

# Opportunities and safeguards for ambition raising through Article 6

The perspective of countries transferring mitigation outcomes





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## Summary

Meeting Paris Agreement's long-term temperature goals requires scaled-up efforts by all countries towards decarbonising their economies. This involves a longer-term vision reflecting countries' "highest possible ambition" in current NDCs and progression "beyond" the previous effort in successive NDC cycles – or what we call 'ambition raising'. Ambition raising is embedded as an aspiration in several provisions of the Paris Agreement, including for Article 6 approaches, which are expected to "...allow for higher ambition in their mitigation and adaptation actions..." in participating countries. Designing such a role in countries who plan to transfer mitigation outcomes to other countries via Article 6 (i.e. the 'originating Parties') will be quite challenging. In this paper, we discuss the ambition raising implications to engage in voluntary cooperation under Article 6 for the originating Parties.

We define three key opportunities from Article 6 to raise ambition – first, by creating an overall global mitigation benefit through the design of instruments under Article 6.4; second, by designing cooperation for non-market approaches taking cognisance of its ambition raising role; third, and most fundamentally, by driving mitigation in inaccessible abatement options.

Whilst participation in mechanisms may potentially deliver benefits, the realisation of these opportunities is entirely dependent on the effective design and implementation of measures to safeguard against potential risks that can create conditions for ambition disincentives. We identify four broad safeguards to ensure that instruments developed under Article 6 can deliver effectively on the needs of those who transfer mitigation outcomes, whilst providing positive incentives for ambition raising.

Designing and implementing effective safeguards will be a challenging process and will require a comprehensive dialogue. When Parties continue to discuss Article 6 rules, a balanced progress that defines strong guardrails against risks to ambition raising will be desirable.

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## Abbreviations

<b>ADP</b>	Ad Hoc Working Group on the Durban Platform for Enhanced Action
<b>AILAC</b>	Independent Association of Latin America and the Caribbean
<b>AOSIS</b>	Alliance of Small Island States
<b>APA</b>	Ad Hoc Working Group on the Paris Agreement
<b>BAT</b>	Best Available Technology
<b>BAU</b>	Business as Usual
<b>CCS</b>	Carbon Capture and Storage
<b>CDM</b>	Clean Development Mechanism
<b>CDM EB</b>	Executive Board of the Clean Development Mechanism
<b>CMA</b>	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
<b>CMP</b>	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
<b>ETS</b>	Emissions Trading Scheme
<b>EU</b>	European Union
<b>GHG</b>	Green House Gas
<b>IET</b>	International Emissions Trading
<b>INDC</b>	Intended Nationally Determined Contribution
<b>ITMO</b>	Internationally Transferred Mitigation Outcome
<b>JI</b>	Joint Implementation
<b>LED</b>	Light Emitting Diode
<b>NDC</b>	Nationally Determined Contribution
<b>PV</b>	Photovoltaic
<b>SBSTA</b>	Subsidiary Body for Scientific and Technological Advice
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change

## 1 Raising ambition through the Paris Agreement

The Paris Agreement sets the collective framework for the world to limit global temperature increase to well below 2°C and pursue efforts to limit the temperature increase to 1.5°C. Towards this overall goal, countries define their own Nationally Determined Contributions (NDCs). Countries were invited to submit their “intended” NDCs before the Paris Agreement was finalized. Acknowledging that the first round of NDCs would not be enough to reach the overall goals, climate negotiators included a number of ‘ambition raising’ measures in the Paris Agreement to increase efforts towards the overall temperature goals. Articles 3 and 4.3 call for a “progression” of countries’ efforts over time. A precise definition of “progression” was not included, however, each contribution should reflect a country’s “highest possible ambition” (Article 4.3), and each successive NDC should go “beyond” the previous NDC (Article 4.3). Countries can update and improve on their NDCs at any time (Article 4.11) but are expected to communicate a new NDC at least every five years (Article 4.9) as informed by a regular global stocktake of collective progress towards the objectives of the Paris Agreement, starting in 2023 (Article 14). The “Talanoa” Dialogue kicks this process off in 2018 (decision 1/CP.21, paragraph 20).

For the purposes of this paper, “progression” and “highest possible ambition” should be understood in terms of measures included in an NDC that countries implement towards the overall objectives of “limiting global warming to well below 2°C and best efforts towards 1.5°C” (Article 2.1a); “global peaking of greenhouse gas emissions as soon as possible”; “undertake rapid reductions thereafter”; and “achieve a balance between anthropogenic emissions by sources and removals by sinks in the second half of this century” (Article 4.1). In short, raising ambition means an incremental increase of the overall absolute emissions reduction target of NDCs, at least every five years and constantly scaled-up steps towards decarbonisation for all sectors in all countries. For countries without an economy-wide NDC, ambition raising could also mean the extension of the scope of an NDC to include more sectors of the economy while not reducing the effort expected for sectors of the economy already covered by the NDC. The Paris Agreement provides developing country Parties the flexibility to move “overtime towards economy-wide emission reduction or limitation targets” (Article 4.4) and recognises the role of enhanced support in allowing “higher ambition in their actions” (Article 4.5). Keeping aside the political sensitivities around who should raise ambition and how, scientific evidence is clear that all Parties will need to enhance their efforts to limit global temperature increase beyond the Paris targets (Rogelj et al. 2016; UNEP 2017).

The Paris Agreement text also explicitly identifies Article 6 as a tool to increase ambition. Article 6.1 of the Paris Agreement recognises that Parties can engage in voluntary cooperation to facilitate “... the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions...” (UNFCCC 2015b). Although neither the term “carbon markets” nor “market mechanism” are specifically used in the text of the Paris Agreement, and despite some fundamental differences, the cooperative approaches in Article 6 can be considered as the conceptual successors to the “market” provisions of the Kyoto Protocol: International Emissions Trading (IET), Joint Implementation (JI), and the Clean Development Mechanism (CDM).

The fact that the role of voluntary international cooperation is expressly to allow for higher ambition is new. Indeed, ambition as a goal of such cooperation is a significant departure from the market instruments of the Kyoto Protocol, such as the CDM, which were identified as flexibility mechanisms to “assist” in reaching fixed targets. These mechanisms were meant to reduce the cost of meeting mitigation targets by allowing countries with targets to access mitigation opportunities in countries without targets but had no direct relation to commitment levels. In the new regime where all countries have to make contributions towards the Paris Agreement, cost-effectiveness is an important condition for all countries since it is in everyone’s own interest to exploit their most cost-effective mitigation potential to minimise their own NDC achievement costs.

This important shift in the purpose of markets presents both opportunities and challenges for countries interested to host market-based interventions to transfer resulting mitigation outcomes. As Parties prepare for NDC implementation, they will be faced with the task of defining own priorities with regards to the scope for international cooperation through Article 6. As sub-optimal as it may be, this exercise will have to take place in parallel to rule development for Article 6. This challenge is the reason why in this paper we focus exclusively on opportunities provided by Article 6 to raise ambition in ‘originating Parties’, i.e. countries that generate and issue mitigation outcomes transferred internationally (Müller 2018); and discuss safeguards needed to address risks which Article 6 might pose for ambition. While interest in markets without the actual rules can only be indicative, going by the declarations in intended NDCs, developing countries seem to hold a higher interest in hosting and selling mitigation outcomes. Based on this self-stated interest, this paper likely holds more relevance for developing country audiences.

Other relevant aspects of ambition such as the repercussions on the ambition level of acquiring/buying Parties (including their decarbonisation efforts), adaptation and finance, though critical, are outside the scope of this paper. Future research must address these central pieces of the ambition raising question.

After a short review of the status of Article 6 focusing on aspects relevant to this paper (section 2), we explore the opportunities that Article 6 presents to increase ambition (section 3). We then discuss the design of safeguards to minimise risks potentially resulting from Article 6 application (section 4), before providing recommendations for next steps to feed into the ongoing negotiations on Article 6 (section 5).

## 2 Status of development of Article 6

Following the overarching framework provided by Article 6.1, the Paris Agreement establishes three provisions for voluntary international collaboration between Parties towards implementing their NDCs:

- an overall framework for **cooperative approaches** under Article 6.2;
- a “mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development” under Article 6.4 (hereafter, the “**Article 6.4 mechanism**”); and
- a framework for **non-market approaches** under Article 6.8.

Article 6.2 in combination with Article 6.1 allows for voluntary cooperation between Parties in implementing their NDCs by providing the opportunity to internationally transfer mitigation outcomes, the so called ITMOs. Transferable mitigation outcomes which are the result of bi- or multilateral cooperation provide incentives to engage in various modes of joint market cooperation including mechanisms such as bilateral crediting mechanisms (at project, programme or policy levels), linking of Emission Trading Schemes (ETSs), or direct transfers. Other novel mechanisms may also emerge. Article 6.2 furthermore requires from Parties engaging in cooperative approaches to “promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting”.

Article 6.4 establishes a new international market mechanism under the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA). This mechanism has similarities to the CDM (such as the supervision by an UNFCCC body, intended incentives for private and public entity participation, provision of a share of proceeds to cover administrative expenses and for adaptation), but also fundamental differences as it allows any Party to be buyers and sellers. Further, Article 6.4 must deliver an ‘overall mitigation in global emissions’, in contrast with the CDM.

Article 6.8 and 6.9 define a framework for non-market approaches which aim to promote both adaptation and mitigation ambition, enhance public and private participation in the implementation of NDCs and

enable opportunities for coordination across instruments and relevant institutional arrangements. Understanding of the conceptual foundations for such approaches and what instruments qualify as ‘non-market’ varies among Parties (Oberghassel & Asche 2017).

Although the Paris Agreement makes no specific reference to the relation between the units transferred under the Article 6.4 mechanism and ITMOs in Article 6.2, for the purposes of this paper, we assume that the emission reduction credits from Article 6.4 mechanism can be used as ITMOs towards the NDC. The non-market approaches defined under Article 6.8 are understood to not involve any transfer of ITMOs. However, keeping in mind their objective to assist in NDC implementation, and considering Article 6.1 sets the framework for all approaches under Article 6, non-market approaches should also allow for higher ambition.

In addition to using ITMOs towards an NDC, an acquiring Party could cancel them to achieve an overall mitigation in global emissions. Guidance will be provided to ensure that double counting is avoided based on “corresponding adjustments” by Parties of their emissions and sinks. In order to ensure that the overall environmental integrity of Article 6 is maintained, it is important that if a ‘mitigation outcome’ is internationally transferred, the originating Party no longer counts it towards its NDC achievement. Global effort is based on the sum of NDC efforts, where every reduction is counted once but if those efforts overlap through double counting, the transfer would no longer represent effort on behalf of at least one Party.

The way it is framed, an internationally transferred ‘mitigation outcome’ implies that as an “outcome”, it must be ex-post, and verified after the fact. While this excludes the possibility of understanding it as an emission allowance, it does not necessarily preclude linking ETSs as a mode of ITMO transfer. Rather ETSs could be linked independently of ITMO transfers and ITMOs could constitute the net balance of absolute emission reductions at the end of an NDC cycle. However, ETS linking may not be the most immediate choice for many smaller developing countries given the capacity requirements and political economic challenges that setting up a system entails. Hence, our paper’s focus is largely on mitigation outcomes generated through mitigation interventions operating at project, programmatic and possibly sectoral scales.

The “cooperative approaches” of Article 6.2 and the Article 6.4 mechanism may be considered to be the conceptual successors to the “market” provisions of the Kyoto Protocol: to the Joint Implementation (JI) if emission reducing projects are covered by mitigation targets; and to the CDM, if projects are not covered by a target. However, the Kyoto mechanisms per se have no direct relation to the provisions under Article 6. While memberships to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), the body responsible for the Kyoto Protocol, and the CMA overlap, they are not identical, and thus the CDM and JI have no clear relationship or bearing to the Paris Agreement. Parties have however not yet found consensus on exactly how any of the Article 6 provisions relate to previous mechanisms and/or what similarities or differences they may have.

Parties continue to debate language on international guidance for Article 6.2; rules, modalities and procedures for the Article 6.4 mechanism; and a “work programme” for Article 6.8 in the Subsidiary Body for Science and Technology Advice (SBSTA). There was some procedural progress in SBSTA 47 in Bonn at the end of 2017, in that Parties agreed to give the SBSTA chair a mandate “to prepare an informal document containing the draft elements” for guidance for Article 6.2, rules, modalities and procedures for Article 6.4, and draft decision on the work programme for Article 6.8. However, the documents, based on submissions and the informal notes of the co-chairs, still include all the possible elements, and all the areas of disagreement. Hence, this has not yet resolved issues of disagreement or conflicting visions of Article 6.

Many Parties have demanded equal progression between Articles 6.2, 6.4, and 6.8 as a package. It is however worth noting that negotiations on Article 6 take place in the SBSTA, which is only responsible for recommendations, and not in the higher-level Ad Hoc Working Group on the Paris Agreement (APA).

It is the CMA that will actually adopt Article 6 rules for the Paris Agreement. Given the deadlock on various carbon market negotiation issues in the CMP and the SBSTA for years preceding the Paris Agreement, it is possible that the APA will progress on a rulebook for the Paris Agreement without final input on Article 6 from SBSTA.

### 3 How can Article 6 help raise ambition?

While Parties still have a lot to discuss and decide with regard to how Article 6 will work, a critical difference between the Paris Agreement and the Kyoto Protocol is that *all* Parties are now expected to contribute to the global effort, peak their own emissions as soon as possible, reduce emissions thereafter, and decarbonize their economies in this century. **The fundamentally different playing field of the Paris Agreement opens new opportunities for framing voluntary cooperation between Parties by using Article 6 towards increasing ambition.** We discuss three potential ambition raising opportunities embedded in Article 6, reviewing their potential to support originating Parties in increasing their ambition:

1. Creating an overall mitigation of global emissions
2. Ambition raising using non-market approaches
3. Enhancing ambition by driving mitigation in inaccessible abatement options

#### 3.1 Creating an overall mitigation of global emissions

Parties demonstrated their intent and ambition to address climate change by agreeing that the Article 6.4 mechanism will ‘deliver an overall mitigation in global emissions’ (Paris Agreement, Article 6.4 (d)). An international market-based instrument that contributes to ‘net mitigation’ is more ambitious by its very design than a zero-sum transfer where every reduction corresponds to an increase of emissions elsewhere. This is seen by many as ambition raising approach and indeed reflects ambitious progress in the mechanism design from Kyoto to Paris. This, however, is not directly related to the overall ambition of the originating country's NDC.

**For Article 6.4 mechanism to contribute to an overall mitigation benefit at a global scale, the aggregate global emissions with Article 6.4 transfers should be lower than they would be without them.** The final informal note issued by co-chairs at SBSTA 47 outlines several potential elements which can be potentially adopted to operationalise this “overall mitigation in global emissions” (SBSTA 2017). The upcoming negotiations will decide which of these elements are adopted and if as standalone options or in combinations. For our purposes, we summarise them into the following technical options (see full text of the potential elements in the Annex):

- a) Full accounting of the emission reductions by host Party, with a percentage cancellation or discount of emission reduction units issued, either at the point of transfer from the originating Party or use by the acquiring Party [*potential element a - d in the informal note*]
- b) Voluntary contribution to overall mitigation (e.g. through cancellation) by acquiring/originating Parties and non-Party stakeholders [*potential element g and j*]
- c) Applying conservative crediting baselines and default factors [*potential elements e and f*]
- d) Through additionality determination [*potential element h*]
- e) Mitigation benefits beyond the crediting period [*potential element i*]

Among these options, **applying discounts or cancellation of a share of generated mitigation outcomes would provide a clean, quantitative approach to earmark a portion of the reductions as contributions to the climate.** If discounts or percentage cancellations are mandatorily set, Option a) would lead to predictable and quantified contributions which increase transparency and certainty of

the climate impact of the option. Here it is important that ‘full accounting’ of these reductions ensures that the host Party does not count the cancelled reductions towards its own NDC. If they are, it would contribute to the originating Party’s NDC, but not to a net mitigation effect. This relates to the ongoing discussions on the corresponding adjustments for transferring ITMOs (i.e. by adjusting inventories or targets).

Option b) could also deliver a net mitigation of GHG emissions but unlikely because of the design or functioning of 6.4 mechanism. Rather, it would rely on the willingness of Parties and non-Party stakeholders to voluntarily do so (e.g. by cancelling units and not counting them towards their own targets). The climate impact of the option remains uncertain and would not be predictable.

Options c) d) and e), though a relevant element for any crediting mechanism, incl. an Article 6.4 mechanism, to support ensuring environmental integrity, will not automatically generate overall net global emission reduction benefits. For instance, conservative baselines and default factors will ensure that the emissions reduced by the intervention go beyond the transferred outcomes, but this reduction would benefit the host country’s own efforts towards its NDC. This is different from the Kyoto situation; where these approaches could have led to overall mitigation in countries without targets (Warnecke et al. 2014). But under the Paris Agreement, with obligations for all Parties to move towards economy wide NDCs, such approaches may facilitate NDC achievement in the host countries, but not overall emission reductions. Appropriate methods for additionality determination (Option d) will be crucial to ensure that outcomes generated under Article 6 are genuine but will not explicitly contribute to a net reduction in global emissions either. Same applies to Option e) on ‘mitigation benefits beyond the crediting period’, as these benefits should be counted as domestic efforts under the graduation approach of the Paris Agreement.

It is also worth noting that **Parties only agreed to define ‘an overall mitigation in global emissions’ aim for 6.4 mechanism and not for cooperative approaches under Article 6.2.** Some Parties, including the Alliance of Small Island States (AOSIS), have called for the two approaches to be equally robust and for 6.2 to deliver an overall reduction of greenhouse gas emissions as well.

More importantly, while the options assessed above may provide for a global mitigation impact, they have no direct consequence on increasing emissions reduction targets in NDCs - what we define as raising Parties’ mitigation ambition. This option will therefore not be in focus for the subsequent sections of this report.

### 3.2 Ambition raising using non-market approaches

International cooperation for implementing non-market approaches also has a significant potential to directly and indirectly allow for higher ambition in mitigation (and adaptation) action in many countries. Many country submissions suggest that Article 6.8 could function like cooperative approaches (6.2), but not involve an ITMO transfer (Obergassel 2017). If such voluntary non-market cooperation is designed in a manner that it builds a country’s capabilities to take-up more ambitious mitigation, it should result in higher ambition in the next NDC cycle. Non-market approaches could, for example, focus on transformational measures that are inaccessible or economically infeasible for market-based approaches. Non-market-based measures could also contribute through mechanism blending approaches to lower barriers for other approaches. If mitigation outcomes resulting from Article 6.8 approaches are not transferred, some risks to ambition that we discuss in the next section for market-based approaches are not material for non-market approaches. However, the potential for overlaps with market-based measures and duplications with other provisions of the Paris Agreement need to be carefully considered and assessed. The relevant ‘other provisions’ are:

- Article 9 on providing and mobilising climate finance for both mitigation and adaptation

- Article 11 on building capacities of developing countries to take effective climate change action and implement mitigation and adaptation actions.
- Article 12 on cooperation for measures that enhance climate change education, training, public awareness, public participation and public access to information.

Furthermore, **international non-market cooperation can indirectly allow for higher ambition in mitigation action in many countries by enabling action in areas usually not covered** and as spill-over mitigation effects of efforts beyond mitigation. Relevant examples include cooperation in efforts towards fossil fuel subsidy reforms. Reforming fossil fuel subsidies have been mentioned as an important potential non-market activity by Parties, including by the AOSIS negotiating block (Maldives 2017). This could go beyond the G7 and G20 efforts, that have long been on the agenda but do not have a clear place in the Paris Agreement despite its clear climate benefit<sup>1</sup>.

Supply chain greening and efforts to combat deforestation such as REDD+ approaches have also been named as potential areas for non-market approaches. Complicated baseline determination, impermanence, and global leakage for many products that drive deforestation such as soy, beef, wood and timber products, and palm oil make market mechanisms complicated and controversial. Sustainability rules for biofuels and induced land-use change may be considered as a non-market approach that could further ambition for mitigation (and possibly adaptation). Among the negotiating blocks, Brazil sees REDD as a “non-market mechanism” (Brazil 2013), and AILAC mentions “joint initiatives for the conservation of oceans and other ecosystems” (AILAC 2016).

However, the formulation of Article 6.8-6.9 on “integrated, holistic and balanced non-market approaches” leaves it open how these approaches will exactly work towards NDC implementation. Further, a number of issues mentioned in these Articles, including “mitigation, adaptation, finance, technology transfer and capacity-building, as appropriate”, also appear in other parts of the Paris Agreement. In undertaking a work program for a Framework for Non-Market approaches, as defined by Article 6.9, several Parties, including the EU, have emphasised the importance of “avoid(ing) duplication of work between Article 6.8 and other provisions of the Paris Agreement” (Malta 2017).

The above discussion shows that by exploring innovative ways to define non-market measures, Parties have the opportunity to increase their ambition and accelerate global decarbonisation. A more detailed assessment is however not yet possible given the lack of clarity on how exactly these approaches could be implemented and operated.

### 3.3 Enhancing ambition by driving mitigation in inaccessible abatement options

According to our definition of ambition raising, the most fundamental option to raise ambition is linked to alignment of market approaches offered by Article 6 into Parties’ NDC implementation. All Parties have to make contributions towards the Paris Agreement, including those that position themselves as countries that potentially generate, and issue mitigation outcomes transferred internationally. Each Parties’ contribution should reflect already the highest possible ambition, with dynamic progression over time. This creates a challenging starting point for countries to define their own priorities for measures that are reserved for own action to efficiently and cost-effectively achieve their own Paris compatible NDC and the scope for measures supported by international cooperation through Article 6.

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<sup>1</sup> The G20 countries pledged to ‘rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption’ at the 2009 [G20 summit](#). The G7, in [2016](#), took a stronger stance by setting 2025 as the deadline for eliminating ‘inefficient fossil fuel subsidies’, although no mention was made in the [2017 communiqué](#).

Consequently, and **to allow for higher ambition, Article 6 should provide originating Parties with the flexibility to reach and overachieve current mitigation efforts, without jeopardising current and future ambition in domestic mitigation efforts.** Such overachievement could then be presented as a success and serve as an opportunity to set a new, lower, baseline and thereby demonstrate ambition in the next round of NDC submissions after a global stocktake.

Now that all countries have their own mitigation targets to meet, **Article 6 mechanism(s) should be designed to facilitate investments to technologies where capacity limitations due to prevailing barriers of technology, know-how and finance limit independent uptake in specific country contexts or which are nascent/novel worldwide.** At a macro-level, identifying inaccessible technologies requires reflecting on the country's current technological capacities and innovation potential/plans, keeping in mind technology maturity and adoption trends at a regional and global level. To assess if a proposed intervention involves inaccessible technologies at a micro-level, one could examine: a) maturity of the abatement technology in the country, and region, if not the world; and b) costs. Our reference to 'technology maturity' includes both new technology development (e.g. Carbon Capture and Storage (CCS)) and penetration of technologies that are globally mature (e.g. on-shore wind, solar PV, LED lighting). 'Costs' have a marginal nature and correspond to both the abatement potential and associated positive benefits of an intervention. A low-cost measure with good returns or other positive impacts (abatement and co-benefits) would be a good candidate for a country looking for cost-effective ways to increase ambition. However, just because a measure is relatively expensive does not make it necessarily out of reach; a higher-upfront cost intervention could still make sense for a country to undertake on its own if it has high returns or links to other objectives such as large sustainable development co-benefits which either reduce the overall longer-term cost or make the intervention a priority.

The national portfolio of abatement technologies can then be conceptualised as two overlapping spectrums of varying technology maturity (from emerging to mature technologies) **and upfront costs** (from low to high cost). For the sake of representational simplicity, Figure 1 illustrates them as four quadrants.

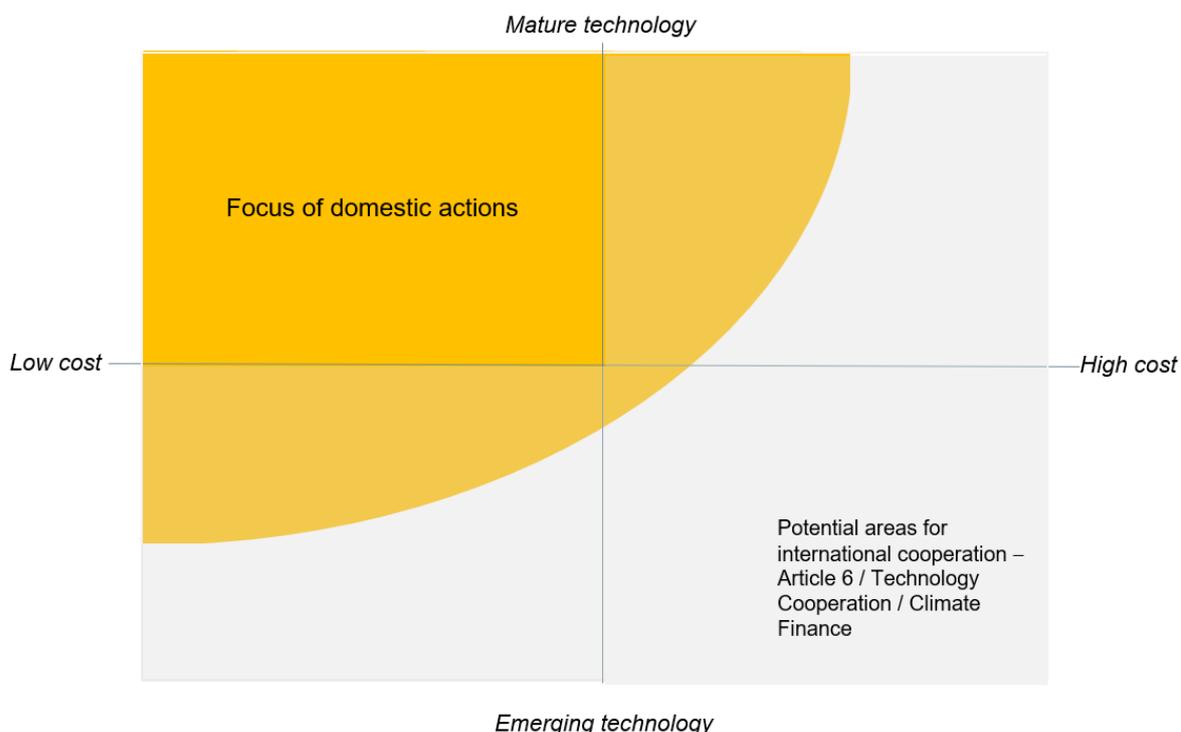


Figure 1: Two-dimensional technology mapping related to Article 6

The *low-cost, mature technologies*; and the *high-cost, emerging technologies* occupy diagonally opposite quadrants. Developing country sellers may focus on *low-cost, mature technologies* for their own mitigation actions (e.g. LED lighting could be considered relatively low cost and a globally mature technology) and reserve using international cooperation for inaccessible technologies. These 'inaccessible technologies' will clearly include technologies which are still novel worldwide (e.g. carbon capture and storage in power and industrial applications, negative emission technologies), hence have a negligible or low penetration in the country in question. In Figure 1, these occupy the extreme end of the *high-cost, emerging technologies* quadrant.

Technologies that fall in the quadrants of *high-cost, mature technologies* and *low-cost, emerging technologies*, will be trickier to put in the 'inaccessibility list' because their penetration in specific country contexts is limited by barriers beyond or in addition to technology maturity and costs. These barriers include, for example, behavioural or cultural path dependencies, political priorities, policy enforcement challenges, lower abatement potential or a longer timeframe for any sizeable abatement impact. The choice of use of carbon markets in these must be carefully assessed alongside opportunities to circumvent these barriers domestically and, in some cases, using other mechanisms of international cooperation under the Paris Agreement (e.g. climate finance and technology framework). Any transfer of mitigation outcomes from these would reduce mitigation options which may have the potential to be driven by own effort.

Once this high-level technology identification exercise is carried out, future markets will automatically find and pursue the most cost-effective outcomes available within the defined technology scope at that point in time. Although following a similar pattern, this is a change from the Kyoto mechanism dynamics where the search by market participants was mostly unrestricted and the absolute lowest cost options were identified. With scope definitions the ability of market participants to identify the least cost options for the targeted purpose is applied to the benefit for the originating Party. A practical example in this regard is the experience of allowing Joint Implementation in EU countries where most emission sources in selected sectors were covered by the EU ETS and are thus per definition out of the scope for the private sector. The private sector was still able to identify accessible technology options which were included in subsequent phases of the ETS. In order to benefit from this search mechanism and once technological options are identified and adopted, countries will have to repeat technology identification exercises on a regular basis, at least in line with the NDC update cycle, but potentially more frequently and refer to it when approving individual interventions.

To implement such a framework for future carbon markets, it is important that governments are able to judge what private sector proposals should be eligible for investment through Article 6 in order to channel investment to areas that genuinely represent areas that would otherwise be out of the country's reach. This alludes to arriving at some kind of exclusion or negative lists based on criteria to determine, for instance, which technologies are business as usual in specific country contexts, and/or those where high co-benefits make domestic action intuitive. Policy makers could use tools such as techno-economic marginal abatement cost curves, technology needs assessments, criteria-based decision-trees and positive lists to arrive at the higher-hanging technologies. Among these, criteria or positive / negative list-based approaches have particularly been explored in carbon and climate finance instruments in the past. The CDM applied positive lists in renewable energy and energy efficiency projects/programmes to determine eligibility of specific 'mitigation measures' based on specific characteristics such as size of the measure, location, market share of technology, presence/absence of regulatory support for the technology. In the climate finance world as well, public financial institutions are familiar with positive lists for determining low-carbon investment priorities.

To summarise, the conceptual framework discussed above suggests creating a negative list that defines the area marked for own action in figure 1, a clear positive list (that will lie in the extreme ends of the *high cost-emerging technology* quadrant) and a grey zone which needs careful investigation for seeking

any form of international cooperation. Such positive lists would need to be regularly updated to take technological progress into account. Further work is necessary to elaborate this framework.

The timeframe of support is a critical element in this discussion. **For carbon finance through Article 6 to enhance ambition, support for adoption of the inaccessible technologies should last for a limited timeframe only.** The initial penetration of innovative technologies often takes much longer and is a key hurdle for diffusion. Such diffusion patterns have also been visible in some mitigation technologies such as diffusion of LED lighting (McKinsey 2012, pp.19–20). By diverting Article 6 finance to support initial penetration of inaccessible technologies and until a specific level of penetration (or maturity) is reached in a country, future markets could positively shift emitting patterns and behaviour in countries, accelerate technology penetration, drive down risk premia, develop supply chains, lower abatement costs; as well as help countries leapfrog to globally best available technologies (BATs). Supporting initial penetration could e.g. mean supporting the innovators and early technology adopters, i.e. the first actors to take up a technology in a country. In technology adoption curves typical for innovative technologies, as illustrated in Figure 2 below, this roughly translates to the shaded area of the technology adoption frequency curve.

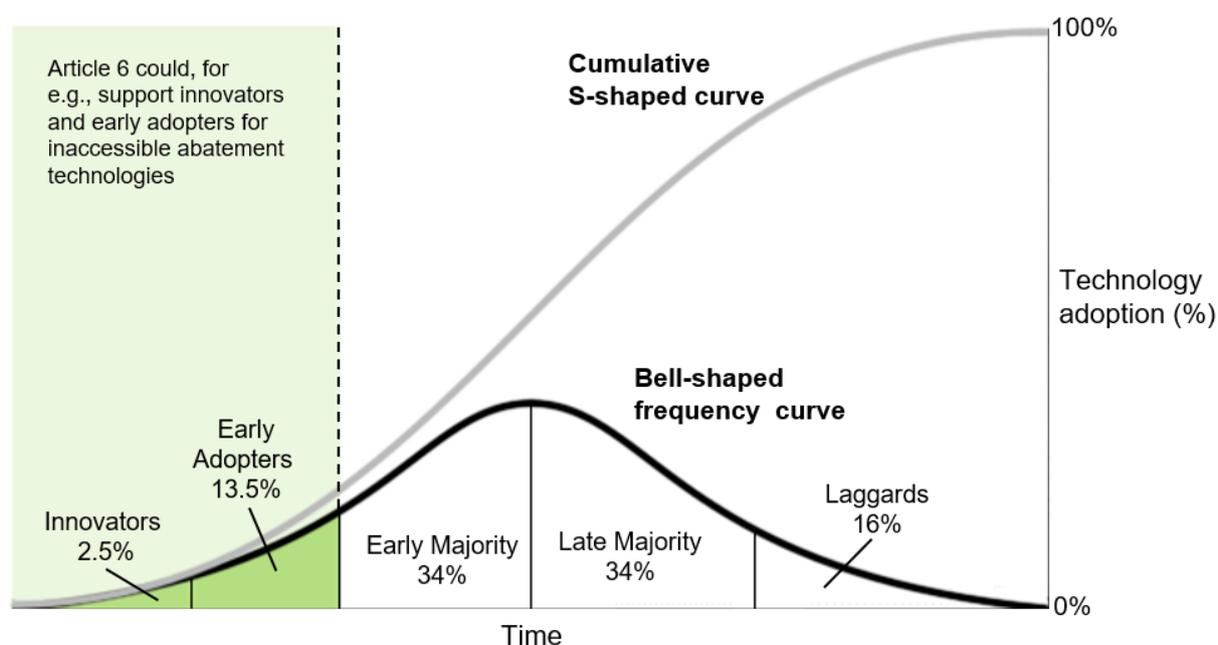


Figure 2: Potential role of Article 6 in technology adoption over time (adapted from Rogers 1971)

**After a defined period of Article 6 support, the voluntary action should make way for independent action by countries to support or regulate further technology uptake.** The timeframe of carbon market support can be aligned with NDC periods for instance, so technologies/interventions supported for an NDC period lead to some type of domestic action in the subsequent NDC.

In addition, the crediting period (or timeframe for continuing to support an approved intervention) should be shorter than the functional life of the intervention, as increased adoption overtime will remove the market barriers that once made the technology inaccessible.

We do not refer to additionality in discussing this concept, since although it made sense in the context of CDM, ‘additionality’ beyond a business as usual baseline (BAU) is alone not sufficient in the Paris regime. Due to the risks we discuss in the next section, the eligibility of actions for Article 6 must be based on their inaccessibility for domestic action, rather than additionality beyond the BAU.

## 4 The role of safeguards to avoid risks and ensure ambition

While section 3 highlighted the opportunities presented by Article 6 for raising ambition, the realisation of these opportunities is dependent on the effective design and implementation of measures to safeguard against potential risks that could create conditions for ambition disincentives if left unaddressed. In this section, we discuss these safeguards and how they can ensure that the conditions exist for Article 6 to fully realise ambition raising opportunities.

### 4.1 Understanding potential perverse incentives and undesirable impacts

Without appropriate safeguards, the ambition raising potential of Article 6 mechanisms could be threatened by various risks for disincentives or even perverse incentives (CCAP 2017). These risks could be entirely avoidable through the application of appropriate safeguards, so their consideration is of key importance:

- Without a robust means of ensuring that Article 6 mechanisms target only the inaccessible technologies, **originating Parties could face a situation where incentives to increase domestic ambition and enact the needed policies are restricted due to an effective increase in the marginal abatement costs of domestic action** for accessible technologies, caused by the opportunity costs associated with foregoing the transfer of ITMOs.

The effective cost of unilateral domestic efforts for any mitigation action with a marginal abatement cost *below* the potential price for ITMOs will be increased to reflect the opportunity cost of the foregone ITMO, where eligible (see Annex II). This opportunity cost may make it difficult for governments to justify making their own investments in policies and actions that address the “low hanging fruit”, which by extension could increase the effective cost of increasing the ambition level of future NDCs.

- Without clear guidelines for scope restrictions and participation eligibility, **the incentives for originating Parties to extend the scope of their NDCs to economy-wide targets could be restricted**, although appropriate safeguards could ensure that Article 6 mechanisms achieve the opposite.

If the eligibility of mitigation actions to be used towards ITMOs would be determined based on the scope of existing NDC measures and targets (i.e. that only additional actions beyond or outside the scope of existing NDC measures and targets are eligible for ITMOs), this could cause potential future NDC scope extensions to be associated with a new opportunity cost.

- Depending on approaches and rules for crediting baselines, **originating Parties may face a perverse incentive to inflate projected emission baselines in NDCs**, unless safeguards are put in place to either remove the perverse incentive or control for it.

Although various and more significant factors presumably contributed to the phenomenon of inflated baselines in some INDCs, the prospective ability to trade may have additionally incentivised lower ambition. While it was not entirely clear that there would be a provision for trading emission reductions internationally before the Paris Agreement was actually drawn up, 86 of the 129 INDCs submitted by 5<sup>th</sup> November 2015 mentioned an intention or possible consideration of their use, the vast majority of these are countries who have the intention to sell rather than buy reductions (Kachi et al. 2016).

Appropriate safeguards are important not only to remove and control for the potential risks identified, but also in parallel to maximise the realisation of the considerable ambition raising opportunities identified in section 3.

The following sub-sections introduce a number of potential safeguards to demonstrate how these potential pitfalls can be overcome, including safeguards based on rules for participation eligibility and ITMO-eligibility, as well as safeguards related to support provision and knowledge exchange. These rules are relevant both in the context of “Article 6.2 guidelines” and “Article 6.4 rules and modalities and procedures”. In the following, we generally refer to Article 6 mechanisms.

## 4.2 Safeguarding ambition through rules for participation eligibility

An important pre-condition to safeguarding ambition is to ensure that the conditions of all participant Parties are conducive to avoiding the potential pitfalls and being able to capitalise on the ambition raising opportunities. These pre-conditions would exist if host country’s eligibility to participate in ITMO transactions were to be made conditional on the existence of a clear long-term strategy that explicitly identifies the role of ITMOs, and if there would be no ability to differentiate between and treat differently actions that are deemed to fall inside or outside of the scope of the NDCs.

### A. Participation in Article 6 mechanisms could be restricted to Parties who have developed and communicated long-term strategies that explicitly identify the role of ITMOs in their implementation

Presently, many countries have indicated an interest to participate in Article 6 mechanisms, although few are clear about what form this participation will take and how this will contribute to their short- or long-term mitigation objectives. 86 of the 129 INDCs submitted by 5<sup>th</sup> November 2015 mentioned an intention or possible consideration of the use of international emissions trading (Kachi et al. 2016), although this was usually speculative and not an outcome of a clear strategy since the future of market mechanisms in the Paris Agreement was unclear at that point. **Without measures to ensure otherwise, there is a risk that Parties are drawn to participate in Article 6 mechanisms without a full understanding or consideration of what the implications of participation are for domestic NDC implementation and ambition raising.** For originating Parties, an unconsidered approach to Article 6 participation could lead to undermining the NDC achievement, whilst for all Parties it could lead to prioritising short-term gains at the expense of long-term decarbonisation (CCAP 2017).

Rather, the extent of participation in future carbon markets should be inherently linked to a host country’s preparations for NDC implementation and plans to raise ambition over time. [Article 4.19](#) of the Paris Agreement states that ‘all Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies...’. By March 2018, seven countries had officially submitted long term strategies to the UNFCCC, most in the form of a *mid-century strategy*. During COP 23, several Parties raised the importance of linking potential participation in Article 6 mechanisms to long-term decarbonisation strategies. A thorough consideration of how participation in Article 6 mechanisms contributes to long-term strategies can ensure that participating Parties are fully aware of the implications of Article 6 mechanisms and ITMO transactions, and that they can clearly identify how such transactions will contribute to national objectives for NDC implementation, the progression of NDC ambition across cycles, and the transition to long-term economy-wide decarbonisation.

**An important safeguard should therefore be for Parties intending to participate in Article 6 mechanisms to be explicitly required to deliberate a strategic role for these mechanisms as part of their long-term strategies.** This can ensure that the provisions and ITMO transactions are complementary rather than counterproductive to their long-term mitigation and decarbonisation plans.

Parties could take the opportunity to thoroughly consider and communicate positions on some of the following key questions through such an exercise (CCAP 2017):

- How will the NDC scope and target levels evolve over time across NDC cycles, and how ITMOs will help to improve capacity for sectoral scope extension and ambition increases, as per the opportunities discussed in section 3?

- What mitigation pathways are required or possible for the achievement of domestic NDCs, and how do these pathways allow for or benefit from the use of ITMOs?
- What criteria could be used for determining the ITMO-eligibility of mitigation actions (i.e. identifying actions that are inaccessible for domestic action), so as not to compromise short- or long-term objectives for domestic action?

Addressing these questions, amongst other issues, will allow Parties to demonstrate how ITMO use can support and supplement domestic ambition, rather than being a replacement for it in the implementation of existing NDC targets and the setting of future targets. This exercise can lead to an enhanced awareness of the opportunities and potential pitfalls of participating in Article 6 mechanisms so that Parties can approach the mechanisms in a more strategic manner and maximise the ambition raising opportunities.

**B. Participation in Article 6 mechanisms could be restricted to Parties with economy-wide targets or rules for the ITMO-eligibility of actions could be made irrespective of NDC scope definitions**

For planning a strategic long-term role for Article 6 to support ambition, the question of how mitigation outcomes transferred *today* impact the scope of *future* NDCs becomes very relevant for any country. The NDCs submitted so far by countries are very diverse in their coverage and target setting. Presently, 108 NDCs, covering close to 38% of the global GHG emissions, do not have economy-wide targets (Graichen et al. 2016). In 2030, approximately 6.1 GtCO<sub>2</sub>e or close to 12-14% of the global emissions won't be covered by NDCs (Schneider et al. 2017).

Considering this diversity, Article 6 discussions include the idea of separate rule-making for mitigation outcomes generated from inside and outside NDC scope. It is currently unclear if the guidance and rules for Article 6 will allow countries to trade mitigation outcomes from outside the scope of their NDCs, and if agreed, what 'corresponding adjustment' for such transfers would look like.

If trading from outside the scope of NDCs were to be allowed, **it could provide a disincentive for extending the scope of NDC in future revision rounds, especially if ITMOs generated from outside of the scope of the NDC entail fewer complications and costs for the originating Parties.** This would be detrimental to progress towards Article 4.4 of the Paris Agreement, which calls for all Parties to move towards economy-wide targets in future NDC revisions.

Several potential safeguards could be implemented to protect against this risk:

- a. Participation in Article 6 mechanisms could be restricted to Parties with economy-wide targets or with clear plans for their adoption:** Requiring economy-wide targets as a pre-condition to participation would eliminate the aforementioned risk by ensuring that there is no distinction between actions inside and outside of the NDC scope for participating Parties. Such a measure would have the additional benefit of actively encouraging Parties to move towards an economy-wide target earlier than they may otherwise have done. A notable barrier to such a measure would be the limited capacity faced by many potential originating Parties, specifically least developed countries, for moving their NDCs towards economy-wide targets due to information deficiencies or resource limitations. An option could be for international support activities for Article 6 mechanism readiness to support interested participant Parties with the further definition and development of their NDCs so that they can accelerate their move towards economy-wide targets.
- b. ITMO-eligibility of actions could be restricted to actions 'within the scope' of NDCs:** Least developed countries have called for the limitation of the scope of potential activities for the Article 6.4 mechanism to generate credits exclusively from within the scope of NDCs (except for LDCs) (LDC 2017b). The same demand is made (implicitly) for cooperative approaches (LDC 2017a).

Such a measure would remove any potential perverse incentives related to future scope extension, but it may also restrict participation from some countries: particularly for Parties that have specified only action based NDCs (with specific policies and measures instead of targets), the ‘scope’ of the NDC often includes only actions that the host party considers possible to achieve domestically, rather than the more “inaccessible” options which should be targeted by Article 6 mechanisms.

- c. **Rules could require that sectors and technologies that are used for ITMOs during one NDC cycle must be covered within the scope of the NDC in future cycles:** Some Parties and independent studies (see, for example, CCAP 2017), have argued that perverse incentives for restricting future NDC scope extension could be avoided or at least mitigated in the case that the generation and transfer of ITMOs from an action in a host country can only take place with the explicit agreement that such actions be covered within the scope of the next NDC cycle. For some Parties, such a provision could even lead to accelerating the extension of the NDC scope if market activities reach areas of the economy and mitigation potentials that would not otherwise have been covered by the scope of national targets as quickly. Although this may be considered a practical solution, it is unclear whether such a provision could be compatible with the nationally determined principle that underpins the NDC cycle: aside from the agreement that every NDC should represent a progression on the last, the Paris Agreement extends complete authority and flexibility to Parties to determine what can be included in their NDCs, and a requirement to include specific areas due to previous interactions with Article 6 mechanisms (potentially implemented under previous governments) may be considered to be a deviation from this principle.
- d. **Rules for eligibility of actions for generating ITMOs and the implications of their use could be structured in a way that they are in no way based on the scope definition of any individual Party’s NDC:** a simple and inclusive approach to removing the perverse incentive risk would be to ensure that ITMO issuance and accounting procedures are established in a way that they do not differentiate between actions that take place within and outside of the scope of an NDC. This would mean that any principles and rules deemed necessary to protect against double counting and ensure environmental integrity for transfers ‘within’ the NDC scope would be applied to all ITMOs regardless of whether they are considered inside or outside of the NDC scope. This may represent a pragmatic approach, on the basis that Parties are in any case expected to shift to economy-wide targets as soon as possible and it may therefore not be worth the resource investment to design dedicated provisions for actions outside of the NDC scope, since such a situation will no longer exist at this point.

Generally, the enhanced clarity and transparency associated with economy-wide targets mean that accounting processes could be more easily standardised, and transaction costs reduced, compared to the scenario in which more complicated processes are required to more clearly define the scope of NDCs and to differentiate between accounting procedures and flows for actions considered inside or outside of this scope. The process of clearly defining the boundaries of NDC scopes would be a highly resource intensive exercise, especially for many developing country Parties. Given the Paris Agreement requires all Parties to eventually move towards economy-wide targets, the inside/outside scope distinction appears to be a short-term patch-work, redirecting scarce resources from other more topical aspects of climate action. Determining a distinction between actions inside and outside of NDC scopes could be a fast-obsolete exercise with significant transaction costs at the domestic and international level: options **(a)** and **(d)** from the above list could avoid the need for such a distinction to be made.

### 4.3 Safeguarding ambition through rules for the ITMO-eligibility of actions

Once safeguards have determined that participant Parties have the necessary pre-conditions to gain from the potential ambition raising opportunities, further rules will be required to determine the ITMO-eligibility of mitigation actions.

The ability to *exclusively* target technologies and practices that would otherwise be inaccessible to the host countries (as per section 3.3) is of key importance to avoid the risks related to disincentives for ambition raising and policy implementation. This requires both a robust means of identifying those target technologies, as well as approaches to ensure that such an assessment is repeated on a regular basis and that technologies deemed inaccessible at a given point will not necessarily continue to remain so.

#### C. An objective set of criteria could be established to determine positive and negative lists for inaccessible actions

Establishing a consistent and objective approach to determine what technologies and actions represent the domestically inaccessible mitigation potential will be very challenging. However, it is essential to avoid perverse incentives for ambition and undermining domestic action mentioned earlier.

Experience from the CDM has shown that accessibility of technologies is highly variable across countries. Even for some of the more mature technology options pursued under the CDM, there remains a major difference today across regions and countries in the ability of specific mitigation activities to continue without further external financial support (Warnecke et al. 2017). As such, positive and negative lists would primarily need to be developed at the national level, although international positive and negative lists may be possible for technologies that are understood to be highly mature (e.g. LED lighting) or highly innovative (e.g. negative emission technologies) across most or all countries. This could take place through a process of national self-assessment based on internationally agreed/recognised criteria, and an international peer review process to ensure that the criteria have been observed.

#### D. International benchmarks could be used to assist with the determination of ITMO eligibility for actions in the “grey zone”

Figure 1 in section 3.3 illustrated that a great deal of mitigation potential will fall in the “grey zone” – which includes technologies that fall in the quadrants of *high-cost, mature technologies* and *low-cost, emerging technologies* – and where it is more difficult to assess the domestic inaccessibility of technologies and actions and their suitability for use in Article 6 mechanisms. Whilst the objective assessment of positive and negative lists for Article 6 technologies at the national level will be difficult, the objective assessment of the mitigation potential in the grey zone outside of these clear positive and negative lists will be far more challenging. There is a significant risk that **subjective application of criteria could lead to the ITMO-eligibility of technologies that could in theory have been covered by domestic action, which could again cause originating Parties to be faced with the challenges of perverse incentives** outlined in section 4.1.

The establishment of technical solutions such as **standardised and dynamic baseline setting and crediting against international benchmarks at the project level**, could be a model to remove subjectivity in this assessment. Here the French experience of limiting use of Joint Implementation projects under the Kyoto Protocol in 2007 could be of relevance. The French treasury perceived a risk of not achieving the country's Kyoto commitments and was thus very strict about the quality of JI projects implemented, making sure that they were beyond what the country could reasonably accomplish otherwise, using ambitious benchmarks and only allowing for the export of 9 out of 10 tonnes of reduced emissions (Shishlov et al. 2012; France 2007).

Benchmarks or intensity-based performance standards are regularly implemented in the corporate context to allow for transparent comparison, standardisation of performance and gradual improvement over time. For mitigation interventions that have a higher-level of homogeneity in an economy and data availability, benchmarks may be a useful technical metric to ensure that ITMO-eligibility of actions do not threaten domestic NDC implementation or ambition, e.g. by setting benchmark-based baselines based on international best practice and gradually raising the stringency of benchmarks.

Such a safeguard can also help to control positive and perverse incentives that markets could create to enact certain policies that either positively or negatively affect future emissions trends, often referred to as E+ and E- policies<sup>2</sup>. The need for a safeguard to address this challenge is not new with the advent of the Paris Agreement or Article 6, rather it has long been an issue of debate, including within the CDM and JI.

**E. The period for which ITMO-eligible mitigation actions remain eligible should be finite and could be aligned with the period of NDC cycles.**

**If the eligibility of mitigation actions for generating ITMOs is defined only on the condition that similar actions will not continue to remain eligible indefinitely, any disincentives towards future domestic action and ambition for those affected potential actions would be removed.** The inability to generate ITMOs for these types of actions in the future will mean that there will be no opportunity costs associated with pursuing domestic unilateral action.

Such a provision would also go some way to mitigate the uncertainty regarding the identification of ITMO-eligible mitigation potential, as discussed in the previous two potential safeguards. In the case that the objective assessment of the domestic accessibility of mitigation potential and hence the ITMO-eligibility is imperfect, the potentially negative consequences of this inevitable imperfection are limited to a specific period of time.

Such an approach has its precedents. For example, a slightly different but similar approach is applied by the Nitric Acid Climate Action Group (NACAG) when providing financial support to individual nitric acid facilities. The support is provided on the condition that, post 2020, host countries will take full responsibility of mitigation in the sector, potentially towards their NDCs. This is a potential variation of the safeguard proposed here. In either case, the host country should ensure that the market-based support for mitigation actions will lead to the similar actions being ineligible for support in the future.

In the context of the Paris Agreement ambition cycle, there are arguments that **eligibility periods and the crediting periods of individual eligible projects should be aligned with the 5-yearly period of NDC cycles, rather than fixed time windows based on the life-cycles of individual projects**, i.e. the period in which actions are considered eligible to generate ITMOs, and the period in which ITMOs can be produced, should commence and end concurrently with relevant NDCs and their cycles (CCAP 2017). This alignment will be important to assist originating Parties in strategically planning for how ITMOs will contribute to NDC implementation and ambition raising across NDC cycles (see Safeguard A, section 4.2)

**F. The volume of ITMOs available to trade for any originating Party could be limited by baselines based on emissions levels achieved in previous NDCs**

Although the Paris Agreement requires that any revision of an NDC must constitute a “progression” over time, **the ability to trade could theoretically provide a disincentive for a meaningful progression, or even a perverse incentive for unambitious targets or inflated baselines.** Setting an unambitious

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<sup>2</sup> In the CDM, policies that reduced emissions were called E- policies (e.g. energy efficiency standards, feed in tariffs, a carbon tax, etc.). Those that promote more emissions, such as fossil fuel subsidies were called E+.

target or inflating baseline emission projections to which targets are tied, not only makes it easier for a Party to achieve its NDC but could also enable it to better access marketable “mitigation outcomes”, unless safeguards control against this. This phenomenon is not new under the Paris Agreement and has been well investigated in various contexts (Carbone et al. 2008; Helm 2003; MacKenzie 2011; Rehdanz & Tol 2005; Holtmark & Sommervoll 2012; La Hoz Theuer et al. 2017; Höhne et al. 2015). The current scale of this risk in the current NDCs is significant: the NDCs of the 89 Parties that had indicated an intention or possible consideration of using carbon markets, may include up to 5.4 GtCO<sub>2</sub>e of hot air up to 2030<sup>3</sup> (La Hoz Theuer et al. 2017). A market for units that only increase future NDC ambition in the long-term can help address this risk.

Several approaches for this have been suggested in the negotiations, including various kinds of quotients or objective criteria to limit ITMOs available to trade. A widely touted approach, based on similar provisions introduced by the Doha Amendment to the Kyoto Protocol is proposed by CCAP (2017): **“the baselines for generating mitigation outcomes in subsequent NDCs should be based on emissions levels achieved in previous NDCs, including any MOs transferred.”** Such an approach was suggested by Brazil in its first submission on Article 6.2: “the amount of units eligible for trading should be limited to the difference between current emissions and the average of the last three inventories, so that a mitigation surplus may be translated into mitigation outcomes that are eligible for trading” (Brazil 2016). This would require budgeted NDCs with consistent GHG accounting and inventory systems. The use of such a limit on trading would ensure an increase in the ambition of selling countries as it would exclude the option to trade if ambitious reduction outcomes are not achieved both at an absolute level and beyond the level needed to achieve the NDC.

An alternative or complementary option could be the formation of carbon clubs, or informal agreements of potential ITMO acquiring countries to only use ITMOs that fulfil certain criteria towards demonstrating compatibility with enhancing ambition. Such criteria could incentivise ambitious NDCs and target Parties that have set out a strategic role for markets in the longer term NDC progression and decarbonisation. This incentive would be especially important if such carbon clubs were to reach a critical mass of the potential global demand for ITMOs.

#### 4.4 Safeguarding ambition through international support for capacity building and exchange

In addition to rule-based safeguards, international support for capacity building and international knowledge exchange can help to maximise readiness for participation and readiness to reach the ambition raising opportunities identified in section 3.

#### G. International support for Article 6 readiness could assist countries to build the information and evidence to support ambitious target setting

If a country has an ambitious NDC, defined as having an NDC emissions trajectory well below business as usual, it has incentives to enact ambitious policies to implement the NDC emissions that would not have otherwise occurred. In such a case, countries have a keen interest in being very careful to limit transfers because if an ITMO originates from the scope of an NDC, the country will either have to mitigate elsewhere or buy ITMOs to compensate for a transfer (Schneider et al. 2017). As such, **the act of setting an ambitious target is to an extent a safeguard in its own right against some of the risks identified** in section 4.1. The higher the domestic ambition, the more interest the host Party has

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<sup>3</sup> The potential perverse incentives highlighted are not the only contributor to the situation that this volume of “hot air” has developed in the current round of NDCs. Optimistic projections for economic growth and uncertainties in GHG emissions inventories and future pathways are key contributors to the phenomenon of inflated baselines in some countries.

in ensuring that conditions do not transpire that lead to the achievement of this ambition being undermined or made more expensive.

It was previously discussed that some independent analyses consider there to be a significant degree of hot air in the current round of NDC submissions; that is to say, **there are a number of NDCs that are currently not highly ambitious in that they do not represent a considerable progression on business as usual pathways**. Up to now, the international process has extended a degree of leniency on the review of targets, in this regard. This degree of leniency was and remains important to ensure that the Paris Agreement can be a global agreement with inclusion of all Parties, recognising the differentiated circumstances and respective capabilities of Parties to develop accurate climate planning.

However, the issues that lead to such conditions may be particularly relevant to Parties which may also be likely originating Parties for ITMOs under Article 6 mechanisms, for which their *ability* to set ambitious targets will be vital. **For many Parties, this issue is caused by ongoing deficiencies in the information available related to current greenhouse gas emissions inventories and potential future pathways**. Economic growth projections may be unclear, as well as the ways in which such pathways will affect the development of specific sectors and emission sources. This level of uncertainty can cause projections to be wrong and can also cause Parties to opt for cautious approaches so as to reduce risk exposure. This “risk exposure” could be significantly reduced through enhanced availability of reliable analysis and information on future pathways.

Through support for Article 6 readiness, or other climate finance streams, the international community has a clear incentive to support potential originating Parties to improve the availability and reliability of information on projections and potential pathways, to enhance the *enabling conditions* for ambitious targets to be set.

#### **H. International support for Article 6 readiness could assist countries in the objective identification of domestically inaccessible technologies and actions for ITMO-eligibility**

Section 3 explained how the biggest opportunity for Article 6 mechanisms to increase ambition is if they can be targeted at technologies and actions that represent the high-hanging fruit, the actions that are not accessible for unilateral domestic action. Section 4.1 built on this to show that failure to *exclusively* target these technologies and actions can lead to a host of pitfalls and perverse incentives for ambition. It is not only in the interest of the international community but also for the host country to ensure that the high hanging fruit is targeted, to avoid undermining efforts to implement the NDC or to make the achievement of the target costlier. **Selling one’s cheapest mitigation options to others leaves a country with only the more expensive abatement options for itself. Faced with higher costs for the remaining options, the domestic ambition of a country to reduce its own emissions may be undermined.**

This requires that national actors overseeing Article 6 participation in their countries are at least able to assess if abatement activities proposed by the private sector support ambition-raising objective in their country contexts. The discussion on safeguards C and D in section 4.1 highlighted how **the objective self-assessment of positive and negative lists for ITMO-eligibility will be highly challenging and resource intensive**. This general decision-making capacity is critical to participate in Article 6 and countries should be cautious in engaging until they have the capacities to effectively make these assessments. International support for Article 6 readiness, or other climate finance channels should support originating Parties in these efforts, where required.

At the multilateral level, Parties should actively explore and pursue synergies between Article 6 and other provisions of international cooperation. For instance, a cross-agenda discussion on how Article 6 and the Technology Mechanism, and the Technology Framework as per Article 10 of the Paris Agreement can support the overarching goal of the framework convention to facilitate technological capacities of countries based on specific country needs could have relevant synergies for ambition

raising. The institutions, processes and experiences under Article 10 could support the technology identification process for high-hanging fruits in the context of country-specific technology needs, regional and global patterns of uptake and innovation capacity.

## 5 Conclusions

'Raising mitigation ambition' under the Paris Agreement requires an incremental increase in the overall absolute emissions reduction targets in NDCs and constantly scaled-up steps towards decarbonisation in all sectors in all countries. In order to foster such ambition raising, the Paris Agreement expressly identifies voluntary international cooperation through Article 6 to facilitate "... the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions..." (UNFCCC 2015b). The fundamentally different playing field under the Paris Agreement, where all countries contribute and progressively increase their mitigation efforts, opens new opportunities for developing Article 6 to facilitate raising ambition. However, realisation of these opportunities requires Parties to define clear safeguards against potential risks that could provide ambition disincentives.

Parties took an ambitious step forward in Paris by moving away from pure-offsetting approaches and defining the Article 6.4 mechanism to "deliver an overall mitigation in global emissions" (Article 6.4 d). **For the Article 6.4 mechanism to contribute to an overall mitigation benefit at a global scale, the aggregate global emissions with Article 6.4 transfers should be lower than they would be without them.** To operationalise this interpretation of overall mitigation in global emissions, among the options on the table, Parties need to pursue options on the use of discounts or cancellation of a share of the generated mitigation outcomes towards a net climate benefit. Other options, though relevant to uphold environmental integrity of any crediting mechanism (be it under Article 6.2 or the Article 6.4 mechanism), will not automatically generate an overall net global emission reduction benefit. However, ambitious design of an instrument doesn't directly guarantee overall ambition and progression of an originating country's NDC.

Innovative ways to cooperate on the rather broadly defined 'non-market approaches' could also contribute to higher mitigation ambition in countries if it has the objective to develop host countries' capabilities, enables action in less-discussed areas of mitigation (such as fossil fuel subsidy reforms) and has spill-over mitigation effects. **To realise ambition benefits from Article 6.8, however, it is necessary that Parties agree on a defined common intention and scope of such approaches and avoid duplications with other provisions of the Paris Agreement,** esp. those relating to carbon markets, climate finance, capacity building and training.

We identify aligning market approaches under Article 6.2 and Article 6.4 with Parties' NDC implementation as the most fundamental way to facilitate ambition raising. **For Article 6 to play an active role in raising ambition, originating Parties need to create frameworks to channelize markets towards building their capacities for NDC progression. We propose that countries can do so by identifying technologies/abatement options that are genuinely inaccessible through own efforts and limiting Article 6 use in such options.** We further suggest the role of list-based approaches to identify such technologies – a negative list for technologies which define country's domestic action without any support; positive list outlining technologies with highest costs and lowest maturity on a global/regional level that would otherwise be inaccessible for the country; as well as potential grey zones which may need careful investigation before seeking any form of international cooperation to avoid trade-offs. Further work is necessary to elaborate this framework and to build the capacity of countries to carry out such a list-building exercise. Technology needs identification from an ambition raising perspective would then be a more exhaustive exercise than done in existing efforts, e.g. under Article 10 of the Kyoto Protocol.

**Determining what ‘genuinely inaccessible technologies’ are in specific country contexts will be a challenging but crucial task.** For Article 6 to facilitate ambition raising, it is important that originating Parties have or develop the capacity to judge what private sector proposals should be eligible for investment through Article 6.4. Such an exercise would be equally relevant for deciding which sectors/technologies/activities may benefit from bilateral intervention-based cooperation under Article 6.2<sup>4</sup>. In a nutshell, any mitigation outcomes transferred out of a country should come from options (sectors/technologies/activities) that the country cannot reasonably undertake on its own. Further, countries will need to dynamically review and restrict the time-period for which certain interventions/abatement technologies are allowed to generate ITMO transfers. The timeframe of technology eligibility could be synchronised with other provisions under the Paris Agreement, e.g. with the NDC update cycles. So, a country could allow a sector or technology which is novel and/or where current capabilities limit inclusion to participate in Article 6 mechanisms in a pre-defined number of NDC rounds, before including it within its own domestic efforts in a subsequent NDC.

While this paper presented opportunities to raise ambition through Article 6, we also discussed **the risks and identified safeguards that are needed to ensure the ambition raising potential is robust and not undermined by potential pitfalls and perverse incentives.** Such perverse incentives could materialise in the form of inflating baselines, discouraging the expansion of the NDC’s scope, and enacting specific climate and energy policies. Many of these issues are not new with the advent of the Paris Agreement and some international safeguards to address these potential risks have been discussed in different contexts, notably under the Kyoto Protocol. The ability of Article 6 to target the right mitigation options is crucial since the inability to do so could have opposite outcomes, with negative implications for countries’ ambition.

This paper has proposed potential measures for safeguarding against these risks and to ensure maximisation of the ambition raising opportunities, as summarised in Table 1. This is not an exhaustive list: all of these elements will require much further analysis, consideration and discussion, and other safeguards will inevitably be needed in addition to protect against other issues not addressed in this paper, such as environmental integrity, double counting, and net mitigation impacts, amongst others. These safeguards are relevant both in the context of “Article 6.2 guidelines” and “Article 6.4 rules and modalities and procedures” which are currently being negotiated.

**Ensuring that safeguards are watertight is not only in the interest of the international community as a whole but also the individual participating Parties.** Countries will not want to be faced with a situation of perverse incentives which could make it very difficult for national decision makers to rationalise their intended domestic efforts. Many Parties that would likely become originating Parties for ITMOs intend to pursue ambitious domestic climate action, particularly those most vulnerable to climate change impacts – the member Parties of the Climate Vulnerable Forum regularly commit to ambitious efforts as a means of driving international ambition, such as the pledge made at COP22 in December 2016 to strive for 100% renewable energy by 2030. It is not an easy task for leaders to gather political support for such ambitious domestic action, and these Parties, like others, should have a great interest in ensuring that safeguards are implemented effectively so that Article 6 can support these ambitions and not derail them.

**Designing and implementing effective safeguards will be a challenging process that will require in depth consideration, but this process should also not be a rushed one.** All of the safeguards identified and presented in this paper have shortcomings, and for several of them it is very difficult to conceptualise how they can be implemented in a robust way that avoids loopholes or the potential for subjective interpretations that can undermine them. The process to design the rulebook for Article 6 in a way that adequately addresses all of these issues will be challenging. But it is essential that the

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<sup>4</sup> Article 6.2 mitigation outcomes may not be tied to project activities e.g. be akin to allowance transfers.

robustness of these safeguards is not compromised. Pressure exists from the international community and particularly from prospective participant Parties to clarify the rules and modalities for Article 6 along with the Paris Agreement Rulebook in 2018, and such a development would be highly beneficial for countries to plan the role of Article 6 mechanisms in their long-term decarbonisation strategies, but watertight safeguards must be agreed upon before mechanisms come into place to avoid missed opportunities for the ambition raising potential, and to avoid endangering the Paris Agreement ambition cycle.

Table 1: Overview of potential safeguards for opportunities and risks associated with Article 6 mechanisms

Safeguards	Opportunities and risks safeguarded
<b>Rule based safeguards for participation-eligibility</b>	
A. Participation in Article 6 mechanisms could be restricted to Parties who have developed and communicated long term mitigation strategies that explicitly identify the role of ITMOs in their implementation.	Ensure that Parties approach Article 6 mechanisms strategically to maximise opportunities and have awareness of all relevant implications.
B. Participation in Article 6 mechanisms could be restricted to Parties with economy-wide targets or rules for the ITMO-eligibility of actions could be made irrespective of NDC scope definitions.	Avoid potential disincentives for future NDC scope extensions; and in contrast provide concrete incentives for moving to economy-wide targets.
<b>Rule based safeguards for ITMO-eligibility</b>	
C. An objective set of criteria could be established to determine positive and negative lists for inaccessible actions.	Ensure that Article 6 mechanisms target the high-hanging fruit <i>exclusively</i> , to maximise the potential ambition raising opportunities in host countries and avoid creating perverse incentives for treatment of more accessible mitigation options.
D. International benchmarks could be used to assist with the determination of ITMO eligibility for actions in the “grey zone”.	
E. The period for which ITMO-eligible mitigation actions remain eligible should be finite and could be aligned with the period of NDC cycles.	Ensure that the ability to target high-hanging fruit exclusively is maintained over time and that the role of Article 6 mechanisms in long-term national strategy for the ambition cycle can be easily planned for.
F. The volume of ITMOs available to trade for any originating Party could be limited by baselines based on emissions levels achieved in previous NDCs.	Avoid perverse ambition incentives by creating a market only for units that increase future NDC ambition in the long-term.
<b>Safeguarding ambition through international support for capacity building and exchange</b>	
G. International support for Article 6 readiness could assist countries to build the information and evidence to support ambition target setting.	Improve the enabling conditions for originating Parties to set ambitious NDC targets.
H. International support for Article 6 readiness could assist countries in the objective identification of domestically inaccessible technologies and actions for ITMO-eligibility.	Improve the enabling conditions for originating Parties to effectively identify the national circumstances for the high hanging fruit and ITMO-eligible actions that will support national ambition raising objectives.

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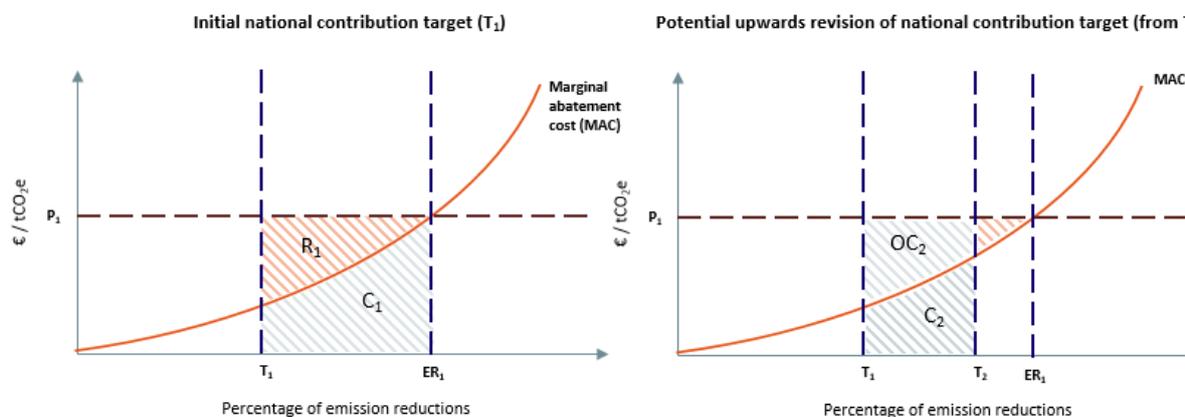
## Annex I

The list of potential elements for implementing overall mitigation in global emissions, outlined in the third iteration of the informal note by co-chairs on Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4 of the Paris Agreement (SBSTA agenda item 11 (b)). (SBSTA 2017).

- Potential element a: Full accounting of the emission reductions by host Party, with a percentage cancellation of units at issuance/transfer
- Potential element b: Full accounting of the emission reductions by host Party, with a percentage cancellation at point of use
- Potential element c: Full accounting of the emission reductions by host Party, with a percentage discount at point of transfer (e.g. tonnes)
- Potential element d: Full accounting of the emission reductions by host Party, with a percentage discount at point of use
- Potential element e: Conservative/higher default factors
- Potential element f: Through additionality determination
- Potential element g: Voluntary/aspirational
- Potential element h: Conservative baselines
- Potential element i: Mitigation benefits beyond crediting period
- Potential element j: Voluntary cancellation by Parties and non-Party stakeholders

## Annex II

### Box: Reconciling carbon market mechanisms with the concept of gradual commitment increases



The diagrams above indicate the potential barrier to increasing ambition once an initial commitment level is fixed, when international market offsetting is an available option. The left hand diagram portrays the scenario where a country commits to reduce emissions up to the target T<sub>1</sub>. Since, at the level T<sub>1</sub> the marginal cost of mitigation action (MAC) is still lower than the international price of international carbon allowances (P<sub>1</sub>), the rational course of action would be for the country to increase its emission reductions to the point at which the marginal cost of mitigation is equal to the price of carbon allowances (ER<sub>1</sub>), and to sell allowances for the emission reductions achieved between target T<sub>1</sub> and ER<sub>1</sub>. To reach this point, the country will incur costs equal to the area C<sub>1</sub>, but will receive revenue equal to the area of the whole shaded area, and the area R<sub>1</sub> represents a positive return. The right hand diagram portrays the scenario where the country considers to upscale its national contribution target from T<sub>1</sub> to T<sub>2</sub>. In the absence of market mechanisms the cost of increasing ambition in this way would be equal to the area C<sub>2</sub>. However, in the case that an offsetting mechanism exists, the upscaling of ambition would *also* entail the opportunity cost equal to the area OC<sub>2</sub>, which would otherwise have been profit from the international sale of allowances. The total cost of increasing ambition of the fixed target therefore significantly exceeds the actual cost of implementing the mitigation action, since the marginal cost of all action up to this level essentially becomes the international price of carbon, even for mitigation actions where the actual mitigation costs are below this price. Importantly, it should be clear from the right hand diagram that an increase in the international price of carbon (which is a logical outcome of increased collective domestic ambition raising) would further increase the opportunity cost incurred by a shift from target T<sub>1</sub> to target T<sub>2</sub>.

The implication of this is that a country will face economic disincentives to raise its ambition level. A further implication is that countries may actually *reduce* the ambition of their initial contribution in anticipation of this scenario.

Source: Based on Höhne et al. (2015)





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