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Practical strategies to avoid over-selling

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Acronyms

AI	Annex I
BAU	Business as usual
CA	Corresponding adjustments
CDM	Clean Development Mechanism
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
GHG	Greenhouse gas
ITMO	Internationally transferred mitigation outcome
NDC	Nationally determined contribution
LT-LEDS	Long-term low emissions development strategy
MACC	Marginal abatement cost curve
MO	Mitigation outcome
PCCB	Paris Committee on Capacity-Building

Executive summary

A fundamental difference in the context of Article 6 mechanisms compared to the Kyoto Protocol mechanisms is that, under the Paris Agreement, all countries have mitigation pledges – unlike the Kyoto Protocol where only the industrialized countries had quantified emission reduction commitments. The Paris Agreement requires Parties to avoid double counting of mitigation outcomes, by applying "corresponding adjustments" (CAs) for any transferred mitigation outcomes to their reported emissions or other indicators used to track nationally determined contribution (NDC) progress. A major concern of prospective transferring countries under Article 6 is the risk that participation in cooperative approaches could compromise achieving their NDC, due to "overselling" emission reductions. This is not in the interest of acquiring countries either, since the perception of risk might reduce transferring countries' willingness to trade and to commit to corresponding adjustments. The objective of this report is to present options to address an important overselling risk: selling low-cost mitigation outcomes (MOs), which could compromise NDC achievement if remaining mitigation opportunities turn out to be too expensive (selling "low-hanging fruit").

The report first explains the nature and types of overselling risks, but then focuses on the risk of selling "low-hanging fruit". Next, the scope and methodology of this analysis are presented. The report then turns to how countries might prioritize different mitigation interventions for NDC implementation in the short and long terms, since this will determine how and where the country can engage with Article 6 cooperation while minimizing the risk of overselling. The analysis presents three broad groups of strategies that could reduce the overselling risks related to transferring low-cost emission reductions. The strategies are grouped as follows:

- Ensuring that activities that the country intends to use for the NDC are not part of the mitigation activities used for Article 6 cooperation.
- Not transferring all of the mitigation outcomes that are generated from cooperative mitigation actions.
- Implementing pricing strategies that create a pool of funds to invest in additional mitigation if necessary.

In addition, the report highlights the institutional and capacity-building needs to implement these strategies.

Most of the strategies could be used by both transferring and acquiring countries: transferring countries could do so through the choices on whether and how to participate in Article 6 cooperation, while acquiring countries could reduce overselling risks through the requirements of their purchasing programs (e.g. what types or origins of mitigation outcomes the country would purchase under which circumstances) as well as by supporting capacity-building programs in transferring countries.

The strategies were assessed qualitatively for how effective they might be at reducing overselling risks, as well as the burden each might place on government to implement, and the potential impact on the volume of transfers under Article 6 (i.e. market size from the point of view of the two countries' collaboration).

This analysis shows that there are a wide range of potential strategies that could address a key overselling risk – the risk that a country might transfer MOs that it later needs to achieve its NDC. No one strategy will meet all of the priorities of transferring and acquiring countries, because the appropriateness of a strategy may depend on each country's NDC pledges, its mitigation options, the type of analysis and data that is available on those mitigation options, and the capacity of government to manage the Article 6 strategy process.

An important next step for this analysis, therefore, could be to develop several country case studies that would apply the strategies to the particular capacity and needs of those countries. These case studies could be combined with developing capacity-building plans and with conducting the initial training or analysis to strengthen the transferring countries' ability to identify and prioritize mitigation interventions for NDC implementation.

The purpose of Article 6 is to increase ambition through cooperation, not to jeopardize countries' ability to achieve their NDCs. Which strategy, or combination of strategies, is most appropriate for a given country will depend not only on the range of mitigation opportunities and NDC ambition, but also on its other policy priorities, its capacity, and the robustness of the technical analysis behind its current NDC pledges. By working together, transferring and acquiring countries can explore how to implement the right combination and timing of strategies to ensure the Article 6 cooperation is mutually advantageous.

1. Introduction

A fundamental difference in the context of Article 6 mechanisms compared to the Kyoto Protocol mechanisms is that, under the Paris Agreement, all countries have mitigation pledges – unlike the Kyoto Protocol where only the industrialized countries had quantified emission reduction commitments. The Paris Agreement requires Parties to avoid double counting of mitigation outcomes. To do this, countries should apply "corresponding adjustments" (CAs) to their emissions or other indicators used to track nationally determined contribution (NDC) progress. Avoiding double counting is an essential component of all cooperative approaches. It will require robust accounting and tracking of units, not only those used for NDC compliance but also those used for other international obligations, such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

A major concern of prospective transferring countries under Article 6 is the risk that participation in cooperative approaches could compromise achieving their NDC, due to "overselling" emission reductions. This is not in the interest of acquiring countries either, since the perception of risk might reduce transferring countries' willingness to trade and to commit to corresponding adjustments. In addition, acquiring countries also bear a reputational risk in case the bilateral agreement leads the transferring country to miss its NDC. In the broader context, all Parties to the Paris Agreement share the responsibility to meet the ambitious goals of the Agreement, and none would want to take actions that could jeopardize that collective goal.

The issue of overselling risks is complex because it involves several different types of risks, which will require different policy responses. Four different kinds of overselling risks, discussed in more detail below, are as follows:

- Selling low-cost mitigation outcomes (MOs), which could compromise NDC achievement if remaining mitigation opportunities turn out to be too expensive (selling "low-hanging fruit").
- Selling MOs that do not represent real reductions (selling "fake fruit").
- Selling MOs for which the reduction in emissions will not be captured by the transferring country's GHG inventory (selling "uncounted fruit").
- Selling MOs generated outside the scope of the NDC – if the international rules require corresponding adjustments (CAs) for these transfers ("trying to sell peaches from an apple farm").

Given these overselling risks, it is not surprising that some developing countries have been reluctant to engage in early Article 6 pilots. Strategies are therefore urgently needed to reduce these risks, so that – at a minimum – countries can decide whether or not to engage more actively in piloting Article 6 cooperation, based on a clear understanding of whether this is in their national interest.

The objective of this report is to present options to address the first type of risk – selling low-cost mitigation outcomes that then make it more difficult for the transferring country to achieve its NDC goals. The report analyzes what both acquiring and transferring countries can do to minimize this risk of overselling and assesses the advantages and disadvantages of different options.

The following subsections in this introductory section provide more background the nature and types of overselling risks – some of which are already addressed in the literature – as well as the scope and methodology of this analysis. Section 2 then

explains how countries might prioritize different mitigation interventions for NDC implementation in the short and long term, since this will determine how and where the country can engage with Article 6 cooperation without risking overselling. Sections 3, 4, and 5 then present three broad groups of strategies[1] that could reduce the overselling risks related to transferring low-cost emission reductions. Most of these strategies could be used by both transferring and acquiring countries: transferring countries could do so through how the country chooses whether and how to participate in certain Article 6 cooperation, while acquiring countries could do so through the requirements of their purchasing programs (e.g. what types or origins of mitigation outcomes the country would purchase under which circumstances) as well as by supporting capacity building programs in transferring countries. The strategies are grouped as follows:

- Ensuring that activities that the country wants to use for the NDC are not part of the mitigation activities used for Article 6 cooperation (section 3).
- Not transferring all of the mitigation outcomes that are generated from cooperative mitigation actions (section 4).
- Implementing pricing strategies that create a pool of funds to invest in additional mitigation if necessary (section 5).

Section 6 highlights the institutional and capacity building needs to implement these strategies, and how they could be supported by acquiring countries more broadly. Section 7 presents assessment of the strategies and thoughts on a roadmap for using these strategies in combination and over time, followed by conclusions in section 8.

1.1 Understanding the types of overselling risks

This section explains the different types of overselling risks in more detail and indicates the previous literature on some of those risks.

Selling low-cost mitigation outcomes that the country wants to use to achieve its NDC (selling "low-hanging fruit"): If countries sell low-cost mitigation outcomes that they would want to use to meet the country's NDC pledges cost-effectively, this would make it more difficult to reach their NDC goal. Countries will develop NDC implementation plans using different approaches, processes and tools. Abatement cost of the options will be an important driver, but other policy priorities and barriers to implementation of different options will also be important. The risk of selling mitigation outcomes from low-cost interventions that the country wants to use for its NDC is the main focus of this report. This issue is explained in more detail in section 2.

Selling mitigation outcomes that do not represent real reductions (selling "fake fruit"): If the activities underlying the mitigation outcomes are non-additional, then the transferring country's greenhouse gas (GHG) inventoried emissions will not decrease with respect to business as usual (BAU).[2] When the corresponding adjustments are applied, the transferring country's adjusted emissions for NDC reporting will therefore increase, taking it farther away from this goal. A similar problem would occur if the emission reductions for the mitigation outcomes were "overestimated", in that the corresponding adjustments would be larger than the actual reduction in national GHG emissions. The issues of additionality and quality of

[1] Some of the strategies build upon ongoing Article 6 strategy work for Colombia supported by the Partnership for Market Readiness (PMR)

[2] If sector emissions are declining for other reasons, there could still be lower GHG inventory emissions, but the project emission reductions would not show up as a departure from this BAU emissions level in the inventory.

units have been addressed elsewhere (Spalding-Fecher et al. 2017; Hermwille and Obergassel 2018; Michaelowa et al. 2019; Schneider, Füssler, et al. 2017; Mizuno 2017; Schneider and La Hoz Theuer 2019; Schneider, Fuessler, et al. 2017; La Hoz Theuer et al. 2017), and will therefore not be the focus of this analysis.

Selling mitigation outcomes for which the reduction in emissions will not be captured by the transferring country's GHG inventory (selling "uncounted fruit"): For some mitigation actions, the transferring country's national GHG inventory system might not be detailed enough to capture the actual emissions reductions. For example, if the waste sector inventory used the same parameters for waste treatment, waste quantity and waste composition for the entire country, then interventions at selected landfill sites to change the waste collection and treatment process (and resulting methane emissions) might not be reflected in the inventory. This means that, when the corresponding adjustments were applied, they would increase the transferring country's adjusted emissions for NDC compliance and take it farther away from its NDC pledge. The issue of visibility of carbon market approaches in inventories has been addressed elsewhere (Schneider et al. 2020; Prag, Hood, and Barata Martins 2013; Kollmuss, Schneider, and Zhezherin 2015) and will therefore not be the focus of this analysis.

Selling mitigation outcomes generated outside the scope of the NDC – if the international rules require corresponding adjustments for these transfers ("trying to sell peaches from an apple farm"): In the earlier days of the Paris Agreement, there was discussion about whether Article 6 cooperation outside the scope of the NDC might be a way to reduce the risk of overselling, since it would not affect NDC performance (Broekhoff et al. 2017). However, this would only be the case if there were no CAs implemented for transfers outside the scope of the NDC. Negotiations on this issue are still ongoing, but options are on the table that CAs will be required for most, if not all, transfers outside the scope of the NDC. In addition, a group of more than thirty countries [updated January 6th, 2020] have signed the San José Principles, which states "that all use of markets toward international climate goals is subject to corresponding adjustments" (Costa Rican Environment Ministry 2019). CAs would increase the transferring country's adjusted emissions for purposes of NDC compliance, since there would be no decrease in the GHG emissions in the covered sectors of the NDC (e.g. an Article 6 project in the forestry sector where the country only had an energy sector goal). Buying from outside NDCs generally also creates incentives to not increase NDC ambition over time (Spalding-Fecher 2017; Fuessler, Kohli, Lehmann, et al. 2019; Schneider et al. 2019). Therefore, even if no CAs are needed, the strategy to buy MOs generated from outside the scope of the NDC has other important disadvantages for the long-term goals of the Paris Agreement.

1.2 Scope and methodology

As explained above, this report focuses on the overselling risks related to transferring mitigation outcomes from low-cost interventions, because this is a growing concern that has not been sufficiently addressed by previous policy proposals or country-level analysis. It is also important to note a broader risk to environmental integrity that is not covered in this report. This is the risk from transfers from countries whose NDC pledge is actually above BAU emissions (i.e. transfers of "hot air"). While this transfer will not make it more difficult for the transferring country to meet its NDC pledge, it is a form of "global overselling" in that it makes it more difficult to reach the global goals for action under the Paris Agreement. This issue has been addressed in other literature and policy papers (Kollmuss, Schneider, and Zhezherin 2015; Schneider, Fuessler, et al. 2017).

The methodology for this analysis included a literature review and internal review of the (unpublished) experience of the authors in Article 6 pilots. This led to an initial list of potential strategies, which were presented and discussed in interviews with a small number of interviewees from transferring and acquiring countries as well as international carbon funds (see acknowledgements after cover page). The consulting team then elaborated on some of the strategies identified in these reviews and interviews, to understand some of their advantages and disadvantages and how they could be applied by transferring and/or acquiring countries. Finally, the strategies were assessed qualitatively for how effective they might be in reducing overselling risks, as well as the burden each might place on government to implement, and the potential impact on the volume of transfers under Article 6 (i.e. market size from the point of view of the two countries' collaboration).

2. Prioritizing mitigation actions to achieve NDC goals

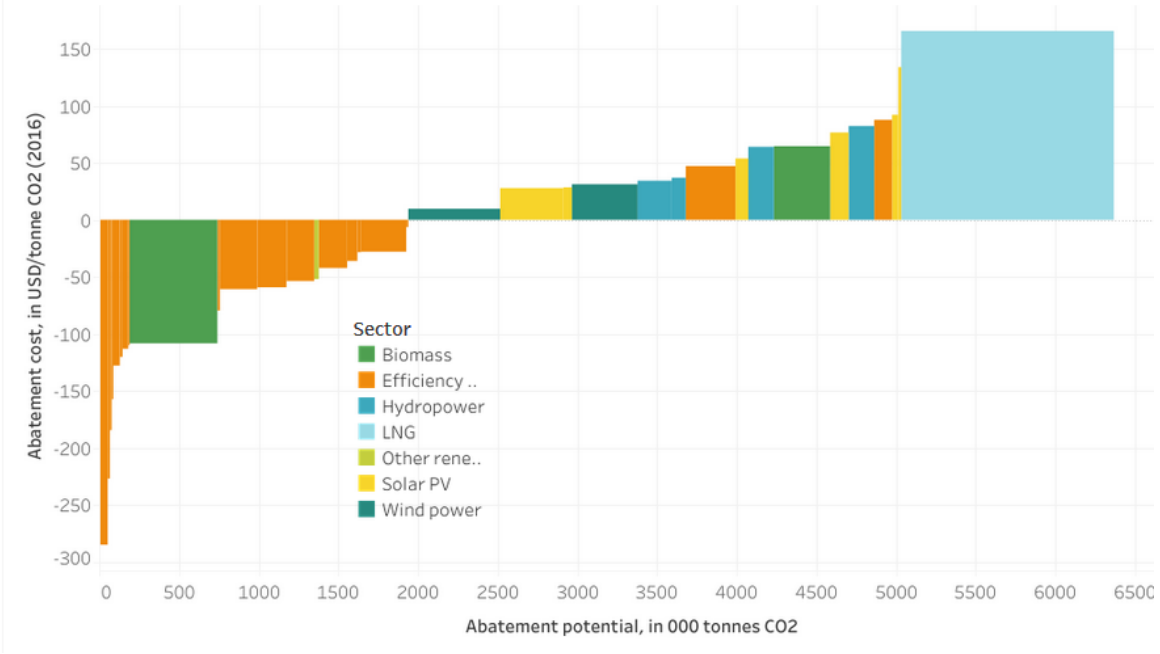
To evaluate and reduce its risks of overselling, a transferring country would first need to decide on what mitigation options to prioritize in order to meet its NDC. While cost-effectiveness will be an important criterion, there may also be other considerations, such as alignment with other development policies, social and economic impacts or technology development priorities (Cohen et al. 2019; Grafakos et al. 2010). This section discusses tools for thinking about the costs of mitigation options, which can provide a valuable input to deciding which interventions will be part of the NDC implementation plan. The choices and priorities will change over time, however, with changes in technology costs, institutional learning, and development of technical capacity; so the section also discusses embedding these choices within a long-term low-emissions development strategy.

2.1 Identifying the "NDC package" of interventions

Transferring countries will likely consider several factors when targeting specific interventions for NDC implementation. The first would be the abatement costs and potential of different options, given the severe constraints that many developing countries face in public budgets and access to capital. A second factor would be alignment with policy priorities, where some actions that may have limited mitigation impacts could be important for socio-economic development priorities. Finally, the political and practical feasibility of mitigation actions will be an important factor. For example, a country might identify mitigation options that have low abatement costs over the long run but for which the necessary technical, managerial and institutional capacity is not present and so needs international support. Based on all of these factors, a transferring country could develop a NDC implementation plan that clearly specified which interventions the country would use – the "NDC package". This might include not only mitigation options with the lowest economic cost (i.e. abatement cost measured from the point of view of society), since some of those options might face technical barriers or might not align with more urgent policy priorities.

For the first input to the NDC implementation process, one widely used tool to screen mitigation interventions is a marginal abatement cost curve (MACC) (Vogt-Schilb and Hallegatte 2014; Wagner et al. 2012; Kesicki and Ekins 2011). A MACC shows a set of mitigation interventions, ranked from the least to most expensive, with their abatement cost (e.g. $/tCO$_2$) on the vertical axis and their abatement potential in a given period (e.g. mtCO$_2$) on the horizontal axis. An example of a sectoral MACC is shown in Figure 1.

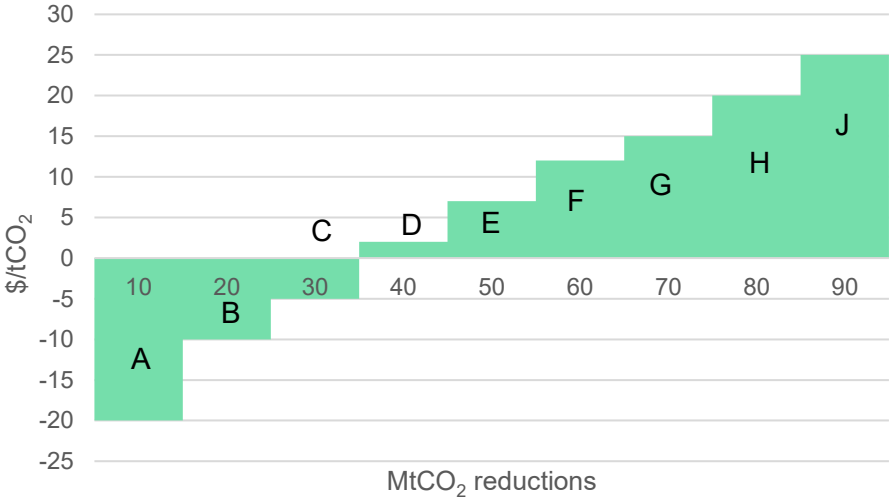
Figure 1. Energy sector marginal abatement cost curve for Sri Lanka – emission reductions in 2030 vs business as usual



Source: RMA (2018)

A simplified example of a MACC is shown in Figure 2, to illustrate how other factors may be considered when choosing the NDC package of interventions. Of course, these figures imply that the transferring country has a detailed assessment of its mitigation options so the country can make decisions on Article 6 cooperation. The analysis would also need to be revised regularly to accommodate changes in technology costs, implementation of other mitigation investments, and changes in socio-economic drivers of emissions. Developing or improving this assessment could be an important part of an overall Article 6 strategy.

Figure 2. Example of marginal abatement cost curve



Source: Authors

Once the transferring country has considered the policy priorities and practical feasibility of the mitigation options identified earlier, the country might choose a subset of them to implement its NDC. For example, of the interventions shown in Figure 2, if interventions D

and E required additional technical expertise not available in the country or were not high priorities for economic and social development policy, but H and J were priorities, the country might not include D and E in its final prioritized list of interventions.

Table 1. Example of prioritized lists of interventions to achieve NDC

Intervention	Abatement cost ($/tCO$_2$)	Abatement potential (mtCO2)
A	-20	10
B	-10	10
C	-5	10
F	12	10
G	15	10
H	20	10
J	25	10
Total for NDC		70

Note: Letters refer to mitigation interventions shown in Figure 2.

By quantifying the NDC target – including potentially analyzing what the overall target means for (sub-)sectoral targets and action plans – the transferring country can decide if a mitigation action proposed for Article 6 trading is part of the NDC package. The MACC analysis that informs the prioritization of mitigation interventions would need to cover key mitigation options in all NDC sectors for the relevant time period. It could build on NDC background analysis – where available – and other studies for biennial update reports, national communications, and similar reporting.

There are, of course, limitations to this approach to identifying the NDC package. First, many developing countries did not have a detailed mitigation analysis behind their initial NDC pledges, and so this analysis is urgently needed and will require financial and technical support (see section 6.2). In terms of technical issues, one challenge with using a MACC for the abatement cost inputs in the selection process is to create options that are mutually exclusive, so that abatement potential can be summed to the total NDC pledge.[3] In practice, some options may be sequenced or may have synergies, overlaps or cross-effects, and so the analysis could be iterative. Finally, as discussed above, the transferring country will have policy considerations other than just abatement cost when selecting an NDC package. Other social and economic impacts of the interventions (positive and negative) will also affect the priorities for domestically driven mitigation (Cohen et al. 2019).

Without a detailed mitigation opportunity analysis, transferring countries could still potentially prioritize mitigation options for their NDC package. Sectoral ministries, for example, could identify which technologies or project types fit with their priorities and timelines for policy implementation. The country's existing national development plans may also include priority projects. The difficulty with selecting the NDC package without an analysis of abatement cost and potential as an input, however, is that the country might *unintentionally* choose a more expensive pathway for achieving its NDC while allowing international partners under Article 6 to benefit from some lower cost-mitigation options, as opposed to *deliberately* choosing to implement some options with high abatement costs

[3] As an example, the emission reduction impact of electricity efficiency interventions depends on only the amount of electricity saved, but also the carbon-intensity of the electricity system. If the mitigation impact of new renewable power program and electricity-efficiency programs are calculated separately, therefore, this will overestimate the combined emission reductions from implementing both programs. The alternative would be to use an energy system model to assess the impact on emissions from both a cleaner gird *and* more efficient end use.

because they have other important benefits that the country values. For this reason, even if some of the abatement costs and potential must be estimated from international or regional proxies (or similar studies), transferring countries should map out their NDC package based on a quantitative analysis of abatement cost and potential, such as a MACC, along with other criteria that reflect national priorities.

An analysis of the NDC package provides two important results. First, it identifies specific mitigation interventions that should *not* be used for international cooperation (or at least unless sufficient funding is provided to replace them with other more expensive options). Second, it will provide an estimate of the marginal cost of meeting the NDC – in other words, the abatement cost of the next unit of emission reductions beyond the NDC goal. However, this may be complicated by the fact that some options that have low abatement costs might be outside the NDC package because they face other barriers or are not aligns with the transferring country's development priorities.

2.2 Developing a long-term low-emissions development strategy that identifies the role of Article 6 cooperation

In parallel with the mitigation analysis needed as the basis for current NDC goals and short-term strategies for Article 6 cooperation, transferring and acquiring countries could clarify in their long-term low emission development strategy (LT-LEDS) how Article 6 cooperation will be used to support decarbonization (Fuessler, Kohli, Spalding-Fecher, et al. 2019). Article 4.19 of the Paris Agreement calls on all Parties to develop and communicate LT-LEDS. These strategies would form the basis of Parties' future NDCs, as they would lay out a pathway for mitigation up to 2050. While not a specific requirement, explaining the role of Article 6 mechanisms in the LT-LEDS could provide an opportunity for countries to present how voluntary cooperation on mitigation under Article 6 would provide a more rapid and cost-effective pathway towards decarbonization than independent action by each country – and would not compromise any of the intermediate goals (i.e. the next few NDC cycles) (see also CCAP 2017). The strategy could include long-term emission goals by sector, options to meet these, the role of crediting programs in driving technological change, and what future NDC pledges might be.

If there is no explanation of the role of Article 6 in the LT-LEDS, there is a risk that acquiring countries will rely too much on transfers for NDC compliance and so may not invest domestically in low-emission development technologies. For transferring countries, there is a risk that allowing transfers of low-cost mitigation options could increase future mitigation costs and consequently create a perverse incentive not to increase ambition over time (Fuessler, Kohli, Spalding-Fecher, et al. 2019). An LT-LEDS that acknowledges the role of Article 6 could reduce the risks of overselling if it is based on a detailed analysis of mitigation opportunities within the country, as well as how those opportunities could be financed and implemented. Some opportunities in a given NDC cycle could form the basis of increasingly ambitious pledges, while other opportunities could be flagged for both climate finance support and Article 6 cooperation. The range of opportunities and their costs would change over time, so the LT-LEDS could present a longer-term view of how Article 6 cooperation could evolve and how to avoid overselling in the medium term (i.e. beyond the first NDC cycle).

3. Strategies to exclude activities that the country intends to use for NDC achievement from Article 6 cooperation

For this group of strategies, the basic principle is that if countries are able to identify the mitigation activities the country needs to reach its NDC targets then an important element of their Article 6 strategy could be to ensure that these interventions are *not* used as the basis of international cooperation.[4] This is because, if the country transfers mitigation outcomes from these activities and implement corresponding adjustments, it will need to replace this mitigation with other, higher-cost (or otherwise more difficult) interventions. This section presents several strategies that could be used to "ringfence" these interventions.

For all of the strategies in this section and the following two sections 4 and 5, an additional role for the acquiring country could be to support building the capacity needed for the transferring country to implement the strategy (see section 6).

3.1 Negative list to screen out activities in the NDC package

One strategy would be to use the list of mitigation activities that is part of the NDC package to create a "negative list" – in other words, a list of activities where Article 6 cooperation would not be allowed. Article 6 cooperation would be allowed for all activities not included in the list and therefore would focus on mitigation activities that the country could not or would not (i.e. due to high costs) implement itself.

The level of detail of this list would depend on the level of detail in the original NDC analysis, but typically the list could include both project types (e.g. landfill gas capture) as well as sub-types or technologies (e.g. landfill gas capture and flaring, landfill gas capture and use for power generation) and/or specific geographical regions within the country. If the original analysis defined interventions based on scale (e.g. wind power plants > 50 MW), then the negative list could also specify scale (e.g. plants > 50 MW might be on negative list, but smaller plants would be allowed for Article 6).

The role of the *transferring country* would be to develop this list and to use it as the basis for authorizing Article 6 cooperative activities. The role of the *acquiring country* could be to require that all partner countries create such a negative list, and then only acquire mitigation outcomes based on mitigation activities outside of this negative list.

The advantages of this strategy are that it is transparent (i.e. potential project developers can easily see if their project would be excluded or not) and that it could be implemented quickly if the country already had some form of NDC mitigation analysis and/or implementation plan. In addition, the cost of implementation for government would be low, once the mitigation analysis was available (it is needed in any case to set and revise NDC pledges). The disadvantage would be that, if the NDC mitigation analysis were not yet available, the strategy could not be implemented until that analysis was complete. Another important disadvantage would be that it would prevent the country from selling mitigation outcomes that it *does not* need from within a project type on the list. For example, if a country's NDC implementation plan calls for 50% electricity vehicle penetration, and electric vehicles are entirely excluded from Article 6 cooperation, this would preclude it being able to sell internationally transferred

[4] This paper does not specify whether the NDCs for the transferring countries are unconditional or conditional. Corresponding adjustments would apply to all transfers, and this is not related to the nature of the transferring of the acquiring country's NDC pledges. Because of the requirement for CAs, Article 6 cooperation cannot direct help transferring countries to meet their conditional targets, because the transferred units must always be added back when reporting emissions (or other NDC metrics) for purposes of NDC compliance (Schneider, Fuessler, et al. 2017).

mitigation outcomes (ITMOs) for electric vehicle penetration beyond 50%. The reason is that a negative list is specified by technology or project type, not the specific capacity, plant or site within the project type. For example, a negative list based on project type cannot distinguish between the first 100 MW of renewable power capacity and plants that are installed after this.

3.2 Use Article 6 to implement "inaccessible" technologies

Another strategy could be to create positive lists to identify specific activities where Article 6 would be focused on a given country. The goal of such lists would be to identify emission reduction options that are "inaccessible" to the transferring country without support and would not be part of the NDC package. This could be due to high abatement costs, technical barriers, institutional and regulatory barriers, or other reasons. The term "inaccessible technologies" is used by Warnecke et al. (2018) in discussing strategies for using Article 6 to increase ambition, and is also discussed in this context by Fuessler et al. (2019). Positive lists are also applied in climate finance by public financial institutions for determining low-carbon investment priorities (Warnecke et al. 2018).

Identifying inaccessible technologies would consider both the maturity of a technology as well as the costs (Warnecke et al. 2018). The positive list could contain high-cost emerging technologies or technologies that required technical expertise not currently available in the country. An example would be Colombia's NDC, where the unconditional NDC scenario did not include some low abatement cost interventions that required specialist technical expertise (e.g. new steel-manufacturing technologies, advanced whole-building design approaches) (Universidad de los Andes 2016b; 2016a) . There would also be a "grey zone" – technologies not on the positive list and also not on the negative (see section 3.1) – that would need further investigation to clarify whether a technology can be considered as inaccessible for a certain country or even specific areas of a country (Warnecke et al. 2018; Fuessler, Kohli, Lehmann, et al. 2019). While such a positive list needs to be analyzed for each country individually, international tools might help with the analysis. There are internationally developed decision trees and eligibility criteria that could be applied to identify emerging technologies that could benefit from international financial and technical support and are unlikely to be part of a transferring country's NDC package (Schneider, Fuessler, et al. 2017). Denishchenkova et al. (2019) present two other options:[5]

- use the eligibility criteria of the EU Innovation Fund, which are used to target new low-carbon technologies for rapid introduction;
- use the new "EU Taxonomy" for sustainable financial investments that identifies economic activities contributing to climate change mitigation.

Such a positive list would ideally be developed by the *transferring country* itself, which could then use the positive list as a basis for authorizing Article 6 cooperative activities. An *acquiring country* could require partner countries to create such a positive list and then only acquire mitigation outcomes based on such a list. While an acquiring country could also develop a positive list for a prospective transferring country based on international tools and expertise, for such a list to be complete and useful, it needs detailed country-specific information for which a collaboration with the transferring country would be necessary.

The advantage of this strategy is that it is transparent for all involved entities, since it is based on clearly defined technologies. If the country already had a detailed analysis of mitigation

[5] In both cases, these would need to be adapted to distinguish which interventions might be necessary to meet the NDC, as opposed to those interventions that would be outside of that package.

options for the NDC, then this might include some interventions that were higher-cost or faced other barriers and so could be suitable for this strategy. If such analysis was not available, then a disadvantage would be the time and cost needed to develop such a list, which would potentially require capacity-building support. Another disadvantage would be that the interventions on the positive list might not be available in the future to contribute to the NDC, especially if commitments to transfer emission reductions are extended into the next NDC cycle.

3.3 Abatement cost threshold for Article 6 activities

An alternative strategy to specifying which *activities* should be reserved for the NDC and not used for Article 6 would be to define an abatement *cost threshold* for cooperative activities. This cost threshold would be set at the marginal cost of meeting the NDC goal – based on the identified NDC package that considered both cost and other factors – so that only activities whose abatement costs were above this would be authorized for generating mitigation outcomes that could be transferred under Article 6. This is an indirect way of ensuring that the NDC package of interventions is kept for the goal, but using abatement cost as the basis of the restriction allows more flexibility. If the transferring country identified another low-cost mitigation option in 2022 that could replace something in the original NDC package, for example, this would still be available for domestic use – while under the positive/negative list approaches this option might have been already used by an Article 6 cooperative action.

The role of the *transferring country* would be to set the abatement cost threshold and then use this as the basis to decide which Article 6 cooperative activities to authorize. The role of the *acquiring country* could be to require that partner countries identify this abatement cost threshold and only then acquire mitigation outcomes based on mitigation activities with an abatement cost above this threshold.

The obvious disadvantage of this strategy is the difficulty of defining, presenting and justifying the abatement cost. First, the abatement costs in the national MACC are economic ones – which consider the opportunity costs of different investment – rather than private costs faced by those implementing the interventions. An energy-efficient lighting intervention, for example, would have a large negative cost from the point of view of society (i.e. because the energy savings pay for the additional capital costs over time), but from the point of view of a project developer (i.e. who does not see the energy savings), this might appear to be a higher-cost project. More fundamentally, the strategy would create a strong incentive for project developers to inflate the abatement costs that they present – or even to choose less efficient means of implementation so that the abatement cost would be above the threshold. This would not promote the efficient use of resources. An advantage of this strategy is that it means that low-cost options are saved for the country's NDC goals, even if they were not all identified in the initial MACC analysis (which is likely). This could be problematic, however, if some low-cost options were excluded from the NDC package because they did not align with policy priorities or faced other barriers: this strategy would effectively ban these activities for Article 6 cooperation, which would not be desirable.

3.4 Baselines derived from NDC goals

Another strategy would be to incorporate the NDC pledges into the baseline for crediting programs – and particularly in the baseline activity level – so that only the mitigation activities that go further than the interventions identified for the NDC goal would be eligible for crediting (see examples in Broekhoff et al. (2017) and Fuessler et al. (2019)). Traditional baseline-setting approaches, particularly in the CDM, did not consider the impact of new

climate change mitigation policies (Spalding-Fecher 2013). This will need to change now that transferring countries are implementing policies to achieve their own NDC goals.

For example, a country may have included landfill gas to electricity as an intervention and based its estimate of emission reduction potential on implementing this technology at ten of the country's twenty major landfills by 2030. Using this as the baseline activity level for the crediting program would mean that only landfill gas-to-electricity activity at additional landfills would be eligible for crediting. All methane capture and use at the first ten landfills would be excluded from crediting. As another example, a country might have an NDC to generate 1000 GWh of renewable electricity per year by 2030, ramping up from 100 GWh in 2020. Similarly, the Article 6 program could only credit power generation beyond 1000 GWh in 2030 (and a pro-rated amount in earlier years).

The role of the *transferring country* could be to develop baselines derived from the NDC targets. The role of the *acquiring country* could be to require the use of baselines in line with NDCs.

The advantage of this strategy is that it only allows the use of mitigation outcomes for Article 6 that go beyond the NDC target, without being as restrictive and inflexible as positive/negative lists. The disadvantage is that the feasibility of having NDC-linked crediting baselines will depend on how the country's NDC targets and actions are specified, as well as the level of detail in any mitigation analysis behind those targets. There are cases where it will be difficult to link crediting baselines to NDCs, because the impacts of the NDC on the sector or technology area targeted by mitigation activity may not be quantifiably based on the NDC, or might not be covered by the scope of the NDC. For example, even though many countries mention specific NDC actions, these are often illustrative and are not directly linked to emission reduction pledges. In addition, if the NDC is expressed only as an economy wide reduction in GHGs, this will be difficult to translate into sectoral, sub-sectoral or even technology-level trajectories for mitigation action.

4. Strategies to "share" mitigation outcomes generated by cooperative mitigation actions

Rather than trying to "ringfence" certain interventions for the NDC, a different approach to managing the uncertainty of NDC achievement would be to not transfer all the mitigation outcomes that could potentially be generated. The following sub-sections present several different strategies for how this could be implemented.

4.1 Simple division of mitigation outcomes from cooperative activities

Perhaps the simplest strategy is to allow a wide range of Article 6 cooperation, but only allow a share of the mitigation outcomes from those activities to be transferred internationally. The remaining mitigation outcomes could therefore be used towards the transferring country's NDC. The strategy might use a fixed share set upfront for all mitigation outcomes that would be shared, or this might vary by sector or even project type.

The role of the *transferring country* could be to define what share of mitigation outcomes could be transferred. The *acquiring country* could also define the minimum share of mitigation outcomes that it needs from those activities, which might vary across countries or types of mitigation activities.

The advantage of this strategy would be that its implementation is transparent and reasonably simple. The disadvantage would be the difficulty of choosing the level of sharing so that it kept sufficient mitigation outcomes within the transferring country without making the potential Article 6 cooperation programs unattractive for the acquiring country. If a certain level of carbon revenue cashflow is needed to make the mitigation activity possible (e.g. to buy down the cost of a low-carbon technology to make it financially viable), then sharing the mitigation outcomes essentially raises the unit price of the carbon finance (i.e. the price per tCO_2 from the perspective of the acquirer). More sharing will therefore increase prices for the mitigation outcomes. While this may not impact global demand, it does impact the competitiveness of the transferring country in relation to other suppliers of ITMOs, so the resulting volumes transferred could fall. In addition, setting the right level of sharing depends on where the Article 6 cooperation happens. In the extreme case, if Article 6 cooperation was in the mitigation interventions that would have been used to meet the transferring country's NDC, any outcomes transferred would be overselling, because they have to be replaced by more difficult or expensive mitigation options to still reach the NDC.[6]

4.2 Limit crediting periods

Long crediting periods (i.e. longer periods during which mitigation outcomes are generated and transferred for NDC use) could contribute to a higher risk of overselling, because of increasing ambition and wider scope in case of an NDC update during a crediting period. Having shorter crediting periods can therefore help protect against overselling risks. It would limit the years during which a transferring country would sell its mitigation outcomes and would allow it to use them earlier for the achievement of its own – and in the meantime more ambitious – NDC.

Limiting crediting periods can be done by both the *transferring* and *acquiring countries*. The advantage of this strategy is that the crediting period is established at the beginning, and therefore the government burden is lower than for other approaches, such as regularly updating the crediting baseline. The disadvantage of the strategy is the difficulty of identifying a limit that substantially reduces the risk of overselling without increasing the price[7] of the mitigation outcomes so much that they would not be attractive to acquire. This is because the required upfront investments for low-carbon technologies are often high, so that the acquiring entity has an interest in having longer crediting periods. In addition, the situation should be avoided where shorter crediting periods lead to a bias towards investments with shorter payback times.

4.3 Conservative baselines

Using conservative/ambitious baselines could be another strategy to reduce overselling risk. Just as division of mitigation outcomes and shorter crediting periods keep some of the mitigation impact of intervention within the transferring country, using a more conservative baseline for calculating mitigation outcomes would have the same effect. Baselines could be developed that are in accordance with the long-term goals of the Paris Agreement, rather than simply based on the near-term NDC goals. Denishchenkova et al. (2019) propose the

[6] This assumes that the baseline for calculating these mitigation outcomes does not incorporate the NDC pledges, but references a "business as usual" scenario.

[7] The assumption here is that, if a mitigation intervention requires a certain amount of incremental financing to catalyze implementation, then the shorter the crediting period, the fewer the mitigation outcomes transferred and therefore the higher the price needed per unit to secure the same total financial flows.

following two procedures for setting a baseline: (a) defining a new long-term trajectory that is called a long-term determined contribution, or (b) setting baselines in line with the long-term goals of the Paris Agreement ("science-based targets").

The first approach would define the long-term determined contribution for the sectors considered for the mitigation activities. The analysis could be carried out by an independent research organization mandated by both the acquiring and transferring countries specifically for purposes of developing the Article 6 cooperative activity. In principle, the long-term determined contributions should be in line with reaching the long-term goals of the Paris Agreement.

The second approach would articulate sectoral emission trajectories in line with the long-term goals of the Paris Agreement. The proposed approach would follow a method often used in the context of the so called "science-based targets" for financial investments, e.g. for the certification of green bonds. Rather than trying to allocate global emissions budgets to different countries and sectors, this approach instead creates a baseline that is a linear interpolation between current emissions and zero emissions at an appropriate year to meet the Paris Agreement goals. Denishchenkova et al. (2019) provide an example from the building sector: A new building of a specific size emits on average 6 tonnes of CO_2 per square meter per year. The baseline for an energy efficient building newly built in 2020 would start at 6 tCO_2/m^2 but would reduce to 4 tCO_2/m^2 in 2030, 2 tCO_2/m^2 in 2040, and, finally, zero in 2050.

The role of the *transferring country* could be to develop conservative baselines, while an *acquiring country* might require the use of such baselines.

An advantage of using tools and analytical approaches linked to the long-term goals of the Paris Agreement as a way to define "conservativeness" is that it could provide a good alternative to using NDC-derived crediting baselines in case the NDC is not specific enough. A disadvantage of this strategy is that the different procedures for developing the conservative baseline require assumptions about burden-sharing and equity for formulating targets in line with the long-term goals of the Paris Agreement. In addition, the transferring country may see the application of such an approach as tantamount to rewriting its NDC. Finally, by reducing the amount of mitigation outcomes that will be transferred under the program, this could increase the price of the transferred MOs if the contribution from the acquiring country side was fixed. In this sense, conservative baselines are a way of approximating NDC-linked baselines.

4.4 Conditionality on Article 6 transfers

A different strategy for addressing the uncertainty around overselling would be to make all transfers of mitigation outcomes conditional on the transferring country achieving – or being on track to achieving – its NDC. In other words, although various Article 6 cooperation agreements could be signed during the NDC period, no transfers would be authorized until the end (or nearly the end) of the period once the NDC goals were met.

This strategy could be initiated by either the transferring or acquiring country: the *transferring country* might state that the country would only authorize transfers once certain milestones toward the NDC were met; the *acquiring country* might have a rule for its entire portfolio of Article 6 engagement about only taking transfer of mitigation outcomes once the transferring country had made demonstrable progress towards its NDC.

The advantage of this strategy is that it would effectively eliminate the risk of overselling. However, a clear disadvantage is that it would also most likely eliminate interest from

acquiring countries (and entities within those countries that could be carbon market participants), since there would be no guarantee that the country would be able to use any of the mitigation outcomes generated towards its own NDC. A variation on this would be to transfer a *portion* of the mitigation outcomes during the NDC period and hold back the remaining portion until it was clear that the transferring country would meet its goal.

5. Strategies for Article 6 pricing to fund a "reserve" for additional mitigation

Rather than not transferring some of the mitigation outcomes that were achieved through the cooperative action, the transferring country could use pricing strategies to set aside funding for additional mitigation if necessary.

5.1 Charging a levy to fund a mitigation outcome reserve or future ITMO purchases

Another strategy for the *transferring country* would be to allow full transfer of any mitigation outcomes generated during the NDC period and to charge a levy or tax on those transfers to establish a reserve fund. This reserve could then be used to make up any future shortfall in the NDC, either by investing in additional mitigation activities domestically or by purchasing mitigation outcomes from other countries towards the end of the NDC period. As with the sharing of mitigation outcomes, the levy might be fixed for all projects or could vary by project type, similar to the "tax" imposed on CDM projects by China in its national approval process. Unlike the two-part pricing option discussed below, however, the levy might not be tied to specific technology or project types – it might be set at a conservatively high level even if the country did not have a detailed mitigation option analysis.

The advantage of this strategy is that it would be transparent. The disadvantage would be that it has the same effect as many of the other strategies in terms of potentially limiting the ability of the transferring country to compete for carbon finance, since it would raise the effective price of mitigation outcomes. More importantly, it would only address the overselling risk if the levy were high enough to collect sufficient revenue to compensate for any gap between the NDC goal and actual emissions during the NDC period. This would depend on the cost of the alternative options domestically (which would, almost by definition, be higher than the original NDC package)[8] and the price and availability of mitigation outcomes in the international market – which is also highly uncertain.

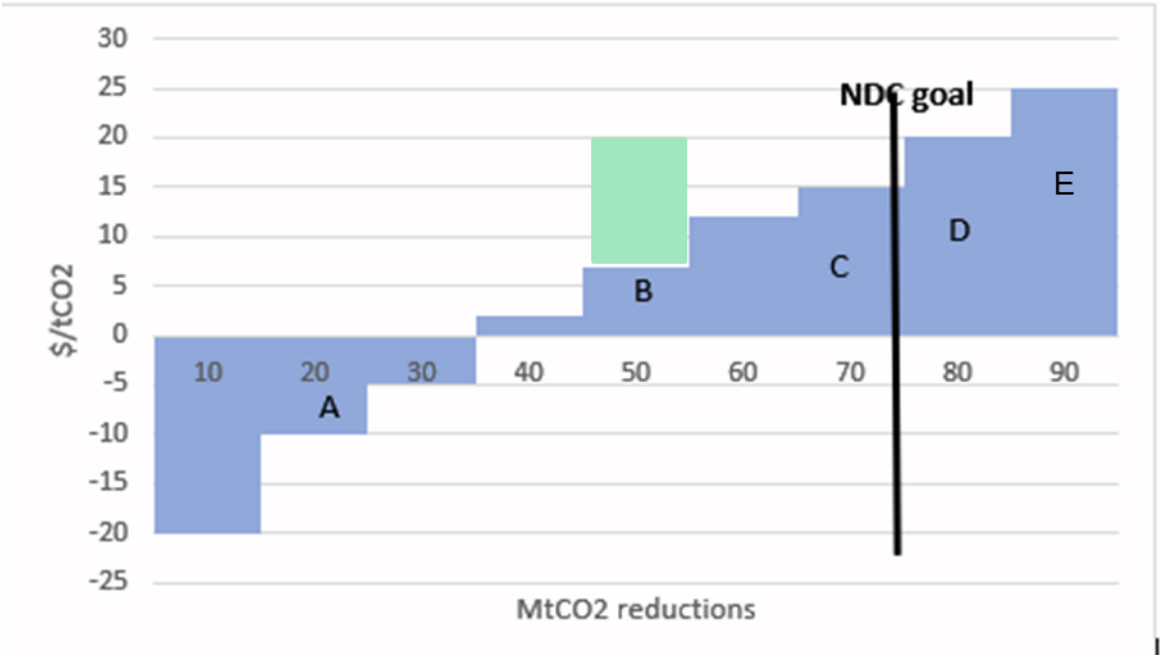
5.2 Explore two-part pricing for ITMOs to reflect opportunity cost

One possibility that can be explored for cases where the marginal cost of a specific mitigation activity is lower than the marginal cost of meeting the NDC goal, is a two-part pricing. Figure 3 illustrates a strategy for reaching an NDC goal with seven interventions that were selected not only on the basis of cost but also on other political priorities and feasibility – in other words, there could be other low-cost mitigation options not shown here because they faced barriers or did not align with policy priorities. For this particular NDC implementation plan, the abatement cost of intervention B is \$7/tCO_2, which is lower than the marginal cost of meeting the NDC, which is at \$20/tCO_2. An additional payment of \$13/tCO_2 would be needed

[8] As discussed earlier, there could be low-cost options that were not included in the NDC package because of other barriers, but this would still hold even if the country needed to find additional mitigation interventions to replace overselling.

to ensure that the transferring country could invest in higher-cost options to replace the low-cost option used for the cooperative approach.

Figure 3. Potential approach for pricing internationally transferred mitigation outcomes for activities selected for NDC goal



Source: Authors

In such a case, the ITMO price could have two components:

- Payment to project implementer: The payment would cover the project abatement cost ($7/tCO2).
- Payment to transferring country's government: The payment would cover the gap between the project abatement cost and the marginal cost of meeting the NDC goal (green area, $13/tCO$_2$). It could, in fact, be even higher to promote long-term mitigation actions and increased NDC ambition in the next cycle, as well as manage the risk that some of the NDC package interventions would not deliver their full mitigation potential.

The payment to project implementer would be based on verified emission reductions and could be made after periodic verification. The payment to the transferring country's government is made under the assumption that the transferring country would still meet their NDC, which, in most cases would require that the money is reinvested in further mitigation activities. The challenge would be to make sure that this actually is the case. A possibility could be to pay into an emission reduction fund that invests in further emission reduction activities in the transferring country. Another possibility could be to transfer the money only when the transferring country has planned and/or implemented the additional mitigation activities. Finally, it could also be decided to pay part of the money during the crediting period and transfer the rest only when the transferring country has achieved its NDC target.

A *transferring country* could identify the two prices for different authorized Article 6 cooperative activities. An *acquiring country* or entity could require two-part pricing from the transferring country.

The advantage of this strategy is that it would potentially allow mitigation activities from all NDC sectors to be used for Article 6 transfers, rather than having to formulate

negative/positive lists. It could also allow the transferring country to direct the additional revenue (i.e. beyond the marginal abatement cost of the mitigation intervention) to wherever this was needed to ensure that the NDC was still met. The disadvantage is, however, that the transferring country needs some form of an assessment of the marginal costs for meeting the NDC – as well as the economic abatement costs of the specific mitigation intervention - and this is a major undertaking, as explained in section 3.3. Another disadvantage is that this strategy might not be an option for all acquiring countries as it seems to be more feasible for multi-donor funds or large acquiring countries. The reason is that two-part pricing might need more elaborate negotiations on administrative procedures related to the timing and trigger of payments and also possibly a larger volume of transfers to make this worthwhile.

6. Capacity building and institutional development to support strategies for reducing overselling risk

6.1 Institutional and regulatory support to reduce overselling risks

For all the strategies outlined above, governments would need to identify the appropriate institutional arrangements and regulatory requirements as well as the capacity needs for those institutions. This is important for both the *transferring* and *acquiring countries*, but the following elaborations focus on the former: First, since transferring mitigation outcomes to another country will affect the transferring country's ability to achieve its NDC goals, the authorities with ultimate responsibility for the NDC need to be involved in – or at least formally approve – the Article 6 strategy development and implementation. Second, coordination across ministries is needed, especially to identify the NDC package and to determine possible activities for Article 6 cooperation. Third, many of the strategies may require strengthening the mandate of existing institutions so that they have the authority to decide on transfers of mitigation outcomes in their respective thematic fields/areas of competence. Finally, and this is equally true for acquiring countries, it is also necessary to set up or strengthen the legal framework for selecting and authorizing activities for Article 6 and for paying or receiving financial resources related to the transfer of mitigation outcomes. For example, national laws and regulations should include criteria to mitigate overselling risks – in conjunction with other criteria for the selection of projects (e.g. ambition, environmental integrity, and sustainable development) – because this would provide a sound legal basis for the relevant entity to approve projects.

6.2 Capacity building for implementing risk-reduction strategies

Many of the strategies elaborated in the previous sections require significant capacity-building for transferring countries – both technical support and financial resources. This is particularly true for strategies based on an understanding of the cost and potential for mitigation actions and for supporting this analysis through developing LT-LEDSs.

For any strategy that needs to identify the NDC package and/or the costs of meeting its NDC, a transferring country needs to quantify its NDC and analyze what measures can be implemented in the different sectors to contribute to the achievement of the NDC. As the Paris Committee on Capacity-Building (PCCB) shows, countries used very different processes to develop their NDCs (PCCB 2019). Some based their NDCs on a detailed national low-emission development strategy or similar process, but others did it without solid sector/subsector-specific data. The pilot exercise by PCCB also revealed that potential transferring countries "continue to face capacity gaps and needs regarding the generation,

collection, analysis and standardization of quality data" on mitigation (PCCB 2019). In addition, there is a lack of standardization of data collection across different sectors and a frequent absence of formal methods and applications for collecting, storing and analyzing the data. These are also the technical areas that would be important for identifying mitigation actions, including which ones should be used for Article 6 cooperation. In order to identify measures and establish a strategy for implementing NDCs, and in turn identify activities for Article 6, it is important to coordinate between ministries across all sectors. However, according to the PCCB pilot exercise, most of the countries surveyed do not have well-established inter-ministerial coordination (PCCB 2019).

A dynamic understanding of mitigation opportunities and the implications of Article 6 cooperation will require transferring countries to develop LT-LEDS (see section 2.2). So far, only 17 countries[9] have formally submitted LT-LEDS to the UNFCCC, with roughly half of them being highly industrialized ones. There are initiatives to expand this resource base, particularly the LEDS Global Partnership, funded by the USA, UK and Netherlands governments, which brings together practitioners and experts from 350 institutions in 118 countries (see further details in Fuessler, Kohli, Spalding-Fecher, et al. 2019).

Acquiring countries can provide capacity-building bilaterally or through multilateral funds. The Green Climate Fund's Readiness and Preparatory Support Programme, which was launched in June 2019, could be helpful in identifying capacity building gaps of a specific country. This support will enable developing countries to undertake assessments of capacity gaps and needs at the national level as part of the preparation of a three-year readiness program (PCCB 2019).

7. Assessment and discussion of proposed strategies

While this report outlines a number of different strategies to reduce the risks of overselling, they might have quite different impacts. Three important areas for evaluating the strategies would be the following:

- **Risk reduction**: Strategies may vary in how effectively they can manage the risks of overselling – in other words, how likely it is that the strategy could eliminate all risk of missing the NDC goal as a result of Article 6 cooperation.
- **Government burden:** The burden on government imposed by the implementation of a strategy is also an important criterion, given the administrative capacity involved in many developing countries. Policy makers may need to choose strategies such that the overall cost of implementation is manageable relative to the available resources in government.
- **Potential transfer volumes**: The impact of the strategies on the total volume of transfers for a given transferring country is also relevant, since it may affect the amount of low-carbon investment that can be catalyzed through cooperative activities. Some strategies may increase the complexity and uncertainty for project proponents, or the transaction costs of participating in the market. Even if global demand is relatively inelastic[10], this could reduce the potential for this particular transferring country to attract interest from acquiring countries. Whether lower volumes mean lower total financial flows will depend on the dynamics of global market prices. Most transferring countries are likely to be "price

[9] In reverse chronological order, Singapore, Slovakia, European Union, Costa Rica, Portugal, Japan, Fiji, Marshall Islands, Ukraine, United Kingdom, Czech Republic, France, Benin, United States, Mexico, Germany, Canada.

[10] This assumes that, over the longer term, there will be globally competitive market for MOs. This might take time to develop, but is a reasonable assumption for the timeframe of this round of NDCs (i.e. up to 2030).

takers" in the market, so that lower volumes of transfers from this country could mean lower financial flows received.

To provide a qualitative assessment of the various strategies to reduce overselling risks, each strategy was scored on a scale from large negative impact to large positive impact (Table 2), based on the advantages and disadvantages discussed in sections 3,4 and 5. While this assessment is only the first step towards evaluating these strategies, it is based on expert judgement and discussion within the team of consultants conducting this study. As an example of the assessment, the negative list strategy could have a significant positive impact on reducing overselling risk because it directly targets the NDC package and keeps this outside of Article 6 cooperation (the reason it is not "large positive" is because there are limitations as to the accuracy of the NDC package assessments and uncertainty as to whether those interventions are sufficient, in practice, to fulfill the NDC). If the government already has a detailed mitigation analysis for its NDC, then this strategy would also not present a burden for government to implement. If this is not the case, however, there would be some burden on the government. Finally, the impact on transfer volumes will be negative, but because it only excludes that NDC package (i.e. and not other low-cost interventions with technical barriers or newly identified low-cost options that were not known), this impact is modest.

Not surprisingly, there are potential tradeoffs between reducing overselling risks, government burden, and transfer volumes (Table 2). Note that the assessment of government burden depends, in part, on whether the country already has a reasonably detailed analysis of mitigation opportunities and has identified an NDC package. Any restrictions on the use of Article 6 will reduce transfer volumes, but this is more acute for conditional transfer strategy, which might eliminate cooperation entirely. The pricing interventions could also have significant impacts on transfer volumes because the levies might have to be quite high to provide enough funding to re-invest in replacing any lost mitigation opportunities. After conditional transfers, which provides the greatest risk reduction, the negative and positive list strategies and NDC-derived baselines potentially provide the greatest risk reduction. The government burden of some strategies will depend on whether the country already has a detailed mitigation analysis available.

Table 2. Qualitative assessment of strategies to reduce overselling risks

Strategy	Overselling risk reduction	Government burden	Transfer volumes
Negative list for NDC package	MP	MP / SN*	SN
Focus on "inaccessible" technologies	MP	SN	MN
Abatement cost threshold	SP	SN / MN*	MN
Baselines derived from NDC goals	MP	MN	SN
Simple division of mitigation outcomes	SP	SP	SN
Limit crediting periods	SP	SP	SN
Conservative baselines	SP	Z	SN
Conditionality of transfers	LP	MP	LN
Levy to fund domestic mitigation/future purchases	SP / ?**	MN / SN	MN
Two-part pricing to reflect opportunity cost	SP	MN	MN

Large positive	Medium positive	Small positive	Zero impact	Small negative	Medium negative	Large negative
LP	MP	SP	Z	SN	MN	LN

Notes: * The government burden depends on whether or not the country has a detailed NDC mitigation analysis, so that second rating is for a country without this analysis. ** The first rating is for using this levy for additional domestic mitigation, while the second rating is for using the levy for ITMO purchases – the impact of the latter depends strongly on the availability and pricing of ITMOs in the future, which is highly uncertain.
Source: Authors

These strategies might also be used in combination or in a phased approach over time. A country might combine simple division of mitigation outcomes and conditionality of transfers, for example, only transferring a portion of the mitigation outcomes during the NDC cycle but then transferring the remaining amount at the end if it was clear that the NDC would be achieved. The strategies might be applied to different sectors or technology areas as well. For example, a country might focus on "inaccessible" technologies using a positive list and also limit the crediting periods for those cooperative programs. Similarly, a country might create a negative list and also keep a small share of mitigation outcomes from any cooperative activities outside of that negative list for added risk reduction.

In terms of timing, some of the approaches could be implemented more quickly than others, but this may depend on the availability of data in the transferring country. If a country has identified an NDC package or interventions already, then a negative list could be implemented immediately. If that analysis also included detailed costing data, then an abatement cost threshold could also be implemented. How soon NDC-derived baselines could be implemented depends on the level of detail and disaggregation in the NDC, but this could also be established through additional capacity-building support provided by the acquiring country as part of developing a cooperative activity. This is true of other strategies as well. Setting the levels from simple division of mitigation outcomes and/or levies to support future purchases would still require significant analysis, but this might be initiated using conservative values (e.g. the transferring country keeps the majority of mitigation outcomes or setting the levy at a benchmark level that is higher than the marginal cost of the NDC).Acquiring countries may also choose to apply different strategies with different transferring country partners, given the technical capacity, level of detail behind NDC analysis, and ambition of the NDC in the transferring country.

8. Conclusion

This analysis shows that there are a wide range of potential strategies that could address a key overselling risk – the risk that a country might transfer low-cost mitigation outcomes that it intends to use to achieve its NDC. No one strategy will meet all of the priorities of transferring and acquiring countries, because this may depend on each country's NDC pledges, its available mitigation options, the type of analysis and data that is available on those mitigation options, and the capacity of government to manage the Article 6 strategy process. An important next step for this analysis, therefore, could be to develop several country case studies that would apply the strategies to the particular capacity and needs of those countries. For example, a potential transferring country with an ambitious NDC might place more weight on the assessment criteria of "overselling risk reduction" than on the impact on transfer volumes. In addition, countries without a detailed mitigation analysis would find it difficult to even consider some of the strategies, and so could potentially benefit from testing the conservative baseline strategies. These case studies could be combined with developing capacity-building plans and conducting the initial training or analysis to strengthen the

transferring countries' ability to identify and prioritize mitigation interventions for NDC implementation.

The purpose of Article 6 is to increase ambition through cooperation, not to jeopardize countries' ability to achieve their NDCs. Which strategy, or combination of strategies, is most appropriate for a given country will depend on not only its range of mitigation opportunities and NDC ambition, but also on its other policy priorities, capacity and how robust the technical analysis is behind its current NDC pledges. By working together, transferring and acquiring countries can explore how to implement the right combination and timing of strategies to ensure the Article 6 cooperation is mutually advantageous.

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10. Glossary

Term	Meaning
Acquiring country	The country that receives the transferring mitigation outcomes and uses them for purposes of NDC compliance; the “corresponding adjustment” in this country would be to adjust

Term	Meaning
	its reporting emissions by subtracting back the amount of the transfer.
Carbon credit	Credits stem from a crediting program. They are calculated as the difference of emissions between a baseline scenario (that is, that which would have occurred in the absence of the scheme itself) and the actual prevailing (or "project") scenario. Credits accrue to the entity responsible for the action.
Corresponding adjustment	The requirement under Article 6 that both countries involved in any transferred mitigation outcomes adjust their reported emissions (or other metric) for purposes of NDC compliance; the acquiring country subtracts the amount of the transfer to adjust its reported emissions, while the transferring country adds the amount of the transfer to adjust its reported emissions.
Crediting program	A system that recognizes that a certain action (project, policy, measure) has delivered emission reductions compared to a scenario without the emission reduction incentives.
International carbon markets	This includes Article 6.2 and 6.4 cooperation, as well as existing international linking of ETS, use of international offsets in carbon tax and ETS, as well as international crediting programs (e.g. CDM, VCS, CAR, Gold Standard, etc.).
Internationally transferred mitigation outcomes (ITMOs)	Mitigation outcomes that are transferred from one country to another for purposes of NDC compliance (or other international uses such as CORSIA).
Mitigation outcomes	An umbrella term for what can be transferred between countries under Article 6.2 or 6.4. This covers ITMOs and A6.4ERs (see definitions). While mitigation outcomes will often be in units of tCO_2-eq, Article 6.2 transfers may also occur using other units (e.g. MWh renewable electricity).
Offset	Use of *credits* towards meeting a particular greenhouse gas related commitment (e.g. mandatory cap, compensation scheme, carbon tax liability, purely voluntary).
Transferring country	The country that hosts the activity that generates the emissions reductions that are transferred (often called "host country" under the CDM); the "corresponding adjustment" in this country would be to adjust its reported emissions (or other NDC metric) by adding back the amount of the transfer