to refer to the total GHG mitigation effect of an Article 6.2 activity, while ITMO refers to a subset of MOs, being transferred to the acquiring Party.
- **Unconditional- and conditional NDC:** While not regulated by UNFCCC decisions, many developing countries use the concept of an unconditional and a conditional NDC target in their NDCs. In order to respect environmental integrity, it is essential that the reference level is set in alignment with the unconditional NDC (uNDC) target. Appendix D provides some figures that illustrate the related concepts.

2.2 Discussion of existing evaluation criteria

This section aims to address the research question "What criteria should Germany apply when engaging in Art. 6.2?" Following the subsequent approach:

- First, to derive recommendations, we conduct a high-level stock take of i) the Article 6 Rulebook and specifically elements that were adopted at the recent CMA3 and ii) relevant negotiation positions on important quality criteria. This serves as the reference point for further analysis, which assesses what additional criteria may be defined in order to assure the approval of high quality Article 6 activities and related ITMOs.
- Second, there are existing real-world examples of financing institutions that already engage in Article 6.2 cooperation today. These institutions have already developed criteria for assessing Article 6 opportunities. Hence, in a subsequent step, we review the respective requirements of Article 6 financing facilities of the KliK Foundation (Switzerland), the Swedish Energy Agency Article 6 Purchase Program (Sweden). Considering that Sweden and

Switzerland are frontrunners in this area their evaluation frameworks are relevant starting points for a potential framework in Germany.

- Finally, we provide a high-level assessment on the Verified Carbon Standard (VCS) as well as the Gold Standard (GS). Both certification standards are preparing for operating under Article 6 and have published related notes. Insights from these standards can complement the country driven criteria from step one. Certification standards have a long history of implementing and assessing projects, which makes their criteria a valuable addition to this analysis.

The relevant takeaways for developing quality criteria for acquiring Parties are discussed in section 2.2.6.

2.2.1 Article 6 Rulebook

The Paris Agreement foresees two market-based instruments: Article 6.2 and 6.4. For Article 6.4, the UNFCCC Secretariat will i) provide governance including the provision of methodologies and ii) will assume accounting functions for the transfer of credits. Finally, Paragraphs 66-70, decision 12b/CMA3 define a detailed set of rules and procedures including provisions for the Share of Proceeds (SOP) and contribution to OMGE.

Article 6.2, however, is designed as a flexible crediting framework with minimum requirements based on government-to-government cooperation. The design of Article 6.2 inherently assumes that functions such as the development of robust GHG emission estimates or the development of a registry for the issuance and transfer of ITMOs are regulated by participating Parties themselves.

As such, the Paris Agreement and decision 12a/CMA3 requires Parties engaged in Article 6.2 to report on inter alia on the following key parameters:

- Parties need to meet a series of participation requirements, which assure that the Parties have established the legal and procedural requirements for engaging in Article 6 activities. This includes for instance: i) the communication and maintenance of an NDC, ii) arrangements to authorize ITMO transfers and iii) procedures for tracking ITMOs;
- Most importantly, CMA3 provides guidance on how CA shall be applied and communicated and defines ITMOs to be measured in tCO_2e. Furthermore, provisions are provided for countries with single year targets and the provisions for CA determine when the quantity of ITMOs authorized and transferred are to be added to the GHG emission level the transferring Party, and may be subtracted from the GHG emission level of the acquiring Party /or be retired for international mitigation (cp. Paragraphs 8 and 9, decision 12a/CMA3). Equally, provisions are provided for CA in countries that submitted an NDC consisting of non-quantified mitigation measures.
- Mitigation activities need to respond to: 'How does the mitigation activity assure the adequate consideration of human rights and how does it contribute to overall mitigation?' In a strict sense, decision 12a/CMA3 does not require the provision of SOP and OMGE. However, Parties are required to report on both parameters, but could state that SOPs and OMGE are not applied or e.g. SOPs are disbursed not to the Adaptation Fund, but to an account of the national development bank of the transferring Party, earmarked for adaptation.

- With respect to SD, Parties are required to include information on SD impacts in the initial report as well as into the regular information, documenting 'consistency with the sustainable development objectives of the Party noting national prerogatives, apply safeguards' and 'promote and consider respective obligations on human rights' (Paragraphs 18.h and 22.d, decision 12a/CMA3).

- The general reporting requirements are well defined and require the reporting in the context of i) an initial report ii) annual information and iii) regular information to be included into the BTRs. This includes, amongst others, how environmental integrity is ensured, for instance by setting baselines 'in a conservative way and below business as usual emission projections' (Paragraph 18.h, decision 12a/CMA3). These reporting requirements are well defined but not developed e.g. through available reporting templates.

In summary, the Article 6.2 rulebook provides an operational framework for transferring and acquiring Parties to engage into cooperative approaches, including detailed provisions for the conduction of CA. The reporting requirements including tables and templates for the initial reports and annual information for which countries were invited to make suggestions by March 2022 (Paragraph4, decision 12a/CMA3).

In summary, by agreeing on the Art. 6 Rulebook CMA3 provided guidance on the implementation, accounting and reporting under Art. 6 of the Paris Agreement. The Art. 6 rulebook is thus the most important guidance for developing criteria for Art. 6.2 for Germany. The criteria in chapter2.4 are thus mostly driven by the Art. 6 decisions.

The Roundtable on Climate Change and Sustainable Transition reviewed the outcome of the Article 6 negotiation process after CMA3 and concludes that further guidance is needed e.g. on the interpretation of the term 'avoidance of emissions' (which is not precisely defined and had led some observers to conclude that REDD+ is not part of Article 6), and on the potential regulation of the voluntary carbon market space (cp. Marcu, 2021). The criteria in chapter 2.4 thus have to incorporate these aspects differently.

The negotiations are still in progress. In light of this report two issues are of relevance for the definition of quality criteria:

- How to deal with CA under different NDC types. The choice of an approach to averaging, included in Paragraph 7.iii, decision 12a/CMA3 to assess how CA is applied for an activity with a multi-year crediting period, implemented in a country with a single year NDC target;

- The question how Article 6 activities may establish baselines in a sector or sub-sector, which is covered by the transferring Party's NDC (i.e. reflecting the uNDC target).

These open issues are indirectly of relevance, as they may be addressed by additional requirements set in the context of national approval criteria and indicators. Hence, the subsequent section highlights these two pending issues. Ideally, both issues would be addressed through further CMA guidance, but in the interim, such issues may equally be addressed in the form of additional criteria.

Box 1 Averaging for NDCs with single year targets

In preparing their NDCs, some countries established so-called 'multiyear targets', i.e. quantitative GHG emission pathways over time. Most countries, however, formulated a single year target, e.g. the EU-27 pledged to reduce their GHG emissions of 1990 by minus 55% by 2030 (EC, 2020, §27). Single year targets pose an accounting challenge for Article 6 mitigation activities, which need to monitor emission reductions on annual basis.

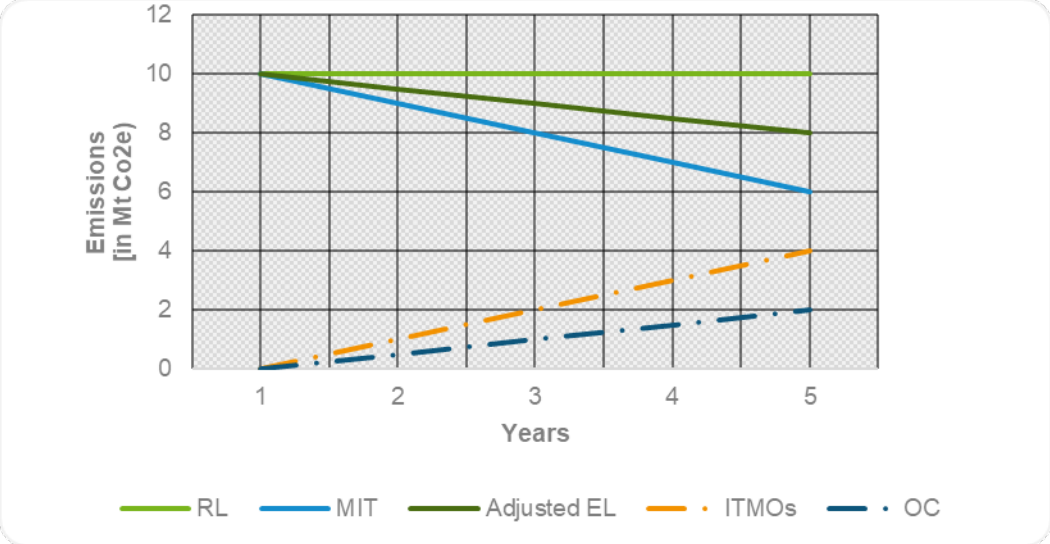
The Article 6 Rulebook (Paragraph 7, 12a/CMA3) comprises a formulation that was included already in the draft negotiation text prepared at the COP in Madrid, which allows to 'Calculating the average annual amount of ITMOs first transferred and used over the NDC implementation period, by taking the cumulative amount of ITMOs and dividing it by the number of elapsed years in the NDC implementation period and annually applying indicative CA equal to this average amount for each year in the NDC implementation period.'.

Several researchers and negotiators, prominently Siemons and Schneider (2021), Howard (2018), and Lazarus et al. (2014) argue that this approach leads to correct results in constant reference emission level- (RL) and mitigation (MIT) scenarios. However, this leads to over- or under crediting in decreasing or increasing emission profiles. Unfortunately, this formulation was adopted in the paragraph 7.ii, decision 12a/CMA3.

The Figure 1 below provides an example for a simplified case leading to over-crediting (OC), adopted from Siemons and Schneider (2021). The figure illustrates that in scenarios where there is an increasing ITMO volume over the crediting period, the agreed text for single year targets leads to an inflation of the ITMOs transferred compared to the adjusted EL. The figure below illustrates that the existence of OC (which in a correct approach should be 0) leads to the fact that the adjusted EL does not correspond to MIT.

Following Siemons and Schneider (2021) it is concluded that the current approach, to address single year targets may lead to over crediting / an insufficient adjustment of the EL. This issue may be less prevalent for mitigation activity (e.g. the construction and operation of a hydropower plant) but may be more relevant for programs (e.g. the introduction of a fuel economy standard) which exhibit a decreasing MIT scenario / increasing ITMO volume.

Figure 1: Example for corresponding adjustment leading to overcrediting



Source: Adopted from Siemons and Schneider (2021)

Box 2: Unconditional NDC target and baseline setting

Many frontrunners in Article 6 activities are concerned with the issue how to develop a baseline, which is in line with the uNDC target. The Article 6 Rulebook notes solely

- That each activity shall ensure environmental integrity through 'conservative reference levels, baselines set in a conservative way and below 'business as usual' emission projections' (cp. paragraph 18.h, decision 12a/CMA3)
- The guidance for Article 6.4 offers slightly more detail, suggesting to set the baseline below the BAU by using reference to i) best available technologies, ii) performance benchmarks, or downward projections (paragraphs cp. §§33-36, decision 12b/CMA3).

Detailed guidance on how a baseline is to be developed in consistency with the uNDC target is actually missing. As a consequence, some frontrunners focus on mitigation measures being located outside of NDC measures, significantly reducing the scopes where Article 6 could be used to cost efficiently reduce emissions.

Looking back, CDM methodologies led typically to a constant business as usual emission level; e.g. a wind CDM project in a mitigation activity with a grid emission factor of 1 tCO_2/MWh generated 1 CER for feeding 1 MWh renewable electricity in the grid, in the first year of its crediting period, and the same in its last year of its crediting period.

However, if an economy-wide unconditional NDC target of that mitigation activity proposes a reduction of its emissions by e.g. minus 30%, the baseline setting obviously needs to reflect such a national target to some extent. This issue was discussed by several authors such as Vaidyul and Hood (2018), Lo Re et al (2019), Michaelowa et al. (2020), Michaelowa et al. (2021), and Burian and Schnurr (2017).

In practice, it may not be appropriate to attribute an uNDC target (e.g. -30% economy wide) ceteris paribus on a sub-sector (referring to IPCC terminology concerning sectors (e.g. 'energy') and sub-sectors (e.g. 'electricity generation')). The reduction of one unit of emissions may cost e.g. 1 EUR/tCO_2 in the transport sub-sector (when reducing transport emissions by introduction of a fuel economy standard) and e.g. 10 EUR/tCO_2 in the electricity sector (e.g. through the introduction of PV and wind based electricity generation). Hence, the marginal abatement costs will be different in individual sectors and governments may decide to reduce more emissions in sectors exhibiting low marginal abatement costs, while doing less in sectors with high marginal abatement costs. Global marginal abatement cost functions illustrate this thinking (cp. McKinsey, 2013). Consequently, it is not reasonable to apply – in a top-down approach - an economy-wide uNDC target ceteris paribus to all subsectors and related emission baselines.

However, the development of bottom-up baselines may be a suitable alternative. Thioye et al. (2018) propose a concept of a forward-looking emission factor for the power sector, which was further discussed and refined by Hermwille (2020). On behalf of the Swedish Energy Agency, GFA supported a green hydrogen mitigation activity in South Africa (RSA), which applied the concept of a forward-looking emission factor based on the following principles (GFA, 2021):

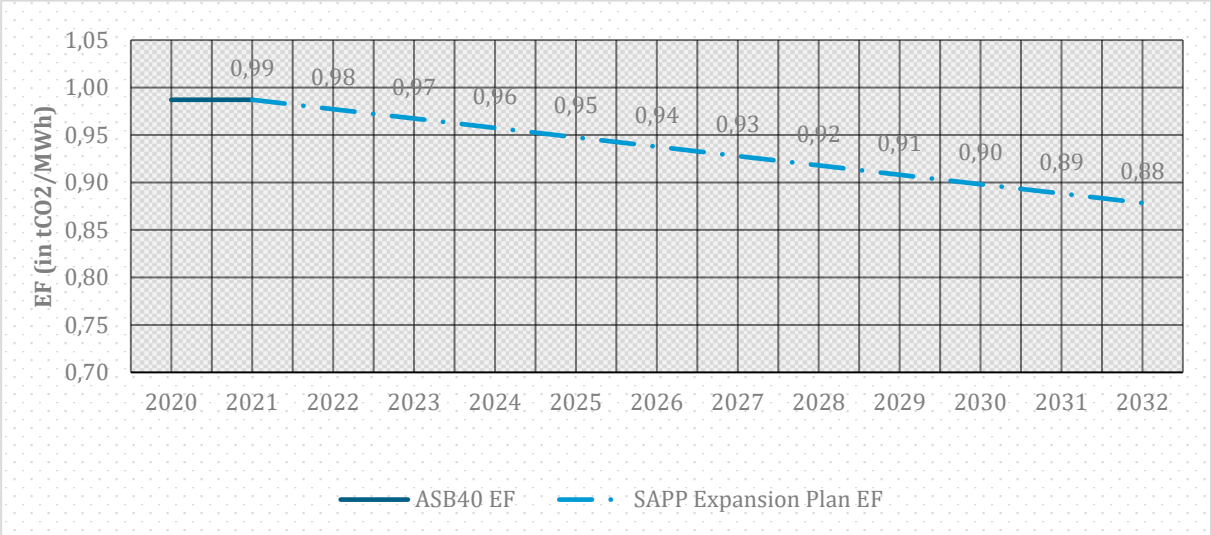
- RSA and its interconnected SADC neighbor countries operate in a regional power system. The development of the expansion of the power system is coordinated by the Southern African Power Pool (SAPP) and documented in the so-called SAPP Pool Plan. The most recent SAPP Pool Plan was approved by all utilities and all ministries of energy of all inter-connected countries.

- Assuming that the Pool Plan is consistent with national energy and climate planning, it is a suitable input for the development of a GHG emission benchmark for the power sector, in line with the uNDC target of all interconnected countries.

Based on above considerations, the Article 6 activity 'Green hydrogen for the production of ammonia in South Africa' (GFA, 2021) applies a decreasing emission factor, which complies with the expansion of the power sector and hence the unconditional NDC. Figure 2 below illustrates the evolution of the emission factor over time.

Based on this working experience, SEA guided another Article 6 mitigation activity, 'Energy Efficient Stoves Program for Rural Ethiopia' (World Vision, 2021) to consider pursuing such a bottom-up approach. In its updated NDC, the government commits to reducing Ethiopia's emissions from the forestry sector from 125.0 M tCO_2 in 2020 to 91.8 Mt CO_2 in 2030 (GoE, 2021). The Article 6 mitigation activity incorporates the uNDC target into the baseline by applying a correction factor to the fraction of non-renewable biomass, being the key parameter for the determination of the emission reduction of the distribution of one energy efficient stove. Following this approach, the Article 6 activity develops an uNDC compliant baseline.

Figure 2: Establishing a NDC compliant Article 6 Baseline for the power sector



Source: Adopted from Thioyé et al (2018)

Conclusion for the development of evaluation criteria

Considering the development of possible evaluation criteria, it is clear that the requirements must not fall behind the rules of the Article 6 rulebook. However, it is concluded that the Article 6 rulebook does not provide sufficient guidance for assuring the development of baselines in accordance with uNDC target. Hence, evaluation criteria discussed under chapter 2.4 need to address these two aspects in a meaningful manner.

2.2.2 SEA's Bilateral Cooperation Programme

Besides the Art. 6 Rulebook, real country examples are key in developing criteria for Germany. Especially Sweden is a good example as it is part of the EU NDC as well, and thus is under the same restrictions as Germany.

The Swedish Energy Agency (SEA) participates in international climate change negotiations for Sweden, managed Sweden's carbon purchase program under the Kyoto Protocol and is engaged in piloting Article 6 mitigation measures under the Paris Agreement. SEA published a call for proposals for Article 6.2 pilot activities in 2019. SEA received 60 proposals and funded the further development of six selected activities. The development of these mitigation activities aimed on i) creating the 'foundation for future decisions on financing and implementation' and ii) contributing to the 'development of methodological frameworks' (SEA, 2021). In 2021, the SEA initiated one of the first ITMO purchase programs under Art. 6.2 and has developed its own evaluation framework to assess Article 6 opportunities from which ITMOs are purchased. Against this background, this section aims to assess SEA's Article 6 evaluation criteria, as input for possible evaluation criteria for acquiring Parties allowing for the transfer.

As the evaluation criteria were not published, the subsequent section is based on GFA's experience in this evaluation process. GFA developed the Mitigation Activity Design Document (MADD) for one of these six selected mitigation activities, namely for 'Production of green hydrogen in South Africa'. SEA with support from the consultancy Perspectives developed a set of criteria to evaluate the MADD. Please note, that SEA's evaluation framework has evolved from its 2021 version. The evaluation criteria are structured as follows:

- Environmental integrity
  - Additionality comprising 7 criteria such as i) being additional to the NDC, ii) proving financial additionality, iii) blending of financing sources (i.e. combining carbon finance and concessional climate finance);
  - Baseline setting with 11 indicators, such as i) baseline setting shall be conservative, ii) shall either consider best available technologies, performance benchmark or projections below the BAU, iii) shall consider current and planned (unconditional) policies and iv) shall clearly define GHGs addressed;
  - Crediting approach including indicators, e.g. i) approach shall lead to an accurate estimate of ITMOs, ii) uncertainties must be identified and minimized, iii) leakage shall be assessed and minimized; iv) potential rebound effects shall be taken into consideration.
- Monitoring, Reporting and Verification (MRV)
  - Monitoring arrangements including 4 indicators such as i) being applicable / relevant ii) allocation of clear roles and responsibilities and iii) being comprehensive,
  - Means of implementation (2 criteria) including e.g. calibration of measurement devices;
  - Monitoring Plan (2 criteria) including quality assurance / quality control procedures;
  - Data collection and management;
  - Reporting processes which shall ensure the consistency with the Enhanced Transparency Framework (ETF) requirements;
  - Verification including requirements for third-party verification, using recognized verification processes.
- Sustainable Development

- Sustainable development (SD) strategy including 8 indicators such as i) contribute to the transferring Party's SDGs, beyond Sustainable Development Goal (SDG) 13 and ii) enclose safeguards against negative social, economic and environmental impacts;
- SD activity design including three indicators: i) SDG impacts, which are verifiable, ii) shall assess ex-ante risks of negative social, economic and environmental impacts;
- MRV of SD benefits requiring the monitoring of SD impacts;
- Stakeholder feedback, which must take place during the design but is also desirable during the implementation phase.

► Attribution

- Overarching approach to attribution, including indicators requiring the accurate attribution of emission reductions to all sources of concessional finance used (following Füssler et al., 2019);
- Financing analysis, including four indicators such as i) the comprehensive mapping of all funding sources and a transparent selection of sources eligible for attribution or ii) the estimate of 'grant equivalents' of all funding sources selected for attribution, in line with OECD Development Assistance Committee definitions and methods (cp. OECD, 2022);
- Attribution methodology, two indicators, requiring a robust approach to estimate the attribution to different funding sources.

► National context

- Suitability of the methodology for the transferring Party including indicators such as i) the avoidance by using international default parameters instead of transferring Party-specific parameters (I.e. so-called IPCC Tier 2 or Tier 3 data) and ii) using national methodologies entailing benefits that outweigh potential challenges and risks for environmental integrity;
- Consideration of transferring Party's policies, including three parameters such as i) consideration of national policies, ii) consideration of planned and communicated policies;
- Consideration of transferring Party's strategies requiring a baseline setting and additionality proof at least as stringent as the transferring Party's NDC;
- Consideration of transferring Party's political, social and economic circumstances need to be adequately reflected in the activity design.

Conclusions for the development of evaluation criteria

In summary, SEA's bilateral cooperation program, as used in 2021, includes a comprehensive evaluation framework. It includes five principles: i) environmental integrity, ii) MRV, iii) sustainable development (including the requirement for a grievance mechanism or similar), iv) attribution and v) national context, which are operationalized by 22 criteria (e.g. additionality, baseline setting etc.) and 77 indicators.

This evaluation framework for Article 6 opportunities exceeds the requirements of robust accounting, as established under the Kyoto Protocol's flexible mechanism (considering current and future policies (i.e. abandoning the unfortunate E+/E- policy approach) putting emphasis on sustainable development (e.g. requiring the monitoring of SD impacts) and attribution. It is considered to be a comprehensive framework to be applied at an advanced level of development (i.e. on the basis of draft MADDs), facilitating SEA's decision on whether or not to co-fund the Article 6 activity / sign an emission reduction purchase agreement with the Article 6 activity.

In chapter 2.2.1, aspects were identified which the Art. 6 rulebook cannot fully capture at this point in time. One of these aspects was the baseline setting. As seen in chapter 2.2.2 Sweden addressed some of these open issues already. Thus, the Swedish criteria for the stringency of baseline setting, sustainable development (including its monitoring), the consideration of the national context, and the attribution of ITMOs (if climate finance is used) will inform the development of criteria under chapter 2.4.

2.2.3 KliK Foundation

Similar to Sweden, Switzerland is one of the frontrunners in Art. 6 engagement. The KliK foundation is a Swiss organization procuring emission reductions from international activities. KliK is mandated by the Swiss CO_2 Act, stipulating: "on behalf of motor fuel importers, the KliK Foundation is to procure international emission reductions in order to offset part of carbon emissions generated by the use of motor fuels in Switzerland. This should amount to 35 million tons of CO_2e for the period 2021–2030" (KliK, 2022).

Similar to SEA's Article 6 program, the KliK foundation is a global forerunner in the development of Article 6 activities and its evaluation framework is an important reference for this analysis. In cooperation with the Swiss government, the KliK foundation developed a procurement process including evaluation criteria, which are included in different calls of proposals (e.g. 4th call, KliK, 2021). The evaluation criteria are a relevant reference point for the development of the criteria under chapter 2.4.

The evaluation criteria include some general eligibility criteria (excluding LULUCF, large-scale hydro, no regional activities) and are complemented with following 14 Pre-Selection Criteria (KliK, 2021):

1. Eligibility of the mitigation activity type: The mitigation activity must not imply nuclear energy nor result into the lock-in of fossil fuel-based technologies (Yes / No).
2. NDC Coverage: The mitigation activity is addressing GHG emitting sectors included in the NDC (Yes / No).
3. Environmental Integrity: Emission reduction calculations are credible, additional and permanent. Additionally, the application of Swiss technology is favored. (High / Medium / Low)
4. Double Claiming: The risk of double claiming of MOs by carbon and climate finance must be avoided (High / Medium / Low).
5. Sustainable Development: The mitigation activity shall contribute to SDGs and include safeguards to prevent negative impacts (High / Medium / Low).

6. Human rights: The mitigation activity must avoid the violation of international human right treaties (High / Medium / Low).
7. Bad Governance: The mitigation activity shall eliminate risk, of corruption occurrence (High / Medium / Low).
8. Business Case: The mitigation activity shall be based on a plausible business case, shall be field tested and financial close shall be in reach (High / Medium / Low).
9. Financial Modalities: The mitigation activity shall not require significant upfront finance and the required carbon price shall be within a target corridor (High / Medium / Low).
10. Role of Carbon Finance: The carbon finance revenue stream shall have a significant impact on cash flow of the mitigation activity (High / Medium / Low).
11. Self-Sustainability: The mitigation activity shall have i) a likely chance to continue operation or be replicated after the end of KliK's support and ii) shall have a second revenue stream beyond carbon (High / Medium / Low).
12. Project Risk: The mitigation activity is operating in an environment with good governance and authorities are committed to the NDC implementation (High / Medium / Low).
13. Suitability of the Counterparty: The KliK's counterparty shall have an outstanding track record and reputation while exhibiting financial strength (High / Medium / Low).
14. ICS Guidelines: For improved cook stove and similar household appliance programs, programs shall comply with the KliK's improved cookstove Guidelines (cp. KliK, 2020)

The KliK foundation and the Swiss government consider a low rating of the above evaluation criteria to be an exclusion criterion, with exemption of 'Sustainable Development', 'Self-Sustainability' and 'Project Risk'.

Conclusions for the development of evaluation criteria

With the above criteria, the KliK Foundation and the Swiss government formulated a set of comprehensive list of criteria, which value environmental integrity and sustainable development, but equally put emphasis on the business model / financial sustainability of mitigation measures. Overall, the KliK's evaluation criteria offer the same coverage as the SEA evaluation criteria. However, KliK assesses fewer criteria (14 compared to 77 indicators), which are formulated on a more general level. Considering that these are being applied in the project identification note-phase (i.e. a step before the MADD), this is deemed to be effective.

As methodologies under Art. 6 are still under development, the KLIK criteria brought interesting aspects into consideration for the development of criteria under chapter 2.4. Especially criteria for the exclusion of certain technologies, governance, the impact of carbon finance and self-sustainability will be considered for the development of the evaluation criteria under chapter 2.4. Equally of relevance is the KLIK's approach to apply these criteria, i.e. the exclusion of Article 6 opportunities if they achieve only a 'low' rating.

2.2.4 Verified Carbon Standard

Besides countries, different standards are also engaging in Article 6 and thus give important insides for the purpose of this report. The organization Verra was founded in 2007 with the objective to address the need for greater quality assurance in voluntary carbon markets. Today Verra hosts 7 standards, including the Verified Carbon Standard (VCS), which is the largest voluntary carbon standard (approx. 80% of market volume, pers. communication). Apart from VCS, Verra hosts e.g. a plastic waste reduction standard or a sustainable development Verified Impact Standard.

The VCS features a methodology development / validation / approval process, requires the application of methodologies, requires a project development process including independent external validation, development of monitoring reports and external verification of monitoring reports (cp. VCS, 2022). VCS cooperates with two independent entities, serving as registries to account for emission reduction certificates issued, transferred and cancelled.

VCS' success is linked to both, i) the inclusion of project scopes such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) and forest management (i.e. for the IPCC category forest land remaining forest land) and ii) to the issuance of permanent credits for non-permanent forest carbon sinks. To this end, the VCS developed a non-permanence risk tool (VCS, 2019), which has proven to be a practical approach compared to e.g. the CDM's procedures for long term- and short term Certified Emission Reductions for afforestation carbon projects. Each project needs to assess its non-permanence risk and needs to supply a share (typically 15-30%) of its emission reduction into that pool. As such, projects from all regions all around the world 'insure' each other. The approach to address non-permanence was mirrored / replicated e.g. by the Gold Standard and the World Bank's Forest Carbon Partnership Facility (cp. FCPF, 2016). VCS is currently trying to determine the minimum threshold of certificates that need to remain in the regional buffer pool, even after project termination (cp. Verra, 2021).

Apart from REDD+ and non-permanence, we would like to note the following aspects of relevance for Article 6 activities:

- VCS methodologies are not necessarily designed to reflect upon an uNDC target, but typically result in a constant BAU estimate.
- Verra welcomes the adoption of the Article 6 Rulebook and notes "Cooperative approaches implemented under the rules for Article 6.2 offer a unique opportunity for countries to use existing GHG crediting programs like the Verified Carbon Standard to create high-quality carbon credits that can be counted toward countries' NDCs under the Paris Agreement" (Verra, 2021).
- In a personal exchange on the 8th December 2021 with Verra's Chief Innovation Officer, Mr Toby Janson-Smith, and Senior Program Director for Development & Forest Carbon Innovations, Ms Julianne Baroody, VERRA indicated that credits held in the VERRA's registry may be stratified into credits i) with CA and ii) without CA. This would facilitate the use of VERRA credits of (i) for neutrality claims and (ii) for contribution claims. VERRA equally emphasized the importance of a world with credits without CA that measure the performance of climate finance streams, supporting their growth of climate finance moving forward.

Conclusions for the development of evaluation criteria

As mentioned under chapter 2.2.3 the methodologies under Art. 6 are still under development. The VCS offers a wealth of methodologies (e.g. in the AFOLU sector) and tools (e.g. non-permanence tool, additionality tool for AFOLU), which are complementary to CDM methodologies, specifically for the AFOLU sector and can thus bring valuable insides for the development of criteria under chapter 2.4. However, VCS methodologies are not sufficient to develop baselines, which are in consistency with an uNDC target of a transferring Party.

Moreover, the use of non-permanence approaches and methodologies for the land use sector (if reflecting the NDC target) may be considered for criteria under chapter 2.4.

2.2.5 Gold Standard

The Gold Standard (GS) is a standard for the generation of voluntary carbon offsets, providing requirements to design projects for "maximum positive impacts in climate and development" (GS, 2021). The GS foundation is based in Switzerland and was created in 2003 by WWF and other international NGOs (Gold Standard, 2022) out of the need to focus on the CDM's first objective, to contribute to the sustainable development of CDM host countries. As such, the GS was initially conceived as a quality label for CDM projects (and serves in this function up to today) and gradually evolved into an independent standard.

In analogy to the VCS, the Gold Standard operates as a standard allowing for the generation and issuance of emission certificates, including processes to develop methodologies, validate and register projects, to monitor performance, verify and issue emission reduction certificates.

Compared to the VCS the Gold Standard features more narrowly-defined eligibility criteria allowing for i) small scale renewable energy projects, ii) community-based energy efficiency measures, iii) land use activities (including afforestation, but excluding REDD+ due to concerns about environmental integrity) and iv) waste management (Gold Standard, 2019).

The GS provides an excellent framework to ensure overall positive SD impacts in a wider sense including i) the Safeguarding Principles & Requirements (GS, 2019b), ii) the 'Stakeholder consultation and engagement requirements' (GS, 2019c) and iii) adheres to the International Labor Organization (ILO) fundamental conventions. ILO's eight fundamental conventions are 1) freedom of association, 2) right to use collective bargaining, 3+4) abolition of forced labor, 5) minimum age, 6) children labour 7) equal remuneration and 8) discrimination (cp. ILO, 2022). All three elements are useful additions for Article 6 activities, increasing assurance that ITMOs are linked to activities featuring a contribution to SD in a wider sense.

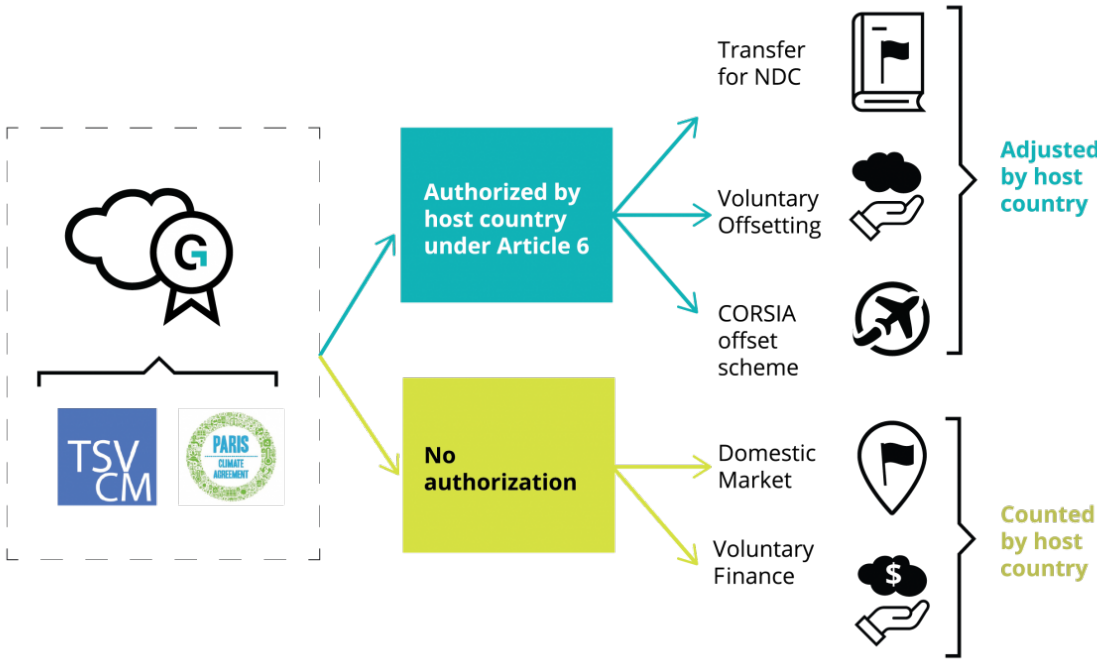
With respect to adoption of the Article 6 Rulebook, the Gold Standard (2021) notes:

- The rulebook provides 'a solid foundation for governments and private actors to use market-based mechanisms to help achieve the goals of both the Paris Agreement and the 2030 Framework for Sustainable Development' (Gold Standard, 2021).
- The Gold Standard developed a practitioner's book for the 'transition of the voluntary carbon market to the Paris Agreement' and offers 'project developers, host countries and other stakeholders wishing to move early in adopting new Article 6 rules and opportunities through an Early Movers Programme' (Gold Standard, 2021).

While the above seems to indicate that all GS projects will be required to conduct CA, this is not necessarily true. Similar to the VCS, GS aims to generate credits with adjustments, which can be used for NDC compliance, for international mitigation purposes, such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), as well as for voluntary offsetting, outside of the transferring mitigation activity.

The GS also envisages to issue credits without CA, which may be used to measure and verify the impact of climate finance. In contrast to the VCS, the GS aims to prescribe also for which functions credits without CA may be used (cp. figure below).

Figure 3: Gold Standard Approach to the Issuance of ERs with and without CA



Source: Gold Standard (2021)

Conclusions for the development of evaluation criteria

The Gold Standard offers a comprehensive set of methodologies and a framework for assuring positive project impacts, which may inform the development of national quality criteria for Germany to approve Article 6 projects. However, similar to the VCS, the GS does not have a framework to assure that baselines are set in compliance with uNDC targets. Similar to the CDM and the VCS, the GS offers methodologies and tools which may be an important building block for the design of Article 6 activities, but which are deficient to assure the design of a reference level in accordance with the transferring Party's unconditional NDC.

Similar to the VCS, the GS offers a registry, which could be used for participating Parties to transfer ITMOs. Most importantly, the GS i) offers requirements for safeguards and for stakeholder consultation and ii) requires compliance with ILO core conventions, which may be considered for the development of criteria under chapter 2.4.

2.2.6 Discussion of findings

This section provides a discussion of the findings with regard to their relevance for the development of criteria for acquiring countries.

From our assessment of the Glasgow outcome, we conclude that the most pressing aspects from the Article 6 negotiations have been addressed, either by adopting detailed CMA decisions, or by advising the Supervisory Body or the Subsidiary Body for Scientific and Technological Advice to work out detailed regulations. Therefore, the Art. 6 rulebook is of most relevance for the criteria development. Thus, criteria in chapter 2.4 are mainly informed by the rulebook. However, based on the above review, it was found, that there are still open issues that remain at this point in time. Moreover, bilateral cooperation's are unique opportunities to incorporate specific needs.

Thus, we consider i) the question of how baselines are to be set in conservative manner in alignment with unconditional NDC targets and ii) the issue of averaging to be open issues, which, in absence of specific CMA guidance, may be addressed by evaluation criteria additionally.

The KliK Foundation as well as the SEA Article 6 pilot programs have detailed frameworks for assessing Article 6 opportunities, which are in general very relevant. In order to assess their specific relevance on criteria level, it is important to contextualize both evaluation frameworks. Both initiatives aim to purchase ITMOs by investing a significant amount of money in mitigation activities. The requirements of the evaluation approach used for this purpose may differ from requirements applied by a country that engages in the cooperative approach as a participating Party but investments are made by the private sector / ITMOs are used for other purposes.

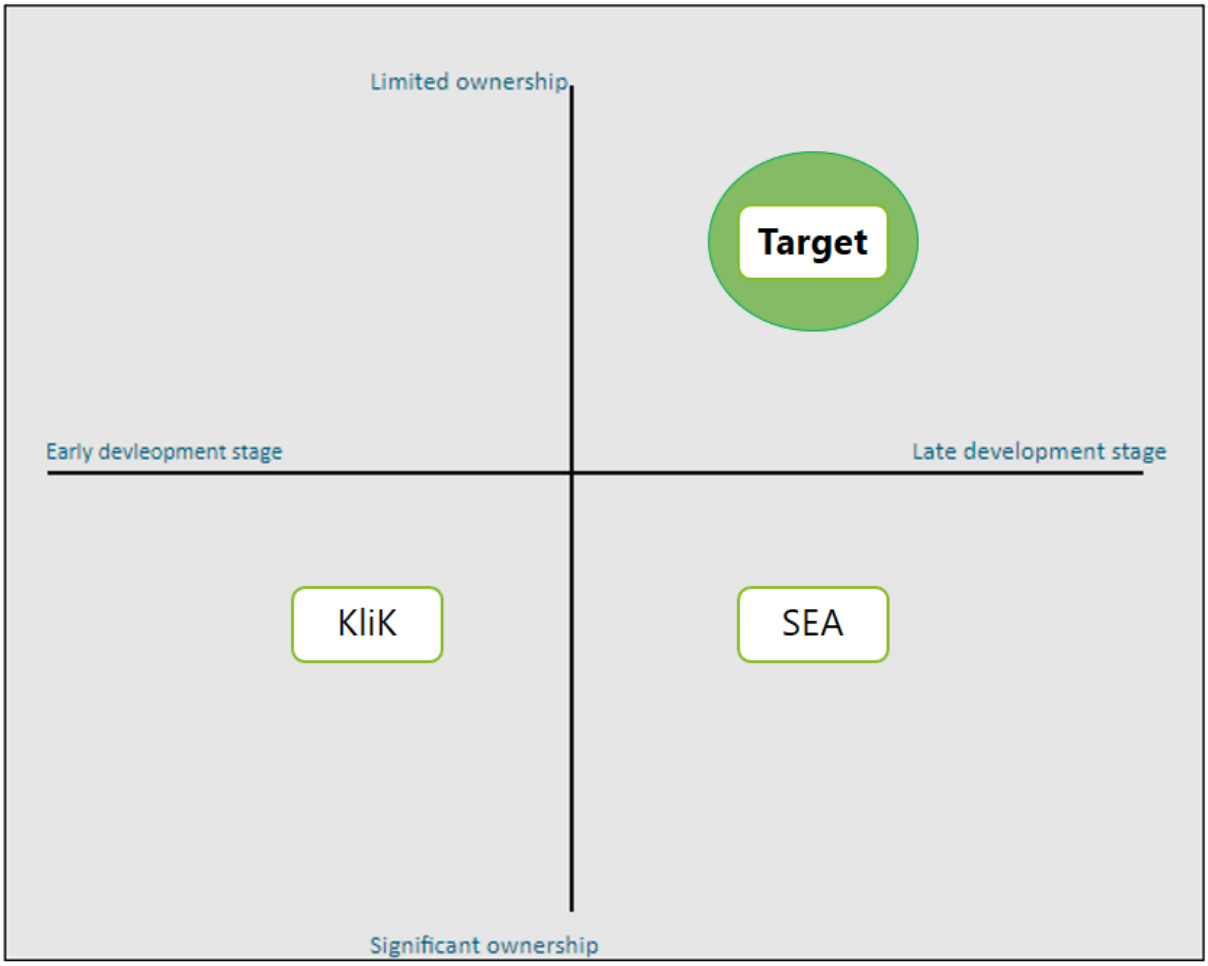
It is important to compare these two initiatives to a setup of a simple transfer without investment. For such a comparison, we suggest two parameters, ownership and development stage. Ownership refers to whether the acquiring Party is investing (significant ownership) or just authorizing transfers e.g. to Germany, but investments are done e.g. by a private company (limited ownership). Second, evaluation criteria may be applied in the early development stage, e.g. at identification note level, or late, based on a developed MADD.

Applying these parameters, we note:

- KLiK Foundation uses its evaluation framework to decide whether or not to invest in an Article 6 opportunity. The evaluation framework is applied at a concept note level. Therefore, only a comparably limited number of evaluation criteria are applied (i.e. 14).
- The SEA Article 6 Pilot Program also aims to invest into mitigation activities. However, SEA applies the criteria on draft MADDs and hence uses a much more comprehensive assessment framework (i.e.22 criteria and 77 indicators).
- The evaluation criteria developed in chapter 2.4, by contrast, are not necessarily bound to investments by the acquiring Party (limited ownership). Furthermore, it is assumed that the framework will be applied to activities that are at a later stage of the activity development process. For instance if a private sector entity requests a national emission trading authority to assess the eligibility of project to transfer ITMOs to e.g. Germany, then this is likely to occur at a later stage of program development.

The figure below maps these three different approaches, with the ‘target’ representing the setup for which the criteria in chapter 2.4 are formulated (cp. chapter 2.1).

Figure 4: Application of evaluation frameworks



Source: Own illustration.

Consequently, criteria for a potential involvement of e.g. Germany in Art. 6.2 developed in chapter 2.4 need to take into account both, i) that proposed evaluation framework does not aim to facilitate investment decisions and hence less efforts in the due diligence process may be appropriate and ii) that evaluation criteria for assessing the transfer of ITMOs may come comparably late in the development stage. Both aspects may lead to deviations from the comprehensive evaluation frameworks developed by Switzerland and Sweden. However, these frameworks provide important reference points for inter alia:

- Exclusion of certain project types;
- Approaches for accurate and transparent baseline setting;
- Approaches for the assessment of financial additionality and the additionality to the uNDC target;
- Blending of carbon finance with climate finance; and
- Assuring sustainable development impacts and safeguards;

Our review of the Gold Standard and the Verified Carbon Standard leads to the following conclusions:

- The VCS offers a wealth of tools and methodologies specifically for the AFOLU sector including the approach for addressing non-permanence of forest carbon stocks and related emission reductions;
- The Gold Standard offers guidance for assuring significant development impacts, a grievance process and requirements for comprehensive stakeholder involvement in the design of the mitigation activity.

Both are important issues which inform the criteria under chapter 2.4, especially criteria N°4, 16-17 and 19-21.

2.3 Allocation of mitigation outcomes on activity level

The allocation of mitigation outcomes (MO) either to the transferring Party (supporting the achievement of the uNDC) or the acquiring Party may be a topic with increasing importance, as Article 6 moves from drawing boards towards implementation. Moving from project approaches (e.g. carbon finance for a hydropower plant) to policy-based approaches (e.g. a carbon incentive scheme for electric vehicles complementing the introduction of a fuel economy standard) may require abandoning traditional concepts (e.g. carbon buyer receives all emission reductions) in favour of differentiated concepts, based on who contributes what (carbon buyer funds the MOs related to EVs, fuel economy standard regulates the private sector to invest into more efficient vehicles and may be allocated to the transferring Party's uNDC).

The subsequent section aims to discuss how project approaches / elements may lead to the allocation of MOs to either the transferring or acquiring Party.

At the activity level, differing circumstances may lead to differing approaches to allocation. The subsequent section briefly discusses four options, without claiming completeness.

- Actor dimension: the financing Party acquires all MO;
- Spatial dimension: the MO distribution differs depending on the geographical location of the mitigation measures;
- Technology-dimension: MO distribution differs according to the components used;
- Temporal dimension: the distribution of MOs changes over time.

Option 1: Acquiring Party receives all MOs

Traditionally, the acquiring Party of ITMOs receives all MOs. Details may depend on whether the transferring Party commits to deliver a fixed amount of ITMOs, or whether the acquiring Party agrees to co-fund and all MOs are then allocated to the acquiring Party / the acquiring Party assumes a part of the project risk. But overall, this is considered to be the conventional approach to the allocation of MOs, i.e. all MOs are transferred as ITMOs to the acquiring Party.

Option 2: Spatial allocation

A second option is to consider the allocation of MOs depending on location. In some NDCs, the government commits as part of the uNDC e.g. to distribute a certain amount of energy efficient cook stoves in province A. The acquiring country may decide to invest into additional cook stoves in a neighbouring province B. In such a setup, the transferring Party may receive the MOs

generated by the activity in province A, while the acquiring Party may receive the MOs generated by the activity in province B.

Option 3: Allocation by technologies

Moreover, the allocation may of MOs may be linked to different technologies. To provide an example, BMUV is funding the development of an Article 6 program for Botswana, Namibia, Eswatini and RSA, which features two mitigation effects:

- Indirect emission reductions: The first effect is related to the introduction of a minimum energy performance standard, which may regulate the energy efficiency of AC devices, resulting into a reduction of electricity consumption and hence indirect emissions related to power generation.
- Direct emission reductions: A second effect is related to the promotion of natural refrigerants in energy efficient ACs (to be used instead of other refrigerants, which are highly potent GHGs and equally contribute to depleting the ozone layer). The promotion of natural refrigerants may be subsidized by a carbon-backed incentive payment.

The initial concept foresees that the direct emission reductions are allocated to Germany as acquiring Party and the indirect emission reductions are allocated to transferring Parties.

Option 4: Change of allocation over time

Finally, the allocation of MOs may change over time. Reflecting unconditional efforts of transferring Parties, it is be important to consider changes in policies and regulations, which may require an increased allocation of MOs to the transferring Party.

Box 3: Increase in carbon tax may lead to an increase of MOs allocated to South Africa over time

To provide a practical example, SEA funded the development of a MADD for the production of green hydrogen and green ammonia in South Africa. Parties might decide to allocate the MOs also as a function of carbon tax increases.

The technical feasibility study was developed based on 2021 prices. Already in 2019, South Africa incorporated a carbon tax with 127 Rand / tCO_2 with a planned carbon price increase of 10% for 2022.

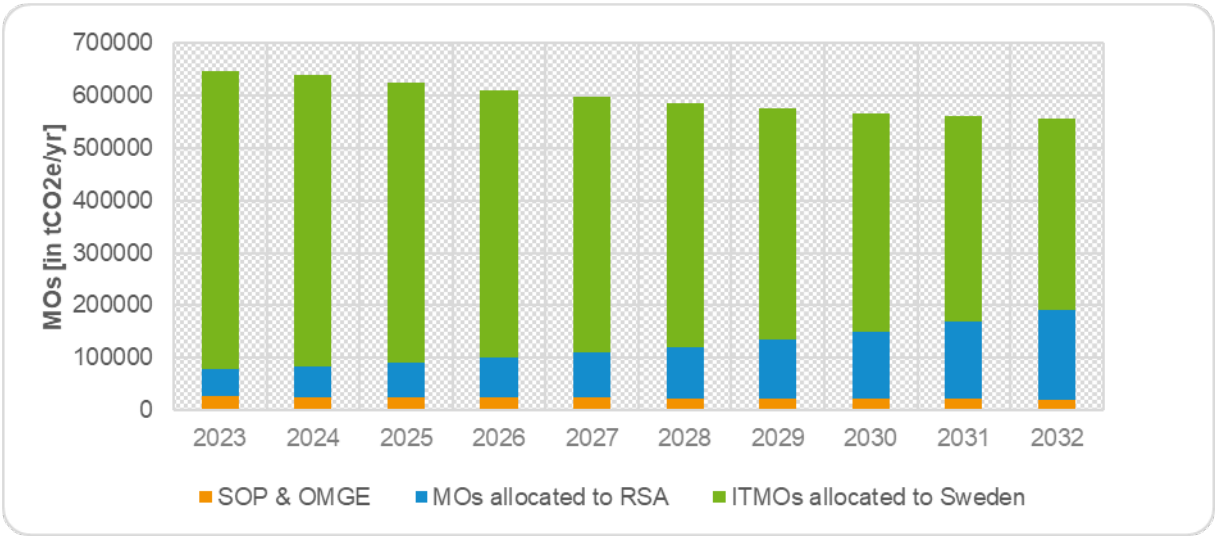
For our example, we presume that the carbon tax progression persists on annual basis, being the end of the crediting period, which leads to the carbon tax for the production of industrial ammonia increases from 38.48 EUR/t NH3 to 90.74 EUR/t NH3 in 2032. Equally we presume that all current tax exemptions become removed.

- The price for green ammonia is determined by the market price for industrial ammonia. If due the carbon tax, the market price for ammonia increases, then, the mitigation activity needs less carbon revenues to achieve the financial viability. The below figure illustrates this scenario: As discussed in box 2 above, due to a decrease of the reference level, the MO volume decreases from 0.62 Mt CO_2e in 2023 to 0.49 Mt CO_2e in 2032.
- A part of the MOs may be allocated to RSA (8.3% in 2023, due to the carbon price increase since the completion of the feasibility study, and 34.6% in 2032). The increase in carbon taxes reflects an increasing contribution of the transferring Party and may lead to an increase of attribution to the transferring Party.

- Sweden, as the acquiring Party, would receive 92.7% of ITMOs in 2023 and only 65.4% in 2032. However, the carbon payments would decrease directly correlated.

The above example for now is a hypothetical exercise as the allocation was not (yet) negotiated by Parties in this or a similar way. Yet the discussion illustrates possible complexities that may evolve when considering planned and future policies and related allocation of ITMOs.

Figure 5: Change of allocation over time due to possible carbon tax increments



Source: Own illustration

Conclusion for the development of evaluation criteria

The above section discussed briefly different approaches for allocation, which may need further analysis and practical testing. Based on the current understanding, Article 6 design can take the following forms:

- A narrow accounting approach (e.g. with spatial allocation – parties may decide to monitor the performance of mitigation activities in province A and province B separately, eliminating the need for allocation), or
- A wider accounting framework (e.g. with allocation over time - it may be difficult to forecast the evaluation of the carbon tax prices over time), where parameters may change over time.

Against this background, we suggest to consider the issue of attribution specifically in contexts where planned future policies may result into a variable framework, determining carbon price required to assure financial viability. Following the above definition of allocation, it is noted that allocation per se does not lead to an increase or decrease of ambition.

2.4 Evaluation principles and criteria for Article 6 mitigation activities

The adoption of the Article 6 Rulebook by CMA3 will speed up the development of the carbon market including both, increased demand and supply.

While CMA3 mandated the UNFCCC Secretariat to process Article 6.4 projects, it seems likely that first Article 6.2 projects may be submitted before substantial progress is made regarding standards setting, as well defining procedures, guidelines and methodologies. Therefore, projects will most likely be submitted at a time where little reference can be made to guidance developed under Article 6.4.

The below section proposes a set of basic principles and criteria for assessing Article 6 mitigation activities. These were developed based on the subsequent approach:

- Article 6.1 of the Paris Agreement already establishes the three principles environmental integrity, raising ambition and sustainable development. The three guiding principles have further been operationalized with the adoption of Decision 12a for Article 6.2 and Decision 12b/CMA3 for the Article 6.4 mechanism. Environmental integrity is a central principle, as it assures that the estimate of the emission reductions is accurate, where possible, or (where not) conservative. Ambition raising is important, principle, as Article 6 shall not only allow Parties to meet their emission target cost effectively, but such cost advantages shall lead to more climate action. Finally, contribution to sustainable development is a key Article 6 principle, as it ensures that activities do no harm and contribute to the local development. It was determined that these commonly accepted principles should guide the further analysis.
- In the preparation of a roundtable discussion, the UBA experts, supported by the consultant, formulated guiding questions for quality criteria of Article 6 activities.
- UBA, KliK Foundation, SEA, as well as the Swiss Federal Office for the Environment and the German Federal Ministry for the Environment conducted a roundtable discussion for the quality criteria of Article 6 activities. The discussion took place on the 10th January 2022. As the meeting was held under Chatham house rules, insides are not expressed in detail.
- Finally, these quality criteria were complemented by the findings summarized in chapter 2.2 above.

This approach led to the formulation of criteria for the assessment of Article 6 activities, provided by the table below.

The proposed quality criteria are suggested as exclusion criteria; if an Article 6 activity does not meet one of these criteria, it may not be approved. The criteria cover country specific- and project specific aspects and may be applied jointly. Country specific criteria however may be used independently by the acquiring Party to identify suitable strategic partnerships with possible transferring Parties.

Table 4 Evaluation Principles and Criteria for Article 6 Mitigation Activities

Principle Level	ID	Criterion / Justification
Environmental Integrity		
Activity Specific	1	The Article 6 activity is based on an eligible activity type. The following project types are excluded: Mitigation activities which lead to a lock-in of fossil fuel technologies such as e.g. refurbishment of an oil boiler; projects reducing HFC-23, adipic N2O, Large scale (i.e. > 20 MW) grid-connected renewable power from hydro, wind, and photovoltaic (i.e. not including concentrated solar power) in non-LDCs, and nuclear power. Justification: Even when reducing GHG emissions, mitigation measures that extend the lifetime of fossil fuel technologies are not in line with the Paris Agreement objective.

Principle Level	ID	Criterion / Justification
		While being financially additional, HFC-23 and adipic N2O projects are excluded, as these projects may lead to adverse incentives (cp. Commission Regulation (EU) no 55/2011, §7); Due to the significant decrease of levelized cost of electricity generation of large-scale wind, photovoltaic and hydro (cp. Irena, 2021), related projects may be funded based on uNDC efforts (e.g. a feed-in-tariff) and existing financing facilities. They do not require carbon finance. This does not apply to least developed countries, as difficult framework conditions increase the cost of capital, favoring technologies with low capital expenditure and high operational expenditure (such as diesel generators, gas turbines etc.). Equally, concentrated solar power is eligible, as it exhibits higher levelized costs of electricity (cp. Irena, 2021), generates 'firm' power and hence is complementary to cheaper variable renewable energy technologies, such as wind or PV.
Activity Specific	2	The Article 6 activity used financial analysis to demonstrate additionality reflecting current and planned future policies (e.g. the introduction of a carbon tax etc.). Justification: The application of barrier analysis, first of its kind or similar is considered to be inadequate for the demonstration of additionality under the Paris Agreement. To reflect the uNDC efforts, the project must consider planned future policies.
Activity Specific	3	The Article 6 activity employs a baseline, which is in compliance with the transferring Party's uNDC target (e.g. projected below BAU, best available technology, or performance-penetration approach) and may consider a linear interpolation of current BAU emission (i.e. at the time of the project start) and the end of the crediting period (e.g. 2030). Justification: Simple BAU scenarios assuming constant baseline GHG emission intensity may be inconsistent with an uNDC committing to a decrease of total and/or specific emissions. A single-year target value of the uNDC needs to be interpolated between project start (e.g. 2023) and the end of the crediting period (e.g. 2030).
Activity Specific	4	In case of a LULUCF project, the project needs to take the risk of non-permanence into account by e.g. applying a non-permanence risk tool and fully account for reversals. Justification: The issuance of permanent emission reduction/carbon removal certificates for reversible forest carbon sinks is assured through the uNDC achievement[1], the project needs to assure against loss events.
Activity Specific	5	The activity features GHG estimates that are consistent with IPCC GPG 2006 methodologies and the 2019 update. Where possible, the activity shall use existing best practice approaches, and consider existing methodologies, tools and standards from the CDM, Gold Standard and VCS, which shall be adapted to compliance with the Paris Agreement objective. Justification: The project needs to estimate GHG emissions and related emission reductions in line with the IPCC good practice for national GHG inventories, which will assure consistency with the national GHG inventory and all related communications with UNFCC including the NDC.
Activity Specific	6	In the case of blending of financing sources: The relationship between the grant-equivalent financing already provided/pledged and the funding mobilized through ITMO transaction shall be clearly explained. Justification: Following Füssler et al (2019), the blending of climate finance with carbon finance may lead to a reduction of carbon price. This may reduce the volume of climate finance, which is then not available to fund other mitigation

[1] Similar to Joint Implementation, the risk of reversal is assured by national efforts to achieve the uNDC target for the LULUCF- and other sectors covered under the NDC. If a loss event occurs within the mitigation activity area, and if the transferring has issued ITMOs for the carbon sinks in that area, then it must overcompensate the loss through other removals and/ or reduction of emissions. Otherwise it will fail to deliver on its uNDC target.

Principle Level	ID	Criterion / Justification
		measures / generate other emission reductions. Hence, blending climate finance and carbon finance has a negative effect on the reduction of emissions, which may compensate or overcompensate the ITMO volume.
Activity Specific	7	Uncertainties in calculations shall be identified and minimized; provisions shall be included that adequately ensure future adherence to this requirement. Justification: The systematic identification and minimization of uncertainties in the GHG emission estimates, as required by the IPCC GPG, increase accuracy and assures transparency.
Activity Specific	8	Leakage risks shall be identified, monitored and minimized and/or discount factors for crediting approach should be introduced. Justification: The systematic identification and minimization of leakage risks in the GHG emission estimates increase accuracy and assures transparency.
Country Specific	9	The country shall have submitted a credible and ambitious NDC to the UNFCCC. The credibility may be demonstrated by using, e.g. the assessments of internationally accepted think tanks, such as Climate Action Tracker. Justification: An NDC including an incredible business-as-usual scenario (economy-wide) may lead to an inflated baseline, the issuance of ITMOs, w/o being backed with real emission reductions and create windfall profits. Equally supporting a transferring Party in mitigating more than committed to in an highly or critically insufficient uNDC target may create adverse incentives for other Parties.
Country Specific	10	If the country uses a single-year target, the crediting must be based on interpolated multi-year trajectory. Justification: Translating the single-year target into a multi-year trajectory shall avoid over- or under crediting, as discussed by Simeons et al. 2021.
	11	…
Ambition Raising		
Activity Specific	12	The project shall document how it contributes to transformational change by e.g. introducing a new technology or by complementing the introduction of new regulation (e.g. a carbon finance scheme complementing the introduction of a minimum energy performance standard). Justification: The mere generation of emission reduction certificates will entitle other entities (exhibiting higher marginal abatement cost) to emit more GHG emissions. The procedures stipulated by 12a/CMA3 require activities to report on OMGE, however, this may be equally set to zero. Hence activities are required to document how they intend to contribute to transformational change. On a project level, it is suggested to consider transformational change, instead of increase of ambition (cp. Olsen et al., 2021). Increase of ambition is defined as the submission and implementation of a more ambitious uNDC, which seems a big ask for a single mitigation activity. To contribute to transformational change seems however to be a reasonable request for Article 6 activities.
Country Specific	13	The transferring Party has submitted an updated NDC to the UNFCCC Secretariat. Justification: The submission of an updated NDC demonstrates that the transferring Party complies with its obligations under the Paris Agreement.
Country Specific	14	The country has adopted a target for achieving climate neutrality and communicated this either in its LT-LEDS and/or updated NDC to the UNFCCC Secretariat. Justification: The existence and its official communication of a climate neutrality target is an indication for the transferring Party's commitment to contribute to the achievement of the Paris Objective (cp. Olsen et al 2021).
	15	…
Sustainable Development		

Principle Level	ID	Criterion / Justification
Activity Specific	16	The Article 6 activity shall document its contributions to the SDGs prioritized by the host country beyond SDG 13 and considering the host country's strategies for SDGs. Justification: Taking SD more seriously, sustainable development must not be constrained to impacts to SDG13 (e.g. adipic N2O or HFC-23 project-like impacts do not suffice). Hence, a thorough documentation of SD impacts e.g. on SDGs, including possible negative impacts is required.
Activity Specific	17	The mitigation measure shall monitor its SD impacts. Justification: Mitigation measures have positive as well as negative impacts on social, ecological and/or biodiversity spheres. Some of these impacts may be strictly linked with the performance of the mitigation measure (which may be fixed ex-ante). If SD impacts are not strictly linked with the measures' performance, then the monitoring of SD impacts is required.2
Activity Specific	18	The mitigation activity has SD safeguards in place following international best practice, such as e.g. the Gold Standard's 'Safeguarding Principles & Requirements'. Justification: A project may have many adverse impacts that need to be avoided, reduced and offset, which may be facilitated by the establishment of SD safeguards.
Activity Specific	19	The mitigation activity conducts comprehensive stakeholder consultations, prior to the start of the project implementation, in line with international best practices, such as e.g. Gold Standard's 'Stakeholder Consultation and Engagement Requirements'. Justification: The conduction of appropriate consultations increases the assurance that stakeholders' views and needs are considered in the overall activity design.
Activity Specific	20	The mitigation activity adheres to the ILO's eight fundamental conventions. Justification: Respecting the freedom of association, the right to use collective bargaining, the abolition of forced labor, minimum age, child labour, equal re-numeration and discrimination will support alignment with human rights and increase overall well-being.
Country Specific	21	The transferring Party has an independent grievance process in place to facilitate disputes e.g. from local communities affected by the project. Justification: While respecting transferring Party's sovereignty, an independent grievance process supports that the mitigation measure is implemented in line with human rights obligations and without corruption.

Please note that the above criteria are conceived in addition to the requirements and procedures laid out by the Article 6 Rulebook. Hence, essential criteria, such as the commitment to apply CA are not included, as these are already adequately prescribed by decision 12a/CMA3.

2.5 Conclusions

The above analysis leads to the formulation of the subsequent conclusions:

- Article 6.1 of the Paris Agreement already establishes the three principles environmental integrity, raising ambition and sustainable development. The three guiding principles have further been operationalized with the adoption of Decision 12a for Article 6.2 and Decision 12b/CMA3 for the Article 6.4 mechanism. While the latter will be guided by detailed provisions, Article 6.2 is designed as a flexible accounting and reporting framework with

[2] To provide a practical example: The mitigation measure consists of the construction and operation of an ammonia plant using green hydrogen. The plant will create 600 new jobs. The GHG related monitoring requires the measurement of ammonia produced, which is only possible if the plant is well staffed. Hence, the monitoring of jobs created may not be necessary and can be fixed ex-ante. The number of jobs created specifically for women however is not fixed ex-ante and may require monitoring. Similarly, the quality of the jobs in terms of working conditions, remuneration, etc. must be monitored.

minimum requirements that allow for crediting of mitigation activities within government-to-government cooperation. The design of Article 6.2 inherently assumes that functions such as the development of robust GHG emission estimates or the development of a registry for the issuance and transfer of ITMOs are regulated by participating Parties themselves. As such, a hypothetical agency in charge of evaluating such projects may formulate additional quality criteria to assure environmental integrity, raising ambition and strong SD impacts.

- Assessing the demand side of Article 6 activities allows to identify different options of how ITMOs may be used as an acquiring Party. Options include the use of ITMOs for a national climate target exceeding the NDC (for which separate reporting may be challenging), but ITMOs could equally be used for the VCM, for emission reduction obligations under CORSIA or allowing to use ITMOs for offsetting a part of the private sector's nETS obligations.
- The use of ITMOs for nETS, CORSIA and the VCM may require the development of specific regulations, which e.g. require the VCM participants to i) report emissions e.g. according to the WRI's GHG Protocol, to ii) develop ambitious targets for reducing corporate emissions according to international best practices e.g. SBTi's Net Zero Initiative Standard and finally iii) offset remaining emissions by using ITMOs (i.e. offsets with CA, avoiding double counting) complying with a list of quality criteria, being additional to the Article 6.2 guidance.
- The subsequent section aimed to develop possible evaluation criteria and indicators for collaborating with individual mitigation activities and selecting suitable partner countries for Germany. For this purpose, we analysed the Article 6 rulebook agreed in Glasgow as well as the evaluation criteria used by the KliK Foundation and the SEA. The analysis was complemented by a review of the VCS and Gold Standard, the private certification standards most widely used in the VCM.
- Our review of the Decisions 12a and 12b/CMA3 and related literature allows to identify two relevant issues, which may need to be addressed. These are perceived to be:
  - Inconsistencies in accounting despite technical notes being published prior to COP Glasgow.
  - Lack of guidance for the establishment of conservative reference levels in line with unconditional NDC target.

Both issues may be addressed in the context of individual cooperative approaches, for instance by agreeing on respective provisions in transfer agreements.

- Both, the KliK Foundation as well as SEA developed useful evaluation criteria and indicators, which may be a strong foundation for developing quality criteria for assessing Article 6 activities. However, these criteria are developed for taking co-funding decisions in Article 6 activities and may be too demanding, compared to e.g. authorizing solely the transfer of ITMOs to Germany.
- The review of the VCS indicates that the VCS and GS have useful elements to assure a high quality design of Article 6 activities, notably the VCS AFOLU tool and methodologies and GS' safeguarding principles, stakeholder engagement requirements and the reference to eight fundamental ILO conventions. These are useful references for considering a suitable set of quality criteria for a hypothetical agency in charge of Art 6.2 implementation for Germany.

- With Article 6 moving from drawing board to practical implementation, the allocation of MOs either to transferring Party or (as ITMOs) to the acquiring Party may be a topic with increasing significance. This may hold true specifically for policy-based activities and for reflecting planned, future policies.
- Based on the review of SEA's and KLIK's evaluation criteria, our analysis of the VCS, GS we propose 21 quality criteria, which aim to assure environmental integrity, ambition raising and sustainable development, exceeding / complementing the provisions of the Article 6 rulebook. These criteria reflect a first version which may be developed further in the course of this research project; equally it require further stakeholder consultation and amendment.
- It is recommended to consider procedures and regulations that specify how quality criteria may be applied. It may be possible to conceive a framework, where all activities, which wish to transfer ITMOs to a German account, may need to comply with additional quality criteria. Besides a broadly accepted set of criteria, such an approach may require additional regulations and procedures e.g. for updating the criteria on biannual basis.

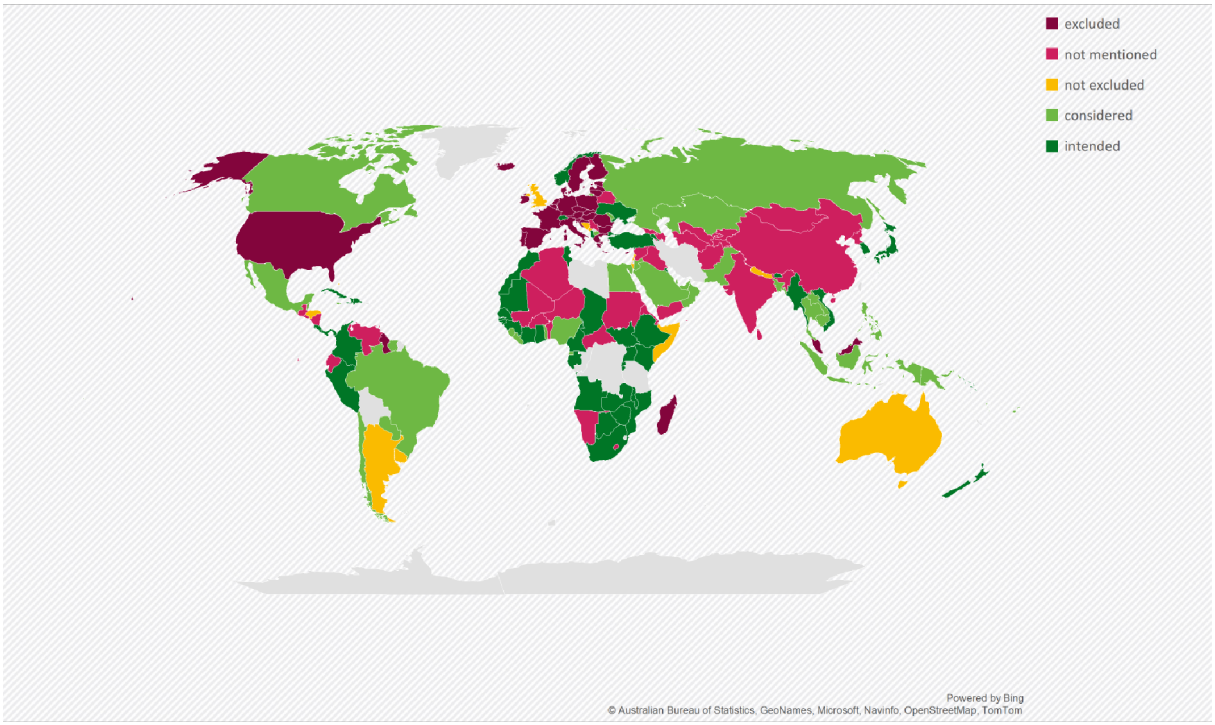
3 The role of Article 6 in Parties' NDCs

In order to assess whether there is interest in engaging under Article 6, an analysis of 195 NDCs submitted by Parties to the UNFCCC until September 2022 was conducted. The findings from the analysis were compiled in a fact sheet (Kreibich, 2024) that can be downloaded from the German Environment Agency's website.

The NDC analysis finds that there is considerable openness towards Article 6, in principle, with more than 50 per cent of the NDCs analyzed containing language that expresses the intention to use Article 6 or the consideration to do so. Most NDCs do not contain any information on the specific types of voluntary cooperation. Appearing in 34 out of 195 NDCs analyzed, the type of voluntary cooperation most frequently mentioned by Parties is cooperative approach. It should be noted however, that the term is by some used to refer to any type of voluntary cooperation. In terms of regional distribution, we find that Africa is the continent with the largest number of Parties that have included in their NDC a reference to the specific type of voluntary cooperation. As can be seen from Figure 6 below, there is also a general openness towards Article 6 among African Parties, while other regions in particular from the Global North but also Asia are less open towards using Article 6.

The findings further indicate that Parties' willingness to buy ITMOs is limited: While more than 50 countries have indicated their intention to sell ITMOs, only 11 consider themselves as potential buyers. In this context it is, however, important to highlight that that this does not automatically translate into an actual market imbalance, as the relationship between demand and supply will depend on the volumes traded and not on the numbers of Parties involved. Furthermore, almost one third of the NDCs analyzed do not specify whether the respective Party intends to buy or sell ITMOs and there might further be other sources of demand such as corporate buyers from the voluntary carbon market. The findings from the NDC analysis indicate that a more in-depth analysis of individual countries is needed, as the NDCs do not necessarily reflect the latest positioning of governments towards the use of Article 6. This could also provide a more detailed picture about the role of Article 6 in specific sectors and how it could contribute to the conditional and unconditional elements of Parties' NDC.

Figure 6: World map showing basic openness towards Article 6



Source: Kreibich (2024)

4 Assessing the applicability of the evaluation principles and criteria: case studies

4.1 Introduction and background

This section presents the findings from an applicability check of the evaluation principles and criteria developed within the framework of the project. For this purpose, semi-structured qualitative interviews were conducted with local experts from Indonesia and South Africa (see A.1 in the Annex for experts interviewed). The interviews were conducted on the basis of a catalogue of guiding questions, which were shared with the interviewees in advance. In addition, the interviewees also received the principles and criteria. The selected interview partners are not affiliated to governmental organizations but are all recognised experts strongly involved in the national discussions and developments around Art. 6 in the respective countries.

4.2 Analysis and selection of case studies

Indonesia and South Africa were selected as case studies based on an analysis tool created by the project team, which uses various indicators to identify suitable partner countries. These indicators are based on a variety of sources, one of which and the most important are the Nationally Determined Contributions (NDC). The database created by the project allows for a comprehensive global (meta-) analysis of 197 countries to assess and narrow down cooperation potential based on a set of elaborated political, economic, and social indicators.

The tool aims at identifying potential partner countries that might be interested in collaborating with Germany on Art. 6. The global analysis is conceptually designed as a multi-criteria analysis to support decision making, conducted by means of an easy-to-use spreadsheet tool and data base. The outcome of the analysis is a list of potentially suitable countries that may qualify for Art. 6 cooperation, sorted by overall ranking scores.

Therefore, the tool applies rules and scoring techniques for indicators related to

- NDCs (qualitative analysis of key statements regarding Art. 6 section in NDCs),
- Framework conditions for investments in climate change mitigation activities,
- Policy, governance and social framework conditions.

The results of the NDC analysis conducted in the framework of the study together with available information from existing data bases have been compiled and standardized by means of employing rating and ranking methods, developing respective scales and conducting the scoring in order to make the standardized data comparable.

To use the tool, some important information and principles must be observed:

- **Principle 1:** There are criteria that exclude countries directly from the analysis.
  - "Basic openness to Art. 6"
  - "Country's role as buyer or seller of credits"

Most of the developed countries have excluded the use of Art. 6 to achieve their NDC. Therefore, they are automatically excluded from the analysis if the "basic openness to Art. 6" has not been

explicitly stated in their NDC. However, such political decision may change in future as NDCs are updated.

If a country's NDC states that the country would like to participate in the international carbon market only as a buyer of Internationally Transferred Mitigation Outcomes (ITMO), it will also be excluded from further analysis. The explanation of excluding a country based on this criterion is straightforward – the country does not qualify as a cooperation partner for Germany which needs a partner country that is willing to sell and/or transfer ITMOs.

- **Principle 2:** Weighting factors allow for adjusting scores in the overall ranking for each country passing the exclusion criteria.

With this function the user is able to weight variables. If, for example, the variable "Governance" plays a more important role to the user than "Country risks", the user can score one variable higher than the other (e.g. "Governance" with a 6 and "Country risks" with a 2).

- **Principle 3:** The country listing is variable and may be defined by the user. The user is free to consider and add different aspects such as the list of Official Development Assistance (ODA).

Results can be filtered according to continent and/or status. A coding spreadsheet provides more options for adjusting the scoring and thus results according to the objectives of analysis. Prior to running an analysis, default values can be changed.

Table 5 Overview on criteria, indicators and references

Criterion	Indicator No.	Indicator	Reference
Statement of key words pertaining to Art. 6 in NDC	1	Art. 6- Basic openness	Qualitative analysis of Art. 6 section in NDC conducted in the frame of the study
	2	Role as buyer or seller	Qualitative analysis of Art. 6 section in NDC conducted in the frame of the study
	3	Concretization of Art. 6.2 and/ or 6.4	Qualitative analysis of Art. 6 section in NDC conducted in the frame of the study
	4	Environmental Integrity: Avoidance of double counting	Qualitative analysis of Art. 6 section in NDC conducted in the frame of the study
	5	Attribution of Art. 6 to conditional / unconditional target	Qualitative analysis of Art. 6 section in NDC conducted in the frame of the study
Framework conditions for investments	6	Country risk Allianz Trade country risk ratings Trading Economics credit rating	Stamer (2022), Trading Economics (2022)

Criterion	Indicator No.	Indicator	Reference
	7	Regulatory framework Ease of Doing Business Index	The World Bank (2021)
Policy framework conditions	8	Corruption Corruption Perceptions Index	The World Bank (2021), Transparency International (2021)
	9	Governance World Bank Governance Indicators	Kaufmann and Kraay (2020)
Social framework conditions	10	Social and Employment standards Green Growth Index (social inclusion) Labor rights index	Acosta et al. (2020) WageIndicator Foundation (2020)

4.3 Case Study: Indonesia

4.3.1 Nationally Determined Contribution and Role of Article 6

Indonesia has submitted its updated nationally determined contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) in September 2022. With this update, the unconditional target was improved from 29 percent to 32 percent below its business-as-usual (BAU) scenario, while the conditional target was increased from 41 percent to 43 percent below BAU (including land use, land use change, and forestry - LULUCF) (Government of Indonesia, 2022). Despite these improvements, the Climate Action Tracker (CAT) rates both targets as “critically insufficient” and considers Indonesia's overall climate targets and policies to be “highly insufficient”. To enhance the level of ambition, the CAT calls for a speeding up the phase-out of coal power plants, increased use of renewable energy potential, and a substantial decrease of LULUCF emissions. By formulating the NDC targets relative to historical emissions instead of BAU scenarios, Indonesia could further increase the transparency of its targets (CAT, 2022).

In its NDC, Indonesia expressed its openness towards bilateral, regional and international cooperation under Article 6 of the Paris Agreement to support Indonesia’s climate mitigation and adaptation efforts (Government of Indonesia, 2022). With regard to carbon pricing at the domestic level, Indonesia is currently in the process of introducing several market-based instruments. In February 2023, the launch of a mandatory, intensity-based ETS for the power sector was announced. Initially, the ETS will cover 99 coal-fired power plants that account for more than 80 percent of the country’s national power generation capacity (World Bank, 2023). Eventually, the new ETS will work alongside a carbon tax. Initially to be introduced in 2022, the launch of the carbon tax was now postponed likely until 2025 (ICAP, 2023).

4.3.2 Indonesia as a host country for carbon market activities

Under the Kyoto Protocol, Indonesia could only benefit to a limited extent from the market-based mechanism, hosting 156 activities registered under the Clean Development Mechanism

(CDM). This corresponds to a share of less than two percent of the 8238 activities registered globally (UNFCCC, 2023).

On the voluntary carbon market (VCM), Indonesia is being much more successful in attracting private funding, in particular in the forestry sector: "REDD+ projects in Indonesia are commercial 'heavyweights' in global voluntary carbon markets and among the largest suppliers of carbon offset credits in the world" (Nofyanza et al., 2023).

Lately, Indonesia has been sending mixed signals to the international carbon market community: In March 2022, the Indonesian Ministry of Environment and Forestry ordered to halt a validation process of a subnational carbon project under the Verified Certification Standard (VCS). The Ministry argued that the substance of the carbon project report was not in line with applicable laws and regulations. More specifically, it was considered that the Presidential Regulation No. 98 issued in 2021 was not adhered to and that this might lead to a situation in which Indonesia misses its NDC due to double counting (Mulder, 2022).

The Presidential Regulation No 98 (President of the Republic of Indonesia, 2021) acts as a legal foundation to regulate carbon trading and carbon markets in Indonesia. However, many details are left to be regulated in the implementing regulation and more clarity was needed regarding the specific roles of actors and stakeholders (Sulistiawati & Buana, 2023). In October 2022, such an implementing regulation was published by the Ministry of Environment and Forestry in the form of Regulation Number 21 of 2022 on Procedure for Implementation of Carbon Pricing (Minister of Environment and Forestry, 2022). Regulation Number 21 establishes provisions and criteria for emissions trading, carbon crediting as well as results-based payments.

4.3.3 Criteria for identifying and assessing Article 6 mitigation activities in Indonesia

This section explores the suitability of the criteria developed within this research project for assessing Article 6 mitigation activities in Indonesia. The section builds on insights from interviews with local experts and an analysis of Regulation Number 21 of 2022 on the Implementation of Carbon Pricing (Minister of Environment and Forestry, 2022).

Eligibility of mitigation activities

Indonesia has defined a list of sectors (and sub-sectors) in which carbon pricing is allowed in principle. The sectors are:

- energy,
- waste,
- industrial processes,
- agriculture,
- and forestry as well as other sectors that are in accordance with the development of science and technology.

The subsectors include:

- power plant;
- transportation;
- construction;

- waste;
- waste water;
- solid waste;
- industry;
- rice field;
- livestock;
- plantation;
- forestry;
- peat and mangrove management;
- and/or other Sub-Sectors in accordance with the development of science and technology (Minister of Environment and Forestry, 2022, Art. 2).

In principle, therefore, all sectors could become a source of carbon credits. In order to be internationally transferrable, a unit must be issued as (or converted into) so-called "Certificate of GHG Emissions Reduction" (Sertifikat Pengurangan Emisi GRK) - SPE-GRK.

Furthermore, the interviewees highlighted that the actual suitability of sectors and technologies in Indonesia will also depend on whether units will be backed by corresponding adjustments (CAs): In the forestry sector, which currently hosts numerous VCM projects, mitigation activities will presumably not be able to generate credits with CAs, as the NDC target for this sector is very ambitious and basically all mitigation impacts are required for achieving this target, as indicated by one interviewee. According to another expert interviewed, this is also reflected in the national strategy for the forestry sector, which focuses more on REDD+[3] under Article 5 of the Paris Agreement than on Article 6.

The interviews further showed that defining the eligibility of activities at the global level can be problematic: For instance, the proposed exclusion of large renewable energy activities in non-least Developed Countries (non-LDCs) as proposed in the criteria, should be reconsidered. According to one interviewee, the deployment of renewable energies in Indonesia needs external support, which could also come in the form of carbon finance. Special attention should also be given to the energy infrastructure. Indonesia is an archipelago consisting of more than 17.000 islands. Most islands are not connected to the national grid, including larger islands. External support is therefore needed to enhance the connection to the national grid.

NDC alignment and additionality

Regulation Number 21 contains several requirements to ensure that carbon trading is aligned with Indonesia's NDC. These requirements are also relevant for mitigation activities implemented under Article 6 of the Paris Agreement.

The interviews indicate that the development of baselines as part of the carbon trading roadmaps at sectoral and sub-sectoral level will be particularly challenging. Ministries are

[3] Article 5 of the Paris Agreement relates to results-based payments for "activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries", known as REDD+.

required to provide data that allows to identify room for trading units internationally. In order to gather this data, external support will be required, as indicated by one expert interviewed.

Another provision relates to the installation of a buffer reserve, which requires emission reduction certificates (SPE-GRK) to be set aside to address the risk of overselling. The amount of emission reductions to be set aside varies: for domestic offsets, the share lies between zero to five percent, for international offsets a share between 10 and 20 percent is determined and if offsets outside the scope of the NDC are traded internationally, the share is minimum of 20 percent. (Minister of Environment and Forestry, 2022, Art. 7).

The regulation further stipulates that trading can only take place after the respective sectoral ministry has determined and submitted a plan and strategy for NDC achievement in the sector and sub-sector. The actual trade has to be authorized by the Ministry for the Environment and Forestry and can only take place if the Ministry determines that the underlying emission reductions will not be required for meeting the share of the NDC target in the sub-sector and sub-sub sector. With these provisions, safeguards to align the mitigation activity with the NDC have been established that also address the risk of overselling.

The regulation does, however, not contain the requirement for activities to be additional. According to one interviewee, respective provisions to demonstrate additionality will however be included in the methodologies.

Quantification and attribution of the mitigation impact

The emission reductions must undergo a procedure for Measurement, Reporting, and Verification (MRV) and be recorded in the National Registry System for Climate Change (Minister of Environment and Forestry, 2022, Art. 1.18).

The regulation further requires emissions reductions to be calculated based on the GHG emissions baselines and NDC achievement targets in the sub-sector per year (Minister of Environment and Forestry, 2022, Art. 19.4i). Moreover, credits can only be issued if aligned with the carbon trading roadmap in the respective sector, which also requires the application of sector and sub-sectoral emissions baselines that are annually disaggregated. Therefore, the regulation goes well beyond the use of mere business as usual scenarios but requires baselines that are aligned with the NDC, as proposed in the criteria.

The regulation also requires GHG emission reductions to be permanent. However, the document contains no details on how the non-permanence risk will be addressed and whether reversals will be fully accounted for if mitigation outcomes from the forestry sector are traded. These detailed requirements will be included in the sector-specific regulations.

As outlined above, only credits issued as (or converted into) SPE-GRK can be transferred internationally. These credits must inter alia be in accordance with the provisions of the updated guidance from the IPCC, international standards, or Indonesian standards. Therefore, the application of best practice approaches and internationally recognized methodologies, as suggested by criterion number 5, is addressed. At the same time, the role of international methodologies from private certification standards such as the Gold Standard and Verified Carbon Standard is uncertain.

Ambition raising, transformational change and sustainable development impacts

In order to issue SPE-GRKs that can be used for international carbon trading, mitigation activities must contribute to sustainable development (Minister of Environment and Forestry, 2022, Art. 60.2 h). The regulation does therefore require sustainable development benefits to be achieved but does not, however, link these to the countries' SDGs or provide a definition of sustainable development. According to one interviewee, the government is involved in international processes on defining the details of sustainable development and other concepts, which is why no details are included in the regulation at this stage. Similarly, Indonesia is still in the process of developing safeguards to address adverse social and environmental impacts.

With regard to the contribution to transformational change, the regulation does not contain any requirements. Respective provisions could however be included in subordinate legislation and be informed by existing processes at the national level, such as Just Energy Transition Partnerships and respective methodologies on early retirement of coal, as highlighted by one of the experts interviewed.

4.3.4 General prospects for cooperating with Germany on Article 6

As can be seen from the analysis above, Indonesia is very active in establishing regulations on carbon pricing, including on the international carbon trading. The existing situation, however, is characterized by some uncertainty as it is still unclear how overarching regulation will be implemented on the ground.

The requirements introduced with the new regulation have raised considerable concerns among carbon market participants, in particular from the VCM. One particularly contentious issue is the requirement for respective ministries to develop sectoral NDC baselines and that carbon credits can only be sold after the NDC target in the respective sub-sectors has been met. This together with the requirement to set aside a certain share of carbon credits to address the risk of overselling raised concerns about the attractiveness of Indonesia as a host of carbon market activities (Carbon Pulse, 2022).

While there is a lack of clarity in terms of how strict these provisions will be implemented, implementing regulation could provide some more clarity in the future. In addition, the government is currently revising its umbrella regulation. While it is still unclear when the revised regulation will be released, there is the expectation that it will address some of the uncertainties of the current version, as highlighted by one interviewee.

With regard to the interest of Indonesia in cooperating with Germany, the picture is somewhat mixed. On the one hand, the interviewees made clear that Indonesia needs international support, in particular with regard to data gathering and processing. More generally, Indonesia is very open to exploring new possibilities for cooperation. At the same time, however, it should be noted that Indonesia is already cooperating with several countries. Many of these countries have clearly expressed their willingness to buy ITMOs. Germany, by contrast, has not been clear on its intention to actually become an acquiring country, which could make it less attractive as a partner country for Indonesia.

More generally, the concept of mutual recognition seems to play a key role for any future cooperation between Indonesia and Germany: any methodologies and standards developed in Indonesia would have to be recognized in Germany and vice-versa, allowing for increased transparency and trust in cross-border cooperation.

4.4 Case Study: South Africa

4.4.1 Nationally Determined Contribution

South Africa's updated NDC submitted in September 2021 raises the country's ambition towards reducing its GHG emissions target compared to the initial NDC of November 2016.

South Africa has adopted the following emission reduction targets as "Single Year Targets" in its Updated NDC of 2021 (Republic of South Africa, 2021):

Table 6: South Africa's updated NDC mitigation targets

Year	Target	Corresponding period of implementation
2025	South Africa's annual GHG emissions will be in a range from 396-510 Mt CO_2eq.	2021 – 2025
2030	South Africa's annual GHG emissions will be in a range from 350-420 Mt CO_2eq.	2026 - 2030

Source: Republic of South Africa (2021). Note: "GHG emissions" are defined as total net GHG emissions as specified in the national inventory report for 2025, including all sectors, and excluding emissions from natural disturbances in the land sector.

These targets represent a significant increase in the country's ambition compared to the first NDC from 2016. However, the new short- and medium-term emission reduction targets are defined as a range, with the lower emission levels taking into account the global 1.5 degree Celsius target and the upper levels corresponding to South Africa's contribution to a 2 degree Celsius target. The NDC does not explicitly define conditional and unconditional targets.

The setting of the 2021 NDC emission reduction targets was based on concerted action involving key stakeholders from the government, extensive modelling by the University of Cape Town's Energy Systems Research Group with financial support by the African Climate Foundation and NDC Partnership (NDC-P), and public hearings, for example through provincial public stakeholder workshops. The process was led by the Department of Forestry, Fisheries and the Environment (DFFE), along with the Department of Mineral Resources and Energy (DMRE) and the Department of International Relations and Cooperation (DIRCO) driven by and coordinated with the Presidential Climate Commission (PCC), which brought together 22 commissioners from government, business organisations, civil society, organised labour, and the scientific community (Peterson, L. et al, 2023).

South Africa has defined an economy-wide target that consequently aims to achieve emission reductions across all sectors of the society. To achieve these NDCs, it would be necessary in the first place to successfully implement and enforce the relevant national policies and strategies that directly or indirectly lead to GHG emission reductions. These include, inter alia:

- the Integrated Resource Plan 2019 (IRP 2019),
- the draft post-2015 National Energy Efficiency Strategy,
- the Green Transport Strategy (GTS) and
- the national carbon tax.

The South African energy sector, together with Sasol's production emissions, is responsible for the majority of national GHG emissions.

Sasol Limited is a South African multinational energy and chemical company. Founded in 1950, Sasol is known for its expertise in the development and commercialization of technologies for the production of synthetic fuels and chemicals from coal, natural gas, and other hydrocarbons. Sasol operates in various segments, including upstream oil and gas, global chemicals, and energy. The company has diversified its operations globally and is involved in the exploration and production of oil and natural gas, as well as the manufacturing of a wide range of chemical products. Sasol's Secunda CTL plant is as of 2020 the world's largest single emitter of greenhouse gas, at 56.5 million tonnes CO_2 a year (Bloomberg, 2020).

Power generation by the national electricity utility Eskom is still predominantly based on the combustion of coal and coal mining has been a major source of employment in the country. A reduction of emissions in the energy sector is linked to the phase-out of coal. However, corresponding efforts have not been made so far despite the possible provision of international financial support. DMRE as the responsible ministry is under pressure to find alternative employment for thousands of workers in the coal-based energy sector. The country is plagued by frequent load shedding and Eskom does not have the financial means to develop alternative (renewable) sources of electricity at large scale. In addition, it would be required to go for massive investments for an extension of the national transmission and distribution grid. Regarding the latter, the first step of unbundling Eskom by establishing a separate new company, the National Transmission Company of South Africa (NTCSA), could offer new solutions and investment opportunities for renewable energies.

In summary, it is questionable whether the targeted emission reductions in the NDC based on a successful transformation of the power sector including Sasol's coal and natural gas-based production towards green products will actually be achievable by 2030. Although the government's "Just Transition" policy was taken into account in the NDC, there is still considerable resistance from trade unions and some government representatives to a comprehensive transformation of the energy sector.

4.4.2 Role of Article 6

Although South Africa's NDC clearly states that it is intended to make use of carbon finance options provided by Art. 6, until the end of 2023 the country made little progress concerning the development and implementation of a national carbon market framework. The range of the mitigation target by 2030 does offer the possibility of communicating the intention of higher mitigation ambition to potential investors/providers of international climate finance and for making use of Art. 6-based carbon finance.

Already in 2022, the first international projects, such as the production of green ammonia based on green hydrogen for national fertilizer production, which was developed by ENERTRAG and GFA Consulting Group on behalf of the Swedish Energy Agency, had requested approval from the competent authorities for being implemented as Art. 6 activities. However, these requests were not successful. The reason for this was (and still is) the unresolved internal government decisions on the responsibility for Art. 6 activities, which could only be clarified conclusively in the context of the creation of a comprehensive carbon market framework.

In principle, DFFE is in charge of all issues related to Art. 6 of the Paris Agreement and also conducts the corresponding negotiations within the framework of the international political negotiations. At the same time, however, DMRE was (and still is) the national DNA for the

approval of CDM projects and also for voluntary mitigation projects that can be used by companies for offsetting carbon tax payments. This also means that nominally DMRE also has the responsibility for the transfer of CDM projects to Art. 6.

This internally unsettled situation ultimately led to the fact that up to the present time (October 2023), no significant progress has been made with regard to the use of Art. 6 by South Africa. However, this situation is currently changing, since DFFE and DMRE took the joint decision to prepare a South African Carbon Market Framework by the end of 2023 (expected early 2024). South Africa is receiving extensive support for this. Among other things, three activities financially supported by Germany are assisting in the development of the carbon market framework. These are an Article 6 pilot project financed by the German Federal Ministry for Economic Affairs and Climate Action BMWK) within the framework of the International Climate Initiative (IKI) for the introduction of climate-neutral air-conditioning systems in South Africa and neighbouring countries (GIZ, 2023), a comprehensive support measure for the Carbon Market Framework on the part of the NDC-P to be completed by end of 2023 and another project financed by the German Federal Ministry for Economic Cooperation and Development (GIZ, 2023), which, however, will probably only become fully operational in 2024.

There is considerable pressure on the responsible departments to create the conditions for the implementation of Art. 6 projects as quickly as possible. Both the presidency and private industry have recognised the advantages of co-financing climate protection projects that could help the country achieve its short- and long-term climate goals. Carbon finance under Art. 6 could facilitate urgently needed investments in renewable energies. The same applies to the decarbonisation of important industries such as steel production, but especially to the transformation of SASOL, the industrial company with the highest greenhouse gas emissions, towards green products such as green hydrogen, green ammonia, e-methanol or climate-neutral kerosene.

4.4.3 South Africa as a host country to carbon market activities

South Africa has been one of the most successful countries among the developing countries and countries in transition in terms of developing and implementing CDM (over 100) projects and PoA (over 50) programmes (UNEP CCC, 2023). In addition, there are many projects that are subject to voluntary carbon market standards (GS, VCS, etc.), which can be used for offsetting by South African entities that are subject to paying carbon taxes.

Overall, therefore, there are many years of historical experience in the development and approval of CDM projects and of voluntary projects that can be used for offsetting carbon tax payments in the country. However, the relevant experience and structures (e.g. register for carbon tax-related projects) lie primarily with the currently responsible body, namely DMRE. However, as described above, the political mandate for Art. 6 activities lies with DFFE, which so far has no practical experience in the approval and follow-up (MRV) of mitigation projects. Against this background, the following compromise could emerge: DFFE takes over the mandate for negotiating and approving Art. 6.2 activities, while DMRE could be the Designated National Authority for Art. 6.4 projects and for operating an Art. 6 registry.

However, the final decision on this is only likely to be taken in the course of the development of the Carbon Market Framework, which will define the relevant decision-making structures and processes for Art. 6 activities.

Once the Carbon Market Framework has been approved and respective regulations, responsibilities, and structures are in place, due to the vast opportunities for GHG mitigation,

South Africa could become an attractive partner country for Art. 6 activities. In order to take advantage of this opportunity, South Africa needs to speed up the process, as time is running out for the Paris Agreement period up to 2030 and other countries like Ghana, Zambia or Kenya are well ahead with regard to Art. 6 readiness.

4.4.4 Criteria for identifying and assessing Article 6 mitigation activities in South Africa

This section explores the suitability of the criteria developed within this research project for assessing Article 6 mitigation activities in South Africa. The section builds on insights from interviews with local experts, who are currently involved in drafting the Carbon Market Framework and have vast experience regarding the carbon finance landscape of South Africa. In addition, GFA itself is providing consultancy services in cooperation with GIZ under the IKI-funded projects that deal with the introduction of 'Green ACs' within the frame of an Art. 6 pilot project.

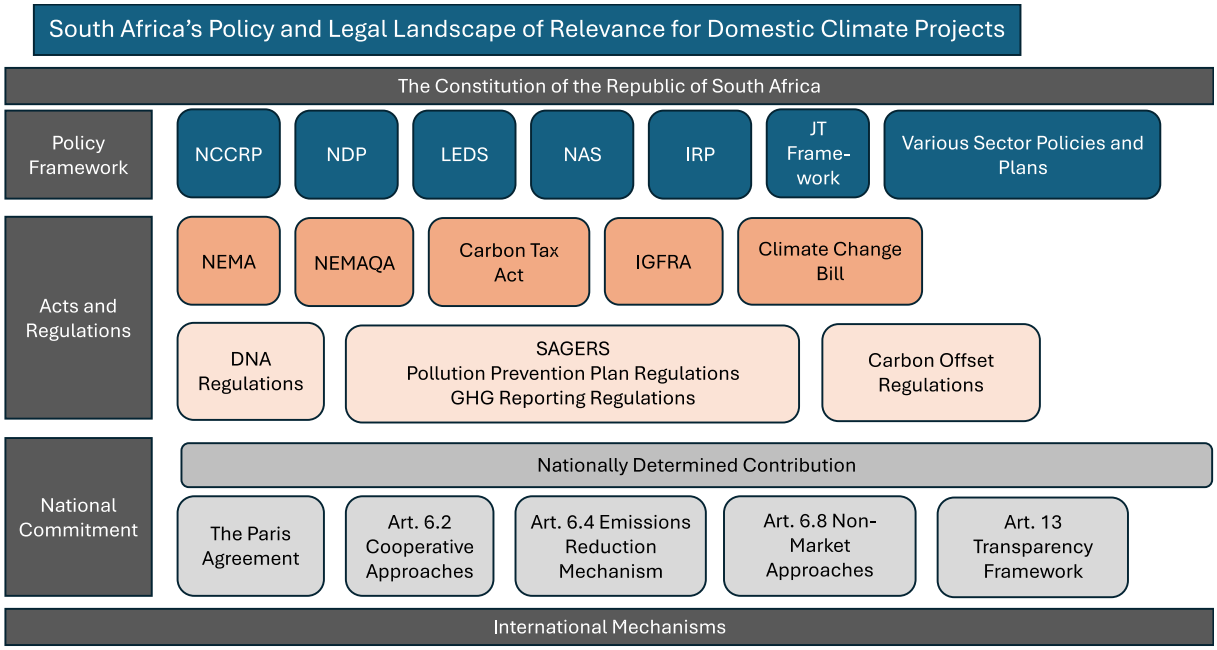
Eligibility of mitigation activities and general feedback on proposed criteria

As said above, South Africa started the development and implementation of a Carbon Market Framework just recently. As the country has defined an economy-wide GHG emissions reduction target, all sectors of the national economy including the Agriculture, Forestry, and Other Land Use (AFOLU) sector could become a source of carbon credits generated by Art. 6 activities.

South Africa follows an approach in establishing a Carbon Market Framework that builds to a large extend on existing policies and regulations, which are shown in the figure below. As can be seen the Constitution of the Republic of South Africa already provides an established policy framework for climate-related activities comprising the National Climate Change Response Strategy, the National Development Plan up to 2030, the Low Emission Development Strategy up to 2050, the National Adaptation Strategy, the Integrated Resource Plan, the Just Transition Framework, and various other sector policies and plans. This is complemented by existing acts and regulations as for example the National Environmental Management Act, the National Environmental Management Air Quality Act, The Carbon Tax Act, the Intergovernmental Relations Framework, or the Climate Change Bill. In addition, there are regulations in place for the Designated National Authority, for carbon offset regulations as part of the Carbon Tact Act, for Pollution Prevention Plans and GHG reporting, and the South African Greenhouse Gas Emissions Reporting System SAGRES.

South Africa also signed international treaties such as the Paris Agreement, has published it's updated NDC and would like to make use of the carbon finance opportunities provided by Art. 6 of the Paris Agreement.

Figure 7: Underlying policies, strategies, and regulations that probably will influence the Carbon Market Framework development



NCCRP: National Climate Change Response Strategy; NDP: National Development Plan 2030; LEDS: Low Emission Development Strategy 2050; NAS: National Adaptation Strategy; IRP: Integrated Resource Plan 2019; JT Framework: Just Transition Framework; NEMA: National Environmental Management Act, 1998; NEMAQA: National Environment Management Air Quality Act, 2004; IGFRA: Intergovernmental Relations Framework Act, 2005; SAGERS: South African Greenhouse Gas Emissions Reporting System. Source: Based on a presentation by Andrew Gilder, Climate Legal, September 2023.

Although the framework is not in place yet, it may be expected that Art. 6 activities probably not only need to correspond to Art. 6-specific regulations defined in the framework, but also have to consider existing stipulations defined in existing laws and regulations, as they will potentially find their way into the framework. Projects may find themselves in a situation where departments under whose jurisdiction the proposed Art. 6 activity falls must also give their approval and confirm it in writing before a project receives a final Letter of Approval from the ultimate Art. 6 competent entity. If this assumption proves to be true, a lengthy application and approval process may have to be expected.

Environmental Integrity

Based on the opinion of the interviewees, the proposed criteria are at least partly not compatible with the framework conditions in South Africa. This referred primarily to the proposed rejection criteria for certain project types. In view of the tense situation in the energy sector, the demand to exclude mitigation activities that lead to a lock-in of fossil fuel technologies such as e.g. refurbishment of an oil boiler, projects supporting switching from coal to natural gas, large scale (i.e. > 20 MW) grid-connected renewable power from hydro, wind, and photovoltaic and nuclear power was not supported. These technologies are considered as integral part of RSA's current decarbonization strategy for the power sector.

South Africa is not willing to give away its 'low-hanging fruits', which means that DFFE and DMRE would like to inquire which GHG mitigation activities could be implemented based on own available financial resources or through regulations, which then would be counted towards

the achievement of the NDC (although no distinct unconditional and conditional GHG reduction targets have been specified). For that, a comprehensive assessment of the cost of individual mitigation activities in the different sectors of the economy needs to be conducted by calculating respective Marginal Abatement Cost (MAC). This information could be used for an approval or rejection of an incoming Art. 6 proposal by for example defining a certain financial MAC threshold. This information is currently not available, but shall be provided in the course of the preparatory supporting actions for the elaboration of the Carbon Market Framework as the interview partners underlined that there is also a fear of 'overselling'. As discussed above, the departments in charge (i.e. DFFE and DMRE) managed to source international financial and technical support for the production of the framework that will also specify indicators to be used for an assessment of project proposals. However, this is still a work in progress.

Based on the information gathered during the interviews, there seems to be no intention by now to define any positive or negative lists of project types. Obviously, a strict financial additionality test will be required and methodologies approved under the CDM and by international quality standards from the Voluntary Carbon Market (VCM) should be applied.

Considering other aspects of environmental integrity one of the interviewees mentioned that historically the South African government never itself judged the environmental integrity of mitigation projects that were inter alia approved under the Clean Development Mechanism. The judgement on environmental integrity for VCM projects was handed to the respective standard, such as for example Gold Standard or the VCS, that was applied for the development, validation and verification of a project. It looks as if the Carbon Market Framework could again use a similar approach by approving certain standards that would be permitted for being used for the development of an Art. 6 activity. This would also pertain to activities in the LULUCF sector and questions that come along with regard to non-permanence or leakage risks.

These "candidate standards" could also be used for the approval of projects that may be used for offsetting carbon tax payments by South African entities.

NDC alignment, ambition raising and transformational change

Given the fact that the NDC specifies an overarching economy-wide target, it may be expected that any mitigation activity in any sector could potentially qualify for implementation under Article 6.

Considering the great dependence of the South African economy (power, industrial production, and transport) on coal and other fossil fuels, the ability of the country to raise ambition has historically been very limited. Increasing ambition by using ITMOs is a discussion with and within the government that is still lying ahead, also because South Africa's NDC does not make a clear distinction between an unconditional and a conditional target.

One of the interviewees suggested that a system-level intervention for example in the power sector might be needed to achieve transformational change and therefore it should be investigated under which conditions such an intervention should be allowed to make use of carbon finance. This however would raise additional questions around environmental integrity as for a system-level intervention in South Africa's power sector it would not be enough to approve Art. 6 projects for additional renewable energy production, but would also comprise other measures such as increasing grid stability through investments in new transmission and distribution lines, in building up battery storage capacities and control systems or even investments in interim solutions such as switching from coal to natural gas for running turbines.

Another suggestion was made concerning the 'import' of ITMOs to South Africa. South African entities could engage in Art. 6 activities in neighboring countries, i.e., joined cross-border development of green hydrogen projects. The country is also part of the Southern African Power Pool (SAPP) and it should be investigated, if and how South Africa's power sector could benefit from an approach that is based on the opportunity of using a standardized baseline for a regional power system, which was possible under the CDM.

Sustainable development

To date, there is no evidence on the extent to which a South African Carbon Market Framework will take into account the need for Art. 6 activities to contribute to the achievement of SDGs beyond SDG 13. According to the interview partners, it can be assumed that at least two important strategies of the country could be taken into account when assessing proposed Art. 6 activities:

- The 'Just Transition Framework' developed on behalf of the Presidential Climate Commission (Presidential Climate Commission, 2022) touches upon matters such as job creation, protection of natural resources, mental health, gender equity, finance, and others.
- The 'Just Energy Transition' of Eskom that focuses on achieving "Net Zero" carbon emissions by 2050, with an increase in sustainable jobs and a greater preservation of biodiversity in South Africa.

Both strategies are aiming for transformational change and specifically on the creation of new employment opportunities, which is one of the major political objectives of the country. However, it cannot be assumed at present that the approval of a planned Art. 6 project in South Africa will depend on what contributions are made beyond SDG 13. Presumably, the approval or rejection of an Art. 6 activity could depend on the extent to which it can contribute to the achievement of the most relevant policies or economic goals and strategies (as outlined above), but at least at this stage (before a Carbon Market Framework is available and adopted), no definitive statement can be made on this.

If the Carbon Market Framework were to provide for the government to leave certain decisions on the significance of SDG achievement to the established 'candidate standards' such as Gold Standard or VCS (Gold Standard for the Global Goals or VERRA's Sustainable Development Verified Impact Standard) might come into play, which takes this aspect of mitigation projects firmly into account. This would then also define the rules for the documentation of SDG impacts and their monitoring, as well as aspects related to SD safeguards and stakeholder consultations.

4.4.5 General prospects for cooperating with Germany on Article 6

Highest expectations towards an Art. 6 cooperation with Germany would target the energy sector of South Africa, not only because investments in the sector are urgently needed, but also because of the long-standing technical cooperation between the two countries within the framework of German-South African energy (and climate) partnership. Especially here, the criteria for Art. 6 projects that may be eligible differ considerably.

There might however be other sectors such as waste, transport or IPPU (e.g., green hydrogen and PtX production), where Art. 6 projects can be developed that fulfil the quality criteria of both countries (South Africa and a buyer country such as Germany).

Art. 6.4 compliant projects without a Corresponding Adjustment that are used domestically for offsetting carbon tax payments and thus help the government in achieving its NDC may play an

important role in the near future and may even become more important compared to ITMO transfers to buyers outside of South Africa. Eligibility criteria for Art. 6 activities stipulated in the Carbon Market Framework may therefore in the first place follow the requirements and strategies of the country instead of looking at the requirements or indicators specified by potential buyers of ITMOs.

It could well be that at the end of this development, two different Art. 6 markets will develop: (a) a domestic market for voluntary projects and/or projects carried out under Art. 6.4 without a Corresponding Adjustment, where prices of MOs are orientated towards the height of carbon tax payments, and (b) an ITMO market for higher priced emission reductions that allow for the implementation of strategic projects in South Africa.

4.5 Observations from the applicability check

The evaluation of the interviews conducted with the experts in case study countries gives a differentiated picture for both countries with regard to a possible Art. 6 cooperation with Germany, taking into account the proposed catalogue of criteria. This is primarily due to:

- Different definitions of the emission reduction targets named in the NDC, especially with regard to the distinction between non-conditional and conditional targets;
- The status of the respective country with regard to the decisions already taken or still to be taken by the competent bodies in the countries on the design and application of the Art. 6 mechanisms;
- The considerable differences in the political objectives of both countries depending on the national socio-economic framework conditions, such as the state of the energy sector, the level of industrial development, or the education and employment situation, whereby these factors have a considerable influence on the respective climate policy potentials and objectives.

The **Republic of South Africa** has been suffering from problems related to the country's energy supply for several years now. The state-owned power utility Eskom has difficulties generating enough electricity to meet the country's needs. Some power plants are out of service and there are challenges in maintaining and expanding capacity. Eskom's electricity production is based almost entirely on the use of fossil fuels such as coal and natural gas. Much of the power generation equipment is outdated and inefficient. This leads to frequent outages and shortages in electricity supply, affecting both households and industry in the country. Eskom is experiencing significant financial difficulties due to inefficient management, corruption, and unprofitable business practices, resulting in high levels of debt for the company. This in turn prevents much-needed investment in infrastructure upgrades including the expansion of the transmission and distribution network. The insufficient grid capacities are primarily responsible for the fact that the country's large potentials for the expansion of renewable energies (RE) cannot be tapped. In addition, the high dependence on jobs in the coal industry leads to resistance from trade unions and parts of the government to RE expansion and the phase-out of the coal. In order to restore a constant energy supply without causing a further increase in greenhouse gas emissions in the energy sector, the expansion of nuclear energy and a transition from coal to a greater use of natural gas are still being discussed. In the interviews with the South African experts, it became clear that the proposed criterion 1 on environmental integrity, which would exclude certain project types (mitigation measures leading to a "lock-in" of fossil fuel technologies or large-scale (i.e. > 20 MW) grid-connected power generation from hydro and

wind power plants or photovoltaic systems) from the use of Art. 6, might not be acceptable in this form from the South African perspective. For the German side, it would have to be questioned whether the proposed exclusion of large-scale RE plants would actually make sense.

The South African Carbon Market Framework is currently under development with international support. Delays in the implementation of the Art. 6 strategy were partly due to the question of responsibility. Currently, the Ministry of Fisheries, Forestry and Environment (DFFE) is politically responsible for Art. 6 negotiations, while the Ministry of Mineral Resources and Energy (DMRE) is responsible for Clean Development (CDM) projects and for projects that can be used for offsetting payments under the national carbon tax. Since the two ministries are pursuing different strategies, these are also likely to influence the design of the carbon market framework. However, there seems to be agreement between the ministries on additionality, baselines, or methodologies, which is also in line with the proposals of the criteria and test catalogue.

To what extent the approval of Art. 6 projects under the South African Framework might depend on their contribution to the achievement of international (and national) sustainable development goals cannot be answered at this time. Some of South Africa's key policies may indeed play a significant role in this context. The Just Transition Framework, developed on behalf of the Presidential Climate Commission, touches on issues such as job creation, natural resource protection, health, gender equity, finance and others. Eskom's Just Energy Transition strategy, which focuses on achieving 'net zero' carbon emissions by 2050, with an increase in sustainable jobs and greater conservation of biodiversity in South Africa, may also become relevant. Both strategies are aimed at transformative change and, in particular, the creation of new employment opportunities, one of the country's key policy objectives.

The South African Carbon Tax is expected to have a significant impact on the future shape of the South African carbon market. According to interviewees, many national mitigation projects that would in principle qualify as Art. 6 projects could be used as "offset projects" in the national market. There may well be the possibility that two distinct Art. 6 markets will emerge in South Africa at the end of this development: (a) a domestic market for voluntary projects and/or Art. 6.4 projects without Corresponding Adjustments (CA), where MOs are priced based on the level of carbon tax payments, and (b) an ITMO market for higher-priced emission reductions that enable the implementation of strategic projects in South Africa through cooperation with international buyers.

Indonesia, the second case study analyzed, is currently in the process of developing regulation on carbon trading that also guide the participation in international market-based cooperation, including Article 6. The government has inter alia defined a list of sectors (and sub-sectors) in which carbon trading is allowed. While in principle all sectors could become a source of carbon credits, the analysis shows that the actual suitability of sectors and technologies in Indonesia will also depend on whether units will be backed by corresponding adjustments (CAs), one key consideration under Article 6. The forestry sector, for instance, holds vast potential for implementing mitigation activities. The mitigation target, however, is considered to be so ambitious that it will presumably not be possible to authorize units from this sector.

With regard to the suitability of the Evaluation Principles and Criteria developed within this research project for assessing Article 6 mitigation activities in Indonesia, three cases can be differentiated:

- In some areas, the analysis shows that there is a strong complementarity between national provisions in Indonesia and the Evaluation Principles and Criteria. Indonesia has for instance established a requirement to develop baselines and carbon trading roadmaps at sectoral and sub-sectoral levels and to only allow trading after sectoral targets were achieved. This is in accordance with the criterion to ensure NDC alignment of Article 6 activities and avoid overselling. The requirement to develop baselines at sectoral and sub-sectoral level is also in line with the requirement to develop baselines that are aligned with the NDC, as included in the Evaluation Principles and Criteria.
- For some aspects contained in the list of Evaluation Principles and Criteria, coverage at sub-ordinate level or inclusion at a later point in time can be expected. This pertains for instance the rules for ensuring the additionality of the mitigation activity, which will presumably be covered at the methodological level as well as provisions for dealing with non-permanence of emission reductions and removals, which will be included in sector-specific regulations. One of the aspects that will presumably find its way into the regulations at a later stage is the mitigation activities' contributions to transformational change, which will presumably build on ongoing processes, such as the Just Energy Transition Partnership (JETP). Similarly, the details of sustainable development and other concepts are not included in the regulation at this stage, given that the government is ensuring the alignment of its regulation with other international processes in which it is involved.
- At the same time, however, the analysis also highlights areas of divergence. There is, for instance, no link to the SDG process, and market activities are currently not required to contribute to Indonesia's SDGs. Similarly, the findings indicate that defining the eligibility of activities at the global level can be problematic, as exemplified with the proposed exclusion of large renewable energy activities in non-LDC Parties. This exclusion has been criticized as it would not allow Indonesia to use Article 6 for the deployment of renewable energies. However, external support, also in the form of carbon finance is deeply needed in particular considering the topographic position of the country consisting of more than 17.000 islands, many of which are not connected to the national grid. Therefore, specific national circumstances need to also be taken into consideration.

The general prospects for cooperation between Indonesia and Germany are somewhat mixed. While there is a need for international support and Indonesia is open to exploring new possibilities for cooperation, the country is already cooperating with several partners. Many of these countries have clearly expressed their willingness to buy ITMOs and are in advanced stages of cooperation also with other countries. This could limit the potential for Germany to become as a partner country in the area of market-based cooperation.

Overall, the results of the practical check show that the potential criteria for the approval of climate mitigation projects under Art. 6, which were drawn up from a German perspective and which follow the principles of German climate policy, such as the phase-out of fossil fuels or also Germany's development policy goals for achieving the international Sustainable Development Goals, do not necessarily correspond to the strategies for using Art. 6 of the partner countries. These are primarily aligned with national framework conditions (e.g. carbon tax in South Africa) and the (climate) policy goals of the respective countries.

If the criteria for the selection of Art. 6 projects were to coincide between Germany and partner countries, nothing would stand in the way of successful Art. 6 cooperation. However, the examples of South Africa and Indonesia show that certain projects that would be suitable for

carbon financing from the perspective of the host country might not be acceptable from the German side.

5 Synthesis

This report explored how Article 6 could be used as a tool for raising climate ambition. It started off by identifying the basic principles that should guide the use of Article 6.2 on both, the demand and the supply side of a cooperative approach. Taking the demand side perspective, the authors explored and discussed different options for Germany to use Article 6.2 as an acquiring Party. With the subsequent focus on the supply side, Evaluation Principles and Criteria were developed that could guide the identification of suitable partner countries and mitigation activities. Subsequently, the report transitions from the conceptual phase to a more practical perspective: The actual interest of countries in using Article 6 is explored through an analysis of Parties' NDCs, while two case studies shed some light on the practical application of the Evaluation Principles and Criteria and the benefits and limitations of the approach.

5.1 Basic principles for Article 6.2 use

The use of cooperative approaches should be guided the three key principles included in the so-called 'chapeau' Article 6.1 of the Paris Agreement.

- **Environmental integrity** is understood to be ensured if the cooperation and transfer of ITMOs under Article 6.2 leads to aggregated GHG emissions over time that are not higher than those that would have occurred in the absence of the cooperation.
- **Ambition raising** is a concept that applies to activities as well as the climate targets of the Parties participating in cooperative approaches. Individual activities can contribute to ambition raising by allowing countries to 'go beyond' of what is currently possible. This can for instance be achieved by applying technologies that are currently inaccessible, therefore advancing transformational change. The enhanced ambition level must be secured at the national target level. Another possibility to raise ambition is through a contribution to overall mitigation in global emissions (OMGE).
- Contributions to **sustainable development** are a key requirement for all cooperative approaches, while negative social and environmental impacts must be addressed.

Environmental integrity and ambition raising apply to the demand side (acquiring Party) and the supply side (transferring Party) of a cooperative approach. Contributions to sustainable development, in turn, is a principle that only applies to the supply side. The report found Article 6.2 to be an open reporting and accounting framework that allows for multiple uses.

5.2 Options for Germany to use Article 6.2

The report explored potential avenues for Germany to use Article 6.2 of the Paris Agreement and identified different options by focusing on the demand side of a cooperative approach. By considering Article 6.2 as a reporting and accounting framework that allows for multiple uses, we explored how acquiring Parties could participate in cooperative approaches without necessarily using ITMOs for NDC attainment.

This consideration is relevant, as Germany is bound by the EU NDC that contains domestic mitigation targets only. Using ITMOs for NDC achievement is therefore not possible for Germany. The report however identified manifold options for using Article 6:

- Contribution to Germany's long-term low greenhouse gas emission development strategies (LT-LEDS) and national long-term policy targets

- Use of ITMOs for compliance with obligations under Germany's national Emissions Trading System (nETS)
- Supporting German airline operator's access to high quality units for compliance with obligations under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
- German contribution to OMGE
- Using Article 6.2 for (private) climate finance
- Supporting VCM actors' access to high quality units

The report found the **actual potential of compliance use options to be limited**. The main limitation for the compliance use options is the fact that Germany did not submit its own NDC but has committed to the domestic EU NDC. This does not only exclude the use of ITMOs for NDC attainment but also challenges the use of cooperative approaches in the context of long-term targets and the use of ITMOs under Germany's national emissions trading system. From the compliance use options identified, the use of cooperative approaches to support airlines in accessing high quality credits to comply with obligations under CORSIA seems the only feasible options for Germany. However, possibilities to report on this option under the UNFCCC are limited.

In contrast, **voluntary use options have a larger potential** to contribute to ambition raising while upholding environmental integrity. In addition, they are also easier to implement: A German contribution to OMGE would make a direct and immediate contribution to ambition raising while the UNFCCC also provides for this option in its reporting framework. Using Article 6 for private climate finance was found to be particularly promising if combined with the contribution claim approach. The contribution claim approach, which is currently being discussed in the VCM as an alternative to carbon offsetting, builds on the idea that mitigation outcomes remain with the host Party and does therefore not involve any transfers of ITMOs. This use option therefore primarily uses the Art. 6.2 framework as a reporting infrastructure and as a tool to quantify emission reductions. While Germany could report on this engagement under the Enhanced Transparency Framework, a stronger and more visible private sector engagement in climate finance could be achieved. Finally, using cooperative approaches to support VCM actors in accessing high quality units was identified to hold particularly large potential, despite the fact that reporting on this option under the UNFCCC is not provided for under the Article 6.2 Guidance. Given that German VCM actors may find it challenging to obtain high quality credits that are authorized by host Parties, the German government could support these actors by building on its diplomatic influence. The main benefit of this option is its potential to influence and increase the quality of units used by private credit buyers in Germany, while also allowing the German government to regulate the use of the credits. Access to these credits could be tied to specific requirements, such as disclosure of emissions data, ambitious climate targets and transparent communication.

5.3 Developing criteria to guide the selection of Article 6 activities and partner countries

With regard to the supply of ITMOs, mitigation activities could be required to comply with additional criteria as a precondition for Germany's participation in the cooperative approach.

Based on an analysis of existing frameworks, the report developed a set of criteria that are structured along the three basic principles identified previously - (1) Ensuring environmental integrity, (2) Ambition raising and (3) Sustainable development. – and included in the Evaluation Principles and Criteria.

The Evaluation Principles and Criteria were developed through a multi-step process.

In a first step we assessed the requirements of the Article 6.2 guidance, including the detailed provisions for Corresponding Adjustments (CAs), the establishment of baselines and other aspects adopted during COP 26 in Glasgow in 2021. Article 6.2 is designed as a flexible crediting framework with minimum requirements based on government-to-government cooperation. The design of Art. 6.2 inherently assumes that functions such as the development of robust GHG emission estimates or the choice of an existing registry / the development of a new registry for the issuance and transfer of ITMOs are regulated by participating Parties themselves. In addition, we found that there is an absence of guidance on how to develop a baseline aligned with the unconditional NDC target of the host country. Such issues, but also the framework character of the Art. 6.2 guidance creates opportunities to formulate complementary quality criteria.

In a second step, we assessed existing frameworks that could inform the development of quality criteria. The Swedish Energy Agency (SEA) as well as the Swiss KliK Foundation developed detailed evaluation frameworks for assessing whether to co-fund Art. 6 activities. These evaluation frameworks exceed the requirements of robust accounting, as established under the Kyoto Protocol's flexible mechanism by for instance considering current and future policies and putting an emphasis on sustainable development (e.g. requiring the monitoring of SD impacts) and attribution. These frameworks were used as a first building block for the development of the Evaluation Principles and Criteria.

In a second step, the Verified Carbon Standard (VCS) and the Gold Standard (GS) were explored. The analysis found that both certification standards offer a range of elements for developing suitable quality criteria. The VCS offers a wealth of methodologies (e.g. in the Agriculture Forestry and Other Land Use (AFOLU) sector) and tools (e.g. non-permanence tool, additionality tool for AFOLU), which are complementary to CDM methodologies. The GS, in turn, contains requirements for safeguards and stakeholder consultation, which could guide Art. 6 activity design. Moreover, ensuring compliance with the International Labor Organization (ILO) core conventions (e.g. no child labor) was found to be a convincing element of a do-no-harm approach. However, similar to the CDM, VCS and GS methodologies do not provide a robust basis for developing baselines that are in consistency with the host country's uNDC targets.

In a third step, relevant criteria from the frameworks analyzed were included in the Evaluation Principles and Criteria, providing a basis for identifying suitable Art. 6 activities and respective host countries.

5.4 The Role of Article 6 in Parties' NDCs

Transitions from the conceptual to a more practical perspective, the report then analysed countries' actual openness towards engaging in Article 6. We approached this question by analyzing 195 NDCs submitted by Parties to the UNFCCC until September 2022. The findings from the analysis were compiled in a fact sheet that can be downloaded from the German Environment Agency's website (Kreibich, 2023).

The NDC analysis found that there is considerable openness towards Article 6, in principle: more than 50 per cent of the NDCs analyzed contained language that expressed the intention to use

Article 6 or the consideration to do so. However, most NDCs do not contain any information on the specific types of voluntary cooperation that the Party could engage in. While 'cooperative approach' is the type of voluntary cooperation most frequently specified by Parties, it should be noted that the term is by some used to refer to any type of voluntary cooperation under Article 6. In terms of regional distribution, the analysis found that Africa is the continent with the largest number of Parties to have specified a type of voluntary cooperation. Africa is also the region with considerable openness towards Article 6, while other regions in particular from the Global North but also Asia seem to be less open towards engaging under Article 6.

The analysis further found that Parties' willingness to buy ITMOs is limited: only 11 Parties consider themselves as potential buyers while more than 50 have indicated their intention to sell ITMOs. The report however found that this does not automatically translate into an actual market imbalance, as the relationship between demand and supply may depend on the volumes traded and not on the numbers of Parties involved. Furthermore, many NDCs do not specify whether the respective Party intends to buy or sell ITMOs and there might further be other sources of demand outside the UNFCCC. In general, the findings indicated that the NDC analysis should be complemented by a more in-depth analysis of individual countries, as the NDCs do not necessarily reflect the latest positioning of governments towards the use of Article 6.

5.5 Assessing the practical applicability of the evaluation principles and criteria

In order to assess whether the Evaluation Principles and Criteria could be applied in practice, the report explored the applicability on in two case studies. For this purpose, South Africa and Indonesia were selected identified by means of an analysis tool created by the project team, which uses various indicators to identify suitable partner countries. The database created by the project allows for a comprehensive global (meta-) analysis of countries to assess and narrow down the cooperation potential based on a set of elaborated political, economic, and social indicators. These indicators are based on a variety of sources, one of which and the most important are the countries' NDCs.

To assess the applicability of the Evaluation Principles and Criteria, semi-structured qualitative interviews were conducted with experts from non-governmental organizations in Indonesia and South Africa on the basis of a catalogue of guiding questions prepared and shared with interviewees in advance. The results of the practical check show that the criteria for the approval of mitigation activities under Art. 6 were developed from a German perspective. They are guided by principles of German climate policy, such as the phase-out of fossil fuels, or also Germany's development policy goals for achieving the international Sustainable Development Goals. The applicability check has shown that these do not necessarily correspond with the strategies for using Art. 6 in the two case study countries. These strategies are primarily aligned with national framework conditions (e.g. carbon tax in South Africa) and the (climate) policy goals of the respective countries.

The interviews conducted with the local experts provided a differentiated picture for both countries with regard to the applicability of the Evaluation Principles and Criteria in the context of potential cooperation under Art. 6 with Germany. Key aspects identified included the following:

- Different definitions of the emission reduction targets included in the NDC, especially with regard to the distinction between non-conditional and conditional targets;

- The status of the respective country with regard to the decisions already taken or still to be taken by the competent bodies in the countries on the design and application of the Art. 6 mechanisms;
- Considerable differences in the political objectives of both countries depending on the national socio-economic framework conditions, such as the state of the energy sector, the level of industrial development, or the education and employment situation, whereby these factors have a considerable influence on the respective climate policy potentials and objectives.

The South African Carbon Market Framework currently under development will probably be primarily orientated towards specific national policies and requirements. In this context, the Just Energy Transition strategy and the use of offsetting in the context of national carbon tax regulations are therefore likely to play an important role. National mitigation projects can already be used for offsetting carbon tax payments. In view of the fact that South African industry is to a large extent (e.g., Eskom, Sasol) burdened with high GHG emissions and is therefore likely to be confronted with increasing carbon tax payments in the coming years, a competitive situation between national offsetting and the use of Art. 6.2 and 6.4 may be expected.

For the authorization of Art. 6 activities in South Africa, the extent to which the projects can contribute to the creation of jobs and the improvement of energy supply combined with the simultaneous reduction of GHG emissions is likely to be particularly decisive. Important decisions by the government with regard to the future development of the electricity sector are still pending. The increased use of natural gas during a transition period towards the decarbonization of the sector through renewable energies cannot be ruled out at the present time.

It remains to be seen which decisions will be made in the national Carbon Market Framework with regard to the responsibility for authorizing Art. 6 activities. One option could be for DFFE to assume responsibility for Art. 6.2 and DMRE for Art. 6.4.

It may well be the possibility that two distinct Art. 6 markets will emerge in South Africa at the end of this development: (a) a domestic market for voluntary projects and/or Art. 6.4 projects without Corresponding Adjustments (CA), where MOs are priced based on the level of carbon tax payments, and (b) an ITMO market for higher-priced emission reductions that enable the implementation of strategic projects in South Africa through cooperation with international buyers.

With regard to Indonesia, the second case study analyzed, the analysis found the country is currently in the process of developing regulation on carbon trading that also guide the participation in international market-based cooperation, including Article 6. The government has inter alia defined a list of sectors (and sub-sectors) in which carbon trading is allowed. While in principle all sectors could become a source of carbon credits, the analysis showed that the actual suitability of sectors and technologies in Indonesia will also depend on whether units will be backed by corresponding adjustments (CAs), one key consideration under Article 6. With regard to the suitability of the Evaluation Principles and Criteria developed within this research project for assessing Article 6 mitigation activities in Indonesia, three cases were differentiated:

- In some areas, the analysis identified a strong complementarity between national provisions in Indonesia and the Evaluation Principles and Criteria. Indonesia has for instance established a requirement to develop baselines and carbon trading roadmaps at sectoral and sub-sectoral levels and to only allow trading after sectoral targets were achieved. This is in

accordance with the criterion to ensure NDC alignment of Article 6 activities and avoid overselling. The requirement to develop baselines at sectoral and sub-sectoral level is also in line with the requirement to develop baselines that are aligned with the NDC, as included in the Evaluation Principles and Criteria document.

- For some aspects contained in the Evaluation Principles and Criteria, coverage at sub-ordinate level or inclusion at a later point in time can be expected. This pertains for instance the rules for ensuring the additionality of the mitigation activity, which will presumably be covered at the methodological level as well as provisions for dealing with non-permanence of emission reductions and removals, which will be included in sector-specific regulations. One of the aspects that will presumably find its way into the regulations at a later stage is the mitigation activities' contributions to transformational change, which will presumably build on ongoing processes, such as the Just Energy Transition Partnership (JETP). Similarly, the details of sustainable development and other concepts are not included in the regulation at this stage, given that the government is ensuring the alignment of its regulation with other international processes in which it is involved.
- At the same time, however, the analysis also highlights areas of divergence. There is, for instance, no link to the SDG process, and market activities are currently not required to contribute to Indonesia's SDGs. Similarly, the findings indicate that defining the eligibility of activities at the global level can be problematic and that specific national circumstances need to also be taken into consideration.

The general prospects for cooperation between Indonesia and Germany appear somewhat mixed. While there is a need for international support and Indonesia is open to exploring new possibilities for cooperation, the country is already cooperating with several partners. Many of these countries have clearly expressed their willingness to buy ITMOs and are in advanced stages of cooperation also with other countries. This could limit the potential for Germany to become as a partner country in the area of market-based cooperation.

The applicability check of the Evaluation Principles and Criteria showed that some of the criteria were drawn up from a German perspective. They therefore follow the basic principles of German climate policy, such as the phase-out of fossil fuels or also Germany's development policy goals for achieving the international Sustainable Development Goals, which do not necessarily correspond to the partner countries' strategies for using Art. 6. The analysis found that these are primarily aligned with national framework conditions (e.g. carbon tax in South Africa) and the (climate) policy goals of the respective countries. The applicability check suing the examples of South Africa and Indonesia has shown that certain activities that would be suitable for carbon financing from the perspective of the host country might not be acceptable from the German side.

5.6 Prospects for Germany to use Article 6 for fostering climate ambition

The analysis of the project indicated that there are multiple options for Germany to use Article 6.2, despite the fact that using ITMOs for NDC achievement is not possible. Overall, the use of cooperative approaches for voluntary purposes was found to have a stronger potential and be associated with lower risks than compliance purpose uses. Making use of Article 6 as a framework to mobilize private sector capital and increase attractiveness for VCM buyers was found to hold considerable potential.

To ensure that this potential translates into actual benefits, the engagement should be guided by the basic principles derived from Article 6.1: environmental integrity, ambition raising and

sustainable development. As shown, these overarching principles can be specified on the basis of existing frameworks (KliK, SEA, GS, VCS) and compiled into the Evaluation Principles and Criteria to guide the selection of partner countries and mitigation activities.

The applicability check of the selection criteria using the case studies of South Africa and Indonesia underscores the relevance of national policy making in the host countries and how this influences the applicability of criteria developed unilaterally.

For some of the criteria we identified a strong complementarity with the national priorities, for instance with regard to the development of conservative baseline and avoidance of overselling. In some areas, however, the selection criteria do not necessarily align with the national priorities, for instance when it comes to the linkage to the SDG process or the sectoral focus of eligible mitigation activities. Overall, the findings indicate that defining the eligibility of activities at the global level has considerable limitations and that specific national circumstances need to also be taken into consideration.

We therefore suggest a bilateral process to be established between Germany and its potential partner countries to collaboratively develop criteria to guide the selection of Article 6.2 mitigation activities. This would not only allow for a better consideration of national circumstances but to also increase national ownership. In procedural terms, the development should involve stakeholders from both sides and also include representatives from the private sector, civil society and indigenous peoples organizations as well as academia. The dialogue should be guided by a common understanding of the overarching principles of environmental integrity, ambition raising and sustainable development. While the criteria should be considered a first step towards their operationalisation, there should be sufficient room to align the criteria to the specific national situation. With this approach, the design of cooperative approaches could be better aligned with national circumstances of partner countries and ultimately foster more ambition in the fight against climate change. By using the overarching principles as a common denominator, undermining of these principles can be ensured, while the objectives of the Paris Agreement are upheld.

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A Annex

A.1 List of interviewees

The authors would like to thank the following interviewees for valuable insights.

For the case study on Indonesia: Dicky Edwin Hindarto (Independent Consultant), Fenella Aouane (Global Green Growth Institute - GGGI), Kuki Soejachmoen (Indonesia Research Institute for Decarbonization - IRID), Paul Butarbutar (Indonesia Center for Renewable Energy Studies), Ximena Aristizabal Clavijo (Global Green Growth Institute - GGGI).

For the case study on South Africa: Robbie Louw (Promethium Carbon (PTY LTD), Olivia Tuchten (Promethium Carbon (PTY) LTD), Olivia Rumble (Climate Legal LTD), Andrew Gilder (Climate Legal LTD), Mike Levington (Navitas Holdings).