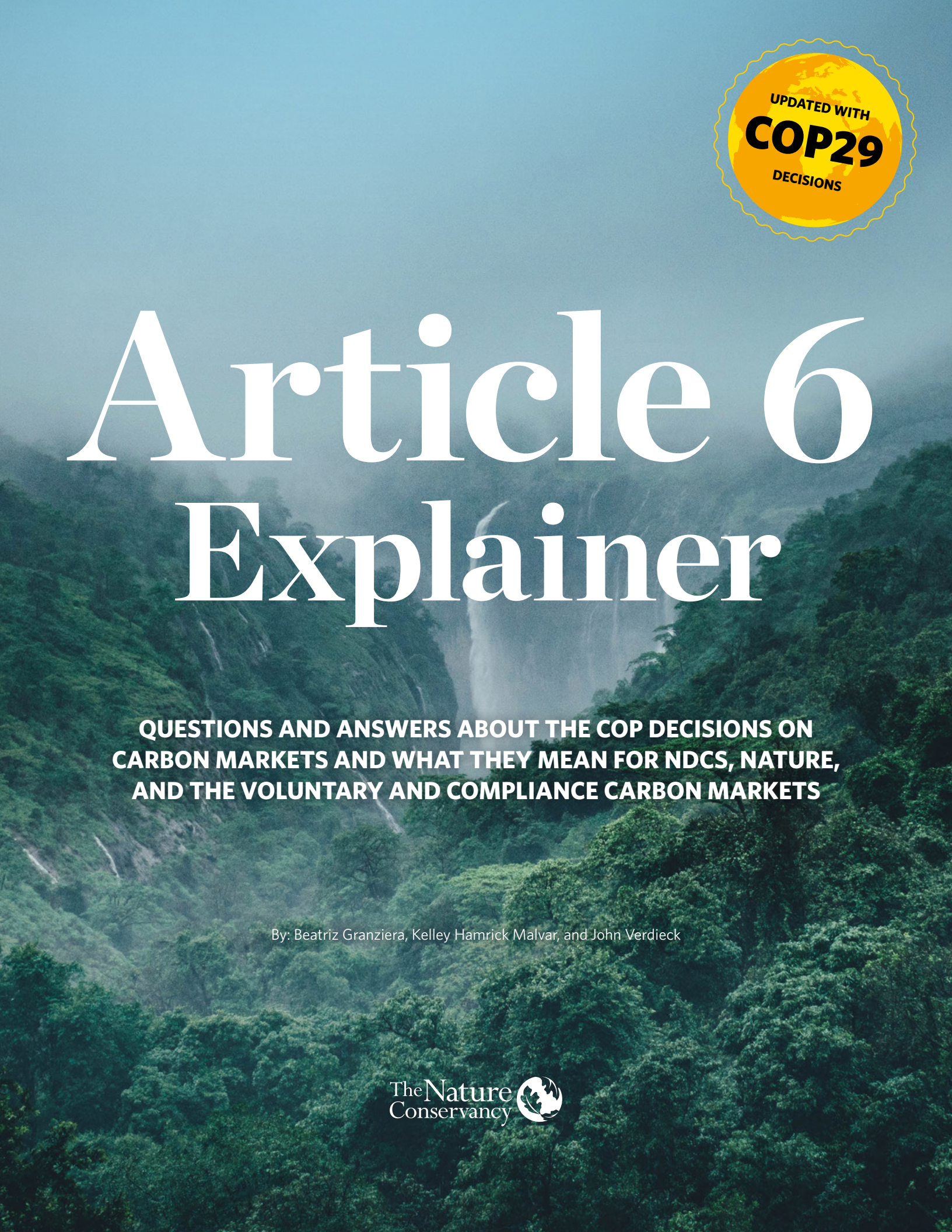

Article 6 Explainer

QUESTIONS AND ANSWERS ABOUT THE COP DECISIONS ON CARBON MARKETS AND WHAT THEY MEAN FOR NDCS, NATURE, AND THE VOLUNTARY AND COMPLIANCE CARBON MARKETS

By: Beatriz Granziera, Kelley Hamrick Malvar, and John Verdieck

The Nature Conservancy

Feedback

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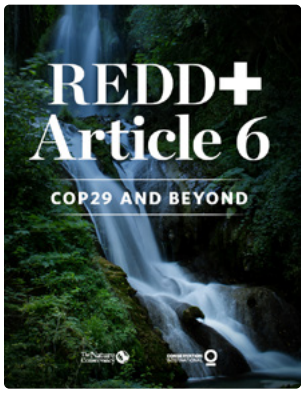
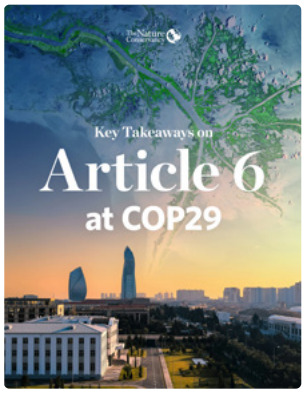
Companion Reports

Article 6 Implementation: This paper explores the tools and trends in Article 6 implementation. We use the examples of 8 seller countries - The Bahamas, Ghana, Indonesia, Kenya, Paraguay, Rwanda, Tanzania, and Zambia - as well as insights from buyer countries including Switzerland, Singapore, Sweden and Norway.



Article 6 and REDD+: The relationship between Article 6 and REDD+ has been a controversial topic and ground for heated discussions. We break down the relationship between REDD+ and Article 6, what was decided in the Article 6 negotiations.



COP29 Article 6 Key outcomes: The conclusion of the Article 6 negotiations after nearly a decade sends a clear and decisive message: The rules—imperfect as some may be—are now established, providing much-needed certainty for countries, investors, and stakeholders to advance their cooperative approaches. This paper breaks down the decisions on Article 6 taken at COP29.

Acronyms

A6.4ERs	Article 6.4 Emission Reductions
ART	Architecture for REDD+ Transactions
CARP	Centralized Accounting and Reporting Platform
CDM	Clean Development Mechanism
CER	Certified Emissions Reductions (Kyoto Protocol)
CMA	Conference of the Parties serving as the Meeting Parties of the Paris Agreement
CMP	Conference of the Parties serving as the Meeting Parties of the Kyoto Protocol
CO_2eq	Carbon dioxide equivalent
COP	Conference of the Parties
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
DNA	Designated National Authority
ETS	Emissions trading systems
FREL	Forest Reference Emission Level
GCF	Green Climate Fund
GHG	Greenhouse gas
HFLD	High Forest Low Deforestation
IC-VCM	Integrity Council for the Voluntary Carbon Market
IPCC	Intergovernmental Panel on Climate Change
ITMOs	Internationally Transferred Mitigation Outcomes
JCM	Joint Credit Mechanism
LDC	Least Developed Countries
LEAF	Lowering Emissions by Accelerating Forest Finance
MCUs	Mitigation Contribution A6.4ERs
MEP	Article 6.4 Methodological Expert Panel
NCS	Natural Climate Solutions
NDC	Nationally Determined Contribution
ODA	Official Development Assistance
OMGE	Overall Mitigation in Global Emissions
OIMP	Other international mitigation purposes
PACM	Paris Agreement Crediting Mechanism
PAICC	Paris Agreement Implementation and Compliance Committee
REDD+	Reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks
SIDS	Small Islands Developing States
SOP	Share of Proceeds
TER	Technical Expert Review
TREES	The REDD+ Environmental Excellence Standard
UAE	United Arab Emirates
UNFCCC	United Nations Framework Convention on Climate Change
VCM	Voluntary Carbon Market
VCMI	Voluntary Carbon Markets Integrity Initiative

Executive summary

The Paris Agreement paved the way for a new era of carbon trading. With the establishment of Article 6, countries can collaborate in achieving their Nationally Determined Contributions (NDCs) by trading carbon units. At its best, Article 6 offers countries a way to invest in actions outside their borders and raise global ambition to limit temperature rise to 1.5C. However, this is only possible with clear and transparent accounting around what is traded and how countries plan to meet their NDCs.

Countries first established the framework for international carbon trading through Article 6 in late 2021. One year later, at the 27th Conference of the Parties (COP27) in Sharm el-Sheikh, further rules were adopted on reporting, registries and governance. Despite the lack of progress at COP28 in Dubai, momentum around Article 6.2 continued to grow, with numerous bilateral agreements signed and an increasing number of countries participating as both buyers and sellers. All of that built political pressure that helped set the stage for a breakthrough at COP29 in Baku (See Figure 1).

COP29 marked a historic milestone for Article 6 as countries finalized (most of) the remaining building blocks of carbon markets under the Paris Agreement. The conclusion of the Article 6 negotiations after nearly a decade sends a clear and decisive message: the rules—imperfect as some may be—are firmly established, providing much-needed certainty for countries, investors, and stakeholders to advance their cooperative approaches.

But the real work begins now: Only one country-to-country transfer has been concluded under Article 6.2 between Switzerland and Thailand, mostly due to limited domestic regulation and uncertainty around NDC progress. However, many countries are full speed ahead in developing domestic frameworks to participate in Article 6.[1] Meanwhile, the Article 6.4 Supervisory Body, a separate technical body that oversees the operationalization of the Paris Agreement Crediting Mechanism - PACM (Article 6.4), will continue to meet regularly and are expected to soon approve the first methodologies accepted under Article 6.4. They will also address critical technical rules that will define what types of projects will be eligible and shape the scope and feasibility of carbon market investments in various sectors.

What's next for Article 6? Why have trades not yet taken off? Is nature included in Article 6? What about REDD+? How does Article 6 impact the Voluntary Carbon Markets (VCM)? What about domestic compliance markets? This paper offers straightforward guidance on what was decided at the United Nations Framework Convention on Climate Change (UNFCCC) COPs and dives into the complex implications of Article 6 for NDCs, nature and the VCM.

Image: Tobias Tullius, unsplash.com

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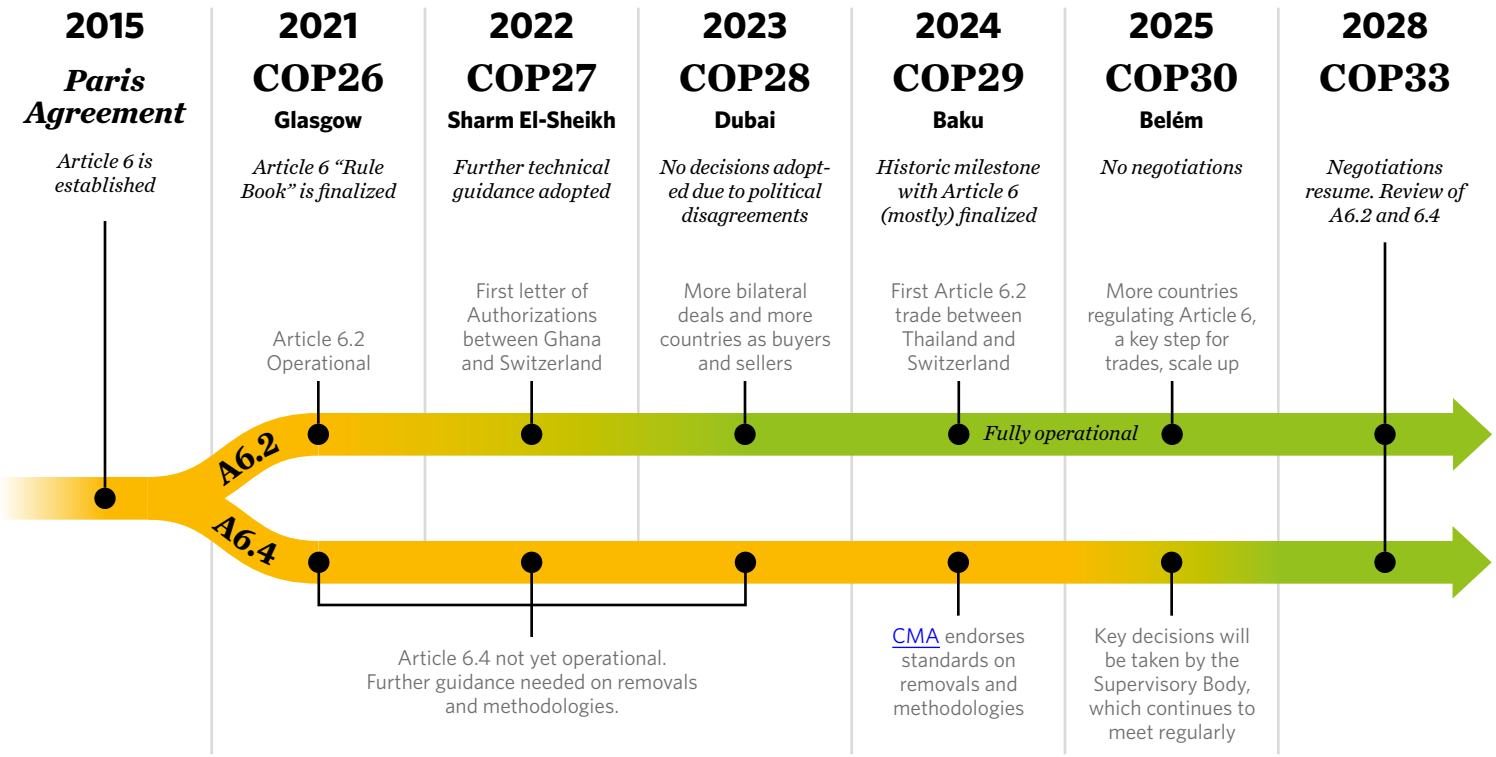
What happened at COP29 and what's next for COP30?

Figure 1: Article 6.2 and 6.4 timeline



What were the main outcomes at COP29?

Article 6.2

Authorization: One of the main outcomes of COP29 was a mandate for countries to follow a standardized authorization process for Article 6.2, a crucial step for transparency. It also brought more clarity to the fact that **countries can only change or revoke authorizations before Internationally Transferred Mitigation Outcomes (ITMOs) have been first transferred** - unless stipulated in the bilateral agreements or letters of authorization.[2] This decision strikes a balance, addressing concerns from buyer countries and investors who feared that changes and revocations could undermine market confidence and predictability. On the other hand, it gives flexibility to seller countries that want to mitigate the risk that exporting ITMOs could undermine their national climate commitments. (See: Risks for seller countries) The UNFCCC and the World Bank have developed authorization templates, but these are not mandatory.[3] All authorizations will be made publicly available on the UNFCCC's Centralized Accounting and Reporting Platform (CARP). (See: What is an "authorization" under Article 6?)

Registries: To participate in Article 6.2, countries need access to a registry—whether through a national registry, a private third-party registry, or an alternative **UN-managed "Article 6.2 International Registry"** designed for countries with limited capacity or resources to develop their own registries.[4] At COP29, countries decided to create a dual-tier system for the Article 6.2 International Registry: the registry's primary function is to track ITMOs, but it

can now include an optional service, managed by the UN, for issuing and trading credits. This solution is intended to address the needs of countries requiring additional registry functionalities from the UN, while avoiding any implied UN endorsement of Article 6.2 trades.[5] At the same time, it leaves some ambiguity about what this extra functionality will look like. In parallel, Article 6.4 uses a different registry called the **Mechanism Registry (Article 6.4)**, which is not yet fully operational as it currently relies upon an interim registry approved in February of 2025. (See: Is Article 6.4 operational?) At COP29, countries decided that the Mechanism Registry could connect with the Article 6.2 international registry and that countries and entities (companies, project developers, investors, etc.) can open holding accounts to receive and manage Mitigation Contribution A6.4ERs.[6] (See: Terminology Box 2)

Reporting: Countries adopted the draft of a reporting table to submit information about trades and fulfill their reporting requirements, called the **Agreed Electronic Format**. Standardized reporting is crucial to bring transparency to trades, but the decision fell short of making this table mandatory.[7] Still, it brings a solid common ground for trades to be reported.

Inconsistencies: At COP29, there was a lot of debate on what should happen if a trade was identified with inconsistencies. Specifically, should these trades be restricted so that ITMOs flagged with inconsistencies could not be used for NDCs, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), or the Voluntary Carbon Market? Ultimately, the COP29 decision stopped short of making this a binding requirement and the final text instead only "requests" countries to refrain from using such flagged ITMOs, leaving it as a recommendation rather than an obligation. (See: What if a country fails to apply a corresponding adjustment or report inconsistencies?)

Paris Agreement Crediting Mechanism – PACM (Article 6.4)

Standards on methodologies and activities involving removals: Day 1 of COP29 concluded with the endorsement of new standards for removals and methodologies, resolving a key bottleneck for the Paris Agreement Crediting Mechanism – PACM (Article 6.4) - to become operational. Previously, at COP27 and COP28, these documents failed to be approved by the CMA (See: Terminology Box 1). However, in October 2024, the Supervisory Body reclassified these documents from "recommendations" to "standards" – a strategic move that eliminated the need for further approval at COP29. Now, the Supervisory Body has some of the main guidelines it needs to start considering and eventually approving methodologies that will be eligible under Article 6.4. The first methodologies to be considered are adaptations from the Clean Development Mechanism (CDM), but new methodologies will also be assessed in the future. Only after methodologies are approved can projects be registered under Article 6.4. While the Supervisory Body will make the final decision on what methodologies will be approved, it will be assisted by the Methodological Expert Panel (MEP), a separate structure that was created to support the Supervisory Body in the development of methodologies and will provide key technical guidance on the rules that will govern the Paris Agreement Crediting Mechanism – PACM (Article 6.4).

More flexibility to attract climate finance through Mitigation Contribution A6.4 ERs (MCUs): MCUs are Article 6.4 units with no corresponding adjustments (See: Terminology Box 2). The COP29 decision clarified that countries can issue MCUs first, and then later convert

them into ITMOs, by authorizing them and applying a corresponding adjustment - as long as the MCU does not leave the official Article 6.4 registry (the Mechanism Registry).[8] This decision lets countries raise climate finance without locking themselves too early into deals that might undermine their climate targets in the future (See: Article 6 supply). The Article 6.4 Supervisory Body will decide if there should be a time limit for making this conversion and report its decision to countries at COP30.[9] It is important to note that aside from the accounting requirements, ITMOs and MCUs are identical units.

CDM Transition of afforestation and reforestation projects: Under Article 6.4, most CDM projects could request transition until December 2023. However, the Supervisory Body had postponed decisions on afforestation and reforestation projects, leaving their transition in need of explicit approval by the Conference of the Parties serving as the Meeting Parties of the Paris Agreement (CMA).[10] At COP29, CDM afforestation and reforestation projects were allowed to transition - if they submit a request by the end of 2025[11] and comply with the new standards on removals and methodologies, ensuring alignment with updated rules.[12] As with all CDM projects, the seller country must approve the transition. In practice, afforestation and reforestation projects represent only around 1% of the projects that requested transitions to Article 6.4. [13] (See: CDM Transition)

What is next for Article 6?

The Article 6 process does not end here. While there will be no **formal** Article 6 negotiations until 2028, significant work lies ahead to fully operationalize the Paris Agreement Crediting Mechanism - PACM (Article 6.4) and scale up high-quality cooperative approaches under Article 6.2. Most importantly, the Article 6.4 **Supervisory Body will now start to consider and approve the first methodologies** accepted under Article 6.4, following the adoption of key standards on methodologies, removals, additionality, baselines and leakage. It will also address critical technical rules that will shape the scope and feasibility of market investments in various sectors. Meanwhile, work is also progressing at the UNFCCC to build the **Article 6 infrastructure**, including the 6.4 Mechanism Registry, the 6.2 International Registry and the related platforms.

At COP30 in Belém, there will be no formal Article 6 negotiations, but countries are expected to react to the **Article 6.4 Supervisory Body annual report** and may offer new guidance and considerations that could shape its future work.[14] Countries are also expected to weigh in on the Article 6.2 **Initial Reports**, which detail information about trades and authorizations and it is a pre-condition for participating in cooperative approaches. These reports are undergoing expert reviews and identified inconsistencies could become a significant topic of debate at COP30.[15] (See: What if a country fails to apply a corresponding adjustment or report inconsistencies). Additionally, the deadline for transitioning CDM projects to continue to use CDM methodologies goes until December of 2025.[16] Without approved new Article 6.4 methodologies, transitioning projects risk being stranded – an issue that is also expected to surface at COP30. (See: CDM Transition)[17]

What will be negotiated in 2028?

2028 is a pivotal year for the future of Article 6 as countries will undertake a **full review of both Article 6.2 and 6.4** to be completed by 2030.[18] How much of the framework will change remains to be seen, but the review opens the door for rediscussing critical rules shaping international carbon

markets. Additionally, not all issues related to Article 6 were resolved at COP29. Some key negotiation mandates have been postponed to 2028, leaving gaps to be further addressed. One such topic is how to apply corresponding adjustments for single-year versus multi-year NDC targets to avoid double-counting.[19] This is a critical issue to reduce the risk of overselling by countries and to prevent "surprises" in 2030, where countries might fall short of meeting their NDCs because they "oversold" ITMOs. (See: Article 6 supply) Similarly, discussions on emissions avoidance were also deferred to 2028. (See: What is "emission avoidance" and how is it related to nature?)

Terminology Box 1

What are the CMA, CMP and COP and how do they relate to Article 6?

In the context of the UNFCCC negotiations, these acronyms refer to different governing bodies that oversee the implementation of specific agreements. These three bodies convene every year during the UN COPs. While most of the participating countries are the same, they cover different issues and hold discussions in parallel in different negotiation rooms.

CMA: Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement. It was established in 2016 to oversee the implementation of the Paris Agreement. The CMA meets every year at COPs and is the body in charge of making final legal decisions around **Article 6**. The Article 6.4 **Supervisory Body** operates under the CMA, so many of its decisions are subject to CMA control, endorsement or approval. Beyond Article 6, the CMA also covers the outcomes of the Global Stocktake, Global Goal on Adaptation, New Collective Quantified Goal on Climate Finance (NCQG), and others.

CMP: Conference of the Parties serving as the Meeting Parties of the Kyoto Protocol. Established in 2005 to oversee the implementation of the Kyoto Protocol. In past COPs, it has covered guidance related to the Clean Development Mechanism (CDM).

COP: Conference of the Parties. This body comprises all countries that are part of the UNFCCC. It was established when the UNFCCC was adopted during the Earth Summit in Rio in 1992. The Convention entered in force in 1994 and the first COP meeting (COP1) took place in Berlin in 1995. It covers the dates and venues of future sessions, administrative financial, institutional matters and others.

What is Article 6?

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Direct trading of ITMOs between countries and/or entities, generally through bilateral or multilateral agreements, with a high degree of flexibility to define the cooperative approach.

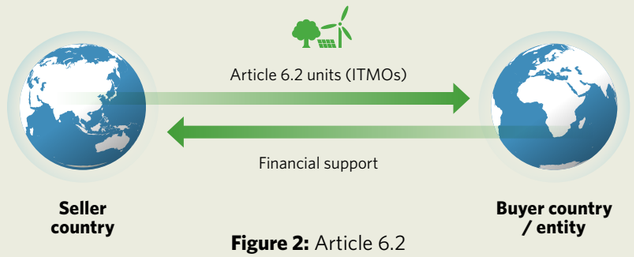


Figure 2: Article 6.2

Article 6.2

(market)

Countries can trade Article 6 units through **bilateral or multilateral agreements -** or even through **unilateral authorizations**. Article 6.2 enables a **seller country** that is on track to exceed its NDC target, to trade units to attract investments and access to technologies that might not be available domestically. The **buyer** purchases these units, known as Internationally Transferred Mitigation Outcomes (**ITMOs**), (See: Figure 7) to help meet its NDC in a cost-effective way.

Despite growing momentum and numerous bilateral agreements being signed, only one country-to-country trade has been concluded to date, between Switzerland and Thailand. This slow uptake is mostly due to the lack of domestic frameworks to implement Article 6, and uncertainty around NDC progress. There have been several Article 6.2 transactions between the Government of Guyana and airlines for CORSIA compliance, including one cancellation in February 2025.[20] (See: When will trading scale up?)

Article 6.2 gives the buyer and the seller a lot of flexibility in how to cooperate. There are no restrictions on the sectors or methodologies that can be used, as long as Article 6.2 requirements are followed. Because of such flexibility, cooperation between countries has taken different approaches and already includes links with the private sector and some regulated carbon markets. Each country is responsible for designing its own systems to implement trades and for setting the rules that define how cooperation will work in practice. (See: When will trading scale up?)

UNFCCC-centralized market mechanism, where units are generated under standardized and pre-approved rules and methodologies.

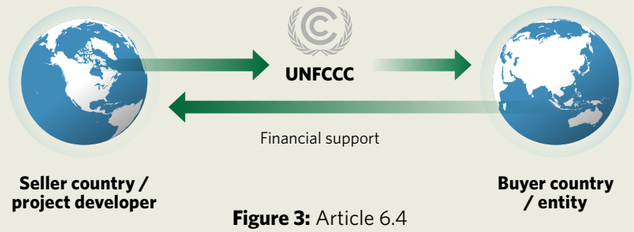


Figure 3: Article 6.4

Article 6.4

Paris Agreement Crediting Mechanism (PACM)
(market)

Countries can also trade units through a **centralized mechanism** overseen by the United Nations (UN), with standardized methodologies. Article 6.4 is now called the **Paris Agreement Crediting Mechanism** (PACM) and builds on lessons from the Clean Development Mechanism under the Kyoto Protocol. The Article 6.4 **Supervisory Body** is the appointed entity responsible for overseeing the mechanism, approving methodologies, registering projects, and managing the registry.

Units issued under Article 6.4, called A6.4 ERs,[21] can follow two paths: if they are authorized for NDC use, CORSIA or other purposes (such as voluntary claims), they receive a corresponding adjustment and become **ITMOS**.[22] When they are not authorized (without a corresponding adjustment), they become Mitigation Contribution A6.4 ERs **(MCUs)** [23] and can be used to mobilize climate finance. (See Figure 7) Aside from the accounting requirements, ITMOs and MCUs are identical units.

While there will be no formal Article 6 negotiations until 2028, significant work lies ahead to fully operationalize the Paris Agreement Crediting Mechanism – PACM (Article 6.4). The Supervisory Body is now moving to a crucial phase of approving the first methodologies accepted under Article 6.4, following the adoption of key standards on removals, methodologies, and others. It will also address critical technical rules that will shape the scope and feasibility of investments in various sectors. (See: Is A6.4 operational?)

UNFCCC web platform could be voluntarily used to facilitate matching projects with financial and technical support available in several focus areas

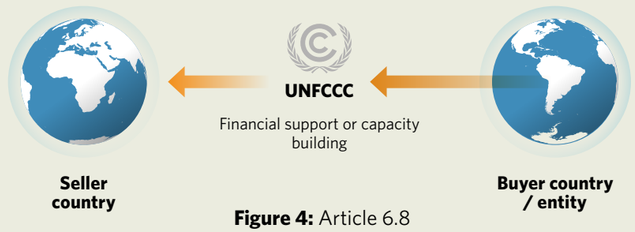


Figure 4: Article 6.8

Article 6.8

(non-market)[24]

Countries and entities may decide to support other countries, financially or technically, **without any expectation of trading carbon credits** (non-market approach). Article 6.8 established a framework for the creation of a UNFCCC centralized website where countries and other stakeholders could submit projects that are being planned and outline where support is needed. This online platform could be voluntarily used to facilitate matching projects with financial and technical support available in several focus areas. Article 6.8 is less defined than Articles 6.2 and 6.4 and there is not much clarity on how the mechanism will influence existing non-market approaches, such as philanthropic initiatives. Article 6.8 is in phase 2 of its work programme and there will be a review in 2026.

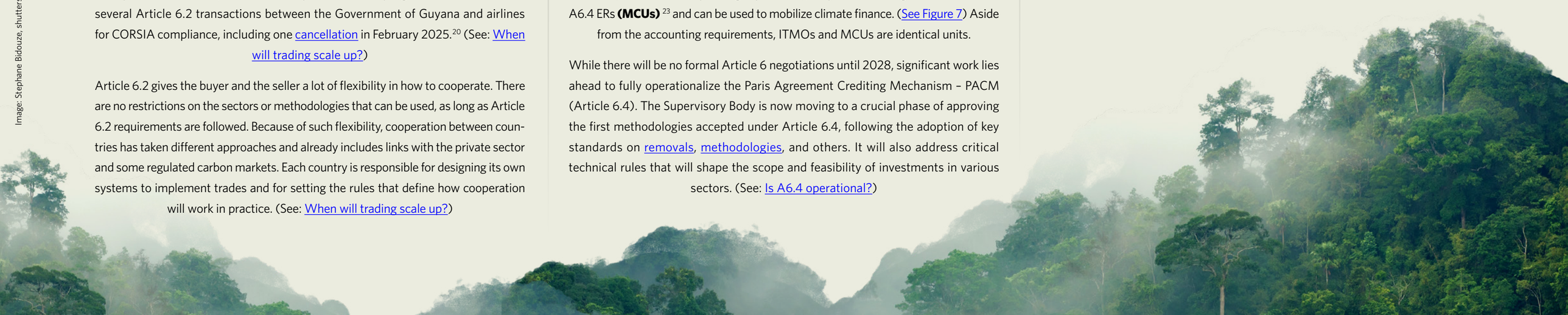
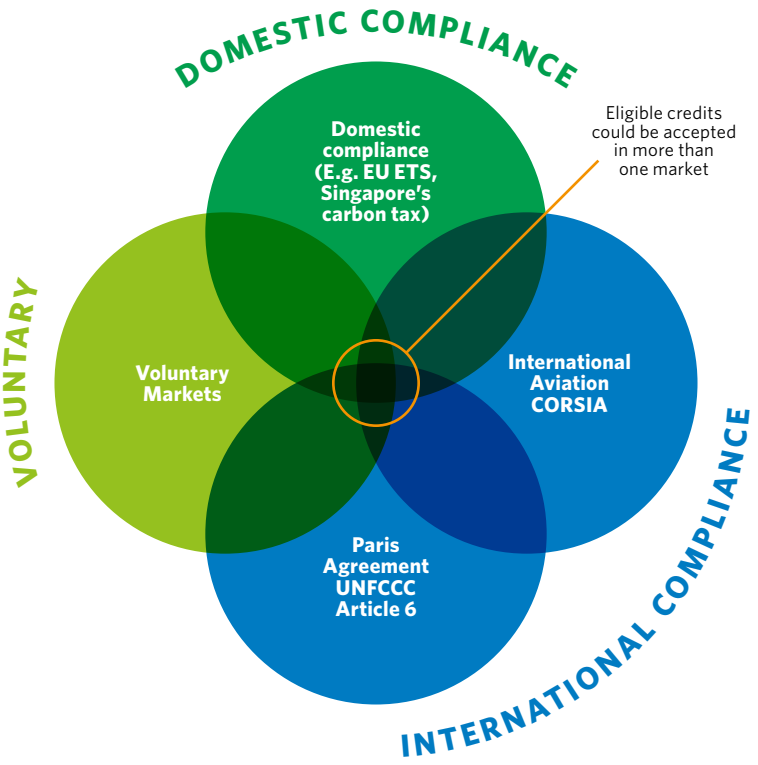


Image: Stephane Bidouze, shutterstock.com

Figure 5: Landscape of carbon credit markets



Source: Adapted from Abatable

Is there a difference between a "carbon credit" and an ITMO?

A **carbon credit** is a generic term for a unit representing one metric tonne of CO_2e. At "birth", a carbon credit is simply a certificate stating that a project reduced or removed emissions. The same carbon credit can then take on "different identities" depending on how it is **used**. For example, if it is used by a company for a voluntary claim (without a corresponding adjustment), it becomes a "voluntary carbon credit". If it is authorized by a government for use towards another country's NDC, that carbon credit becomes an ITMO. (See: Terminology Box 2) Traditionally, standards that have typically served the voluntary carbon market, like Verra, Gold Standard and the Architecture for REDD+ Transactions' (ART) REDD+ Environmental Excellence Standard (TREES) standard (ART/TREES), are now eligible to certify units under other markets. For example, Singapore's carbon tax system allows companies to meet obligations with ITMOs that may be based on voluntary methodologies. In addition, the IETA Article 6 tracker also shows numerous examples of countries having authorized projects for Article 6 based on methodologies normally used for voluntary purposes. Similarly, CORSIA—the aviation sector's compliance scheme—can source eligible credits from standards traditionally used in the voluntary space.

Terminology Box 2

Article 6 Units and their uses

1 tonne of CO_2eq	**Mitigation Outcomes:** Under Article 6, the term Mitigation Outcomes replaces most forms of international carbon credits. If Mitigation Outcomes generated in a country are transferred to another country, they become *Internationally* Transferred Mitigation Outcomes.[25]
1 tonne of CO_2eq	**ITMOs** are a specific type of carbon credit, created by Article 6 of the Paris Agreement and can be used in three ways: for NDC achievement, CORSIA or other purposes, such as voluntary claims (See: Figure 7). An ITMO must meet specific requirements: for example, include a corresponding adjustment to avoid double counting and follow certain reporting and tracking rules. ITMOs can represent both emission reductions and removals from all sectors, and they must originate from mitigation achieved from 2021 onward. Since an ITMO requires a corresponding adjustment, its trade reduces a seller country's available emissions reductions or removals for meeting its own NDC. Therefore, it carries risks of potentially undermining national climate commitments for the seller country.
1 tonne of CO_2eq	**Article 6.4 ERs**: Units issued under Article 6.4, called "A6.4 ERs",[26] can follow two paths: • **ITMOS**: Article 6.4 ERs become ITMOs when they are authorized for NDC use, CORSIA or other purposes and receive a corresponding adjustment.[27] They must also meet standards and follow methodologies approved by the Article 6.4 Supervisory Body. • **Mitigation Contribution A6.4ER (MCUs):** These are Article 6.4 ERs generated without a corresponding adjustment.[28] MCUs can be used to **mobilize climate finance** for domestic climate action**.** Differently from ITMOs, MCUs are not transferred internationally but instead stay within the seller country to help meet its own climate targets. Therefore, MCUs do not undermine a seller country's NDC accounting. MCUs can be converted into ITMOs if countries apply a corresponding adjustment, as long as the MCU does not leave the official Article 6.4 registry (the Mechanism Registry).[29] Aside from the accounting requirements, ITMOs and MCUs are identical units.

* See also Figure 7.

How is double counting addressed?

What is a corresponding adjustment?

Article 6 of the Paris Agreement addresses double counting through **corresponding adjustments**, an accounting measure that prevents two countries from counting the same emissions reductions twice. When an ITMO is sold to another country, the **seller country must add emissions to its accounting**, so that only the buyer can count emission reductions toward their climate goal. This ensures that emissions reductions or removals are counted only once.

What is an "authorization" under Article 6?

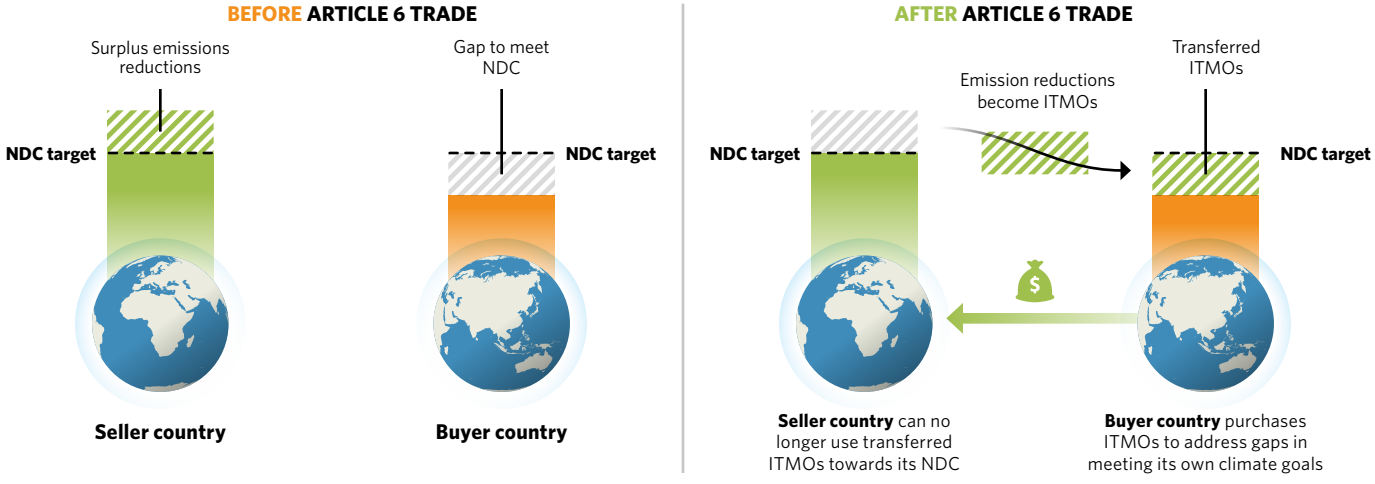
It is a concept first introduced by Article 6.3 of the Paris Agreement which requires countries to "authorize" the use of ITMOs towards NDCs. The concept was further developed at COP26 to become a key component of Article 6, as it triggers a commitment by the seller country to apply a corresponding adjustment, as well as reporting requirements.[30] While some elements must be included, such as how ITMOs will be used, there is no mandatory template countries need to follow when issuing authorizations. Instead, the UNFCCC has developed a voluntary template to guide countries.[31] Authorizations can be changed or revoked, but only until ITMOs are first transferred internationally, unless otherwise stipulated in the bilateral agreements or letters of authorization.[32] Normally, when the issue of authorization comes up in the Article 6 context, it refers to the authorization of ITMOS. However, Article 6 establishes three types of authorizations, which could be consolidated into one single process:[33] authorization of ITMOs, authorization of cooperative approaches and authorization of entities.

When is a corresponding adjustment required?

A corresponding adjustment is required in Articles 6.2 and 6.4 and for all units authorized by the seller country and transferred internationally, including from conditional targets and sectors outside an NDC.[34] Countries must apply a corresponding adjustment for units transferred to the buyer country's NDC or for CORSIA. There are a few exceptions to the application of corresponding adjustments in Article 6:

- **Pre-2020 units:** corresponding adjustments are not required for pre-2020 Certified Emissions Reductions (CERs), which may be transferred to Article 6.4 but only used to meet the seller country's first NDC.[35]

Figure 6: How is double counting addressed?



* This is an illustrative example but there are other ways in which an Article 6 trade can happen

- **Mitigation Contribution Units:** In 2022, for the first time, countries introduced a new name for Article 6.4 units that do not require a corresponding adjustment, called Mitigation Contribution A6.4 ER (MCU).[36] These units can be used to **mobilize climate finance** for domestic climate action. (See: Terminology Box 2)

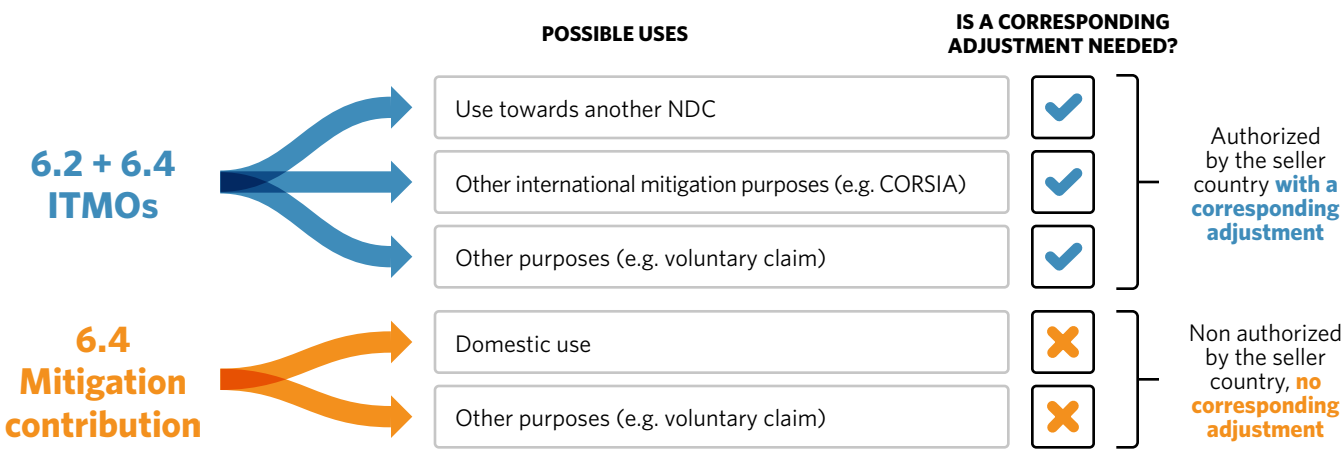
What if a country fails to apply a corresponding adjustment or report inconsistencies?

Article 6.2 trades will undergo two levels of review. **First**, there will be an automated consistency check,[37] designed to catch formal mistakes, and **second** - and more importantly - a technical expert review (TER).[38] The review looks at whether countries are applying corresponding adjustments consistently and upholding environmental integrity, for example, so there is no net increase in global emissions and so conservative baselines are being used.[39] The first reports by the TER were published in May 2025,[40] and there are more underway, with experts currently reviewing **Initial Reports** submitted by countries. The conclusions of these early reviews are likely to shape how key Article 6.2 rules are interpreted in practice—especially what counts as a significant or persistent inconsistency. Therefore, this issue may take the stage at COP30, with countries providing key guidance on the reach of the review process. **If experts find inconsistencies, they can flag them but not block trades**. At COP29, there was a lot of debate on whether trades identified with significant or persistent inconsistencies should be restricted so that ITMOs could not be used for NDCs, CORSIA, or the voluntary carbon market. Ultimately, the COP29 decision stopped short of making this a binding requirement and left it as a recommendation. Still, serious and repeated issues can trigger the Paris Agreement Implementation and Compliance Committee (PAICC), a separate UN body responsible for promoting compliance with the Paris Agreement, to take action.[41]

What is a unilateral authorization?

A unilateral authorization is used by a seller country to authorize ITMOs even before the buyer is identified, making them available for the aviation sector (CORSIA), voluntary markets, or other buyer countries. It is different from a "classic" country-to-country cooperative approach where two countries negotiate and authorize ITMOs together. The viability of unilateral authorizations took the stage at COP28 and COP29 under agenda item "definition of cooperative approaches". Some countries feared that "unilateral authorizations" could undermine the intention of Article 6.2 to prioritize cooperation between countries and risk complications in the reporting and accounting of ITMOs. At the same time, it allows for improved flexibility by seller countries and paves the way for an expanded market of authorized ITMOs, including for use in CORSIA. Ultimately, the proposal to restrict unilateral authorizations was rejected in Baku (COP29).[42] A few countries have issued unilateral authorizations in the past years, including, for example, Guyana to allow trades of REDD+ results,[43] under the ART TREES standard.[44]

Figure 7: When is a corresponding adjustment needed?



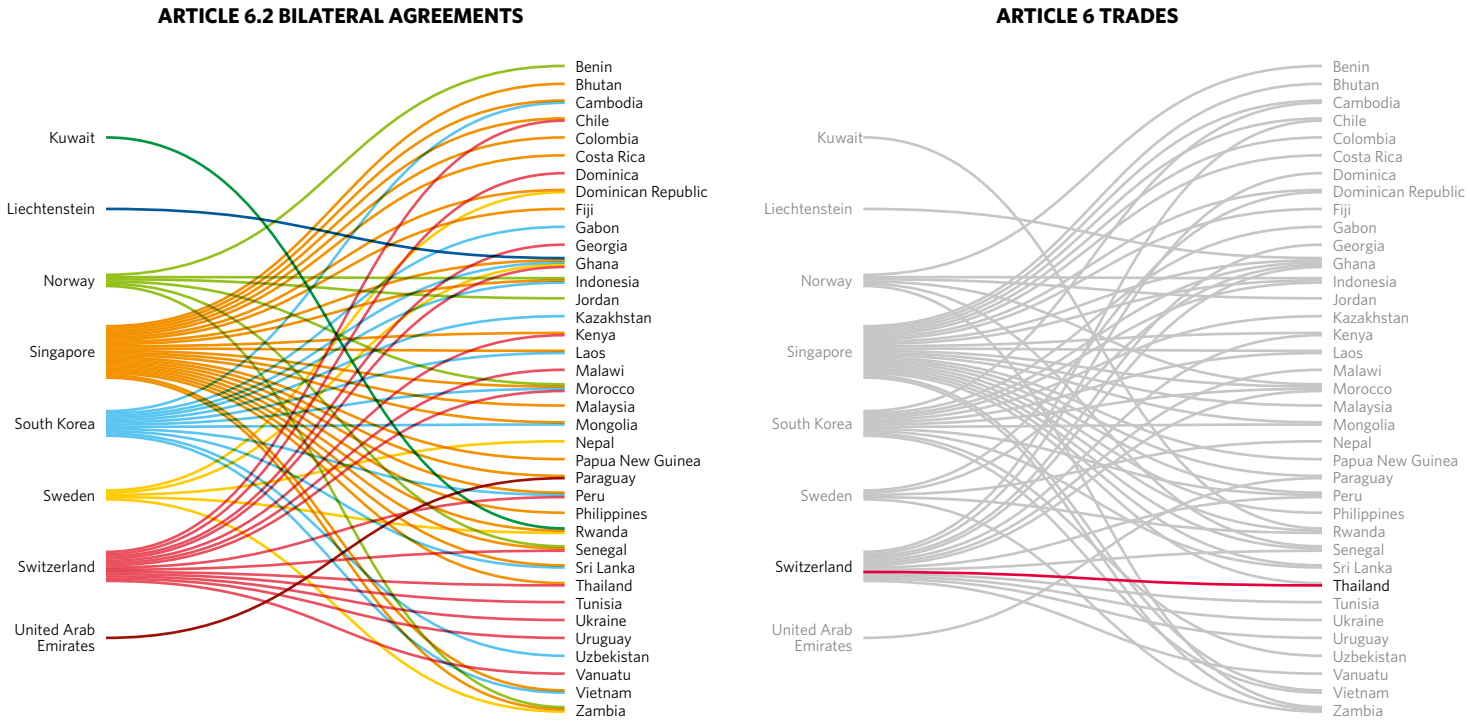
We got a deal on Article 6 - when will trading scale up?

When will Article 6.2 trades scale up?

Article 6.2 has been operational since 2021, and over 80 bilateral agreements have been signed, but only one country-to-country trade (Switzerland-Thailand) has been completed as of May 2025 (See: Figure 8). This slow uptake is mostly due to the lack of domestic frameworks to implement Article 6, uncertainty around NDC progress, and the time it takes to develop a solid pipeline of carbon projects. Beyond bilateral agreements between governments, there have been a few Article 6.2 transactions between Guyana and airlines for purposes of CORSIA, including one cancellation in February 2025.[45]

While COP29 finalized key rules, real scaling up of Article 6.2 trades depends on a mix of political, technical and institutional readiness. Most decisions around implementation are left to national governments. Key decisions —such as what will be traded, how trades will be operationalized, and who will oversee the markets— need to be addressed domestically before trading starts to take off. Developing these frameworks take time and even when they are in place, a more complex issue will arise as **seller countries** define how to participate in Article 6 without undermining the achievement of their NDCs. Since an ITMO requires a corresponding adjustment, its trade reduces a seller country's available emissions reductions or removals for meeting

Figure 8: Examples of Article 6.2 bilateral agreements and Article 6 trades as of May 2025



*This graph was adapted from IETA's Article 6 Tracker and does not include cooperation under Japan's JCM, which can be seen here.

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its own NDC. (See: Article 6 Supply). **Buyer countries and investors**, in turn, must manage risks that sellers may fail to apply corresponding adjustments, or restrict ITMO exports due to NDC achievement concerns. As a result, buyer countries are diversifying their deals across multiple countries. Buyer countries such as Switzerland had already started to develop Article 6.2 pilots in 2020, even before the Article 6 rules were agreed upon at COP26. In 2022, Ghana became the first country to issue an official authorization letter for the export of ITMOs of a climate-smart rice project to Switzerland, 2 years after the agreement between Ghana and Switzerland was signed in 2020. In addition, for countries developing **a new pipeline of projects**, it may take years until these can generate carbon credits.

Is Article 6.4 operational?

The Paris Agreement Crediting Mechanism – PACM (Article 6.4) is not yet fully operational - but it is getting closer. The initial supply of Article 6.4 units is expected to come in the first half of 2025 from **transitioned CDM projects**. However, a pipeline of **new projects** might have to wait until 2026, once updated methodologies are approved and the registry is operational.[46] The Supervisory Body will start to consider and approve the first methodologies that will be eligible under Article 6.4, following the approval of the standards on methodologies, removals, additionality, baselines and leakage. **While the rules that are being approved might seem highly technical, their consequences are far-reaching**: Further work on standards and tools will determine what is eligible under Article 6.4 and shape the scope and feasibility of carbon markets investments in various sectors. These decisions will also influence the market far beyond Article 6.4, setting expectation for what counts as "high-integrity" in the voluntary carbon markets and compliance markets. (See: Article 6 and the VCM). Here's a summary of where key elements stand and what needs to happen next: [47]

ALREADY OPERATIONAL

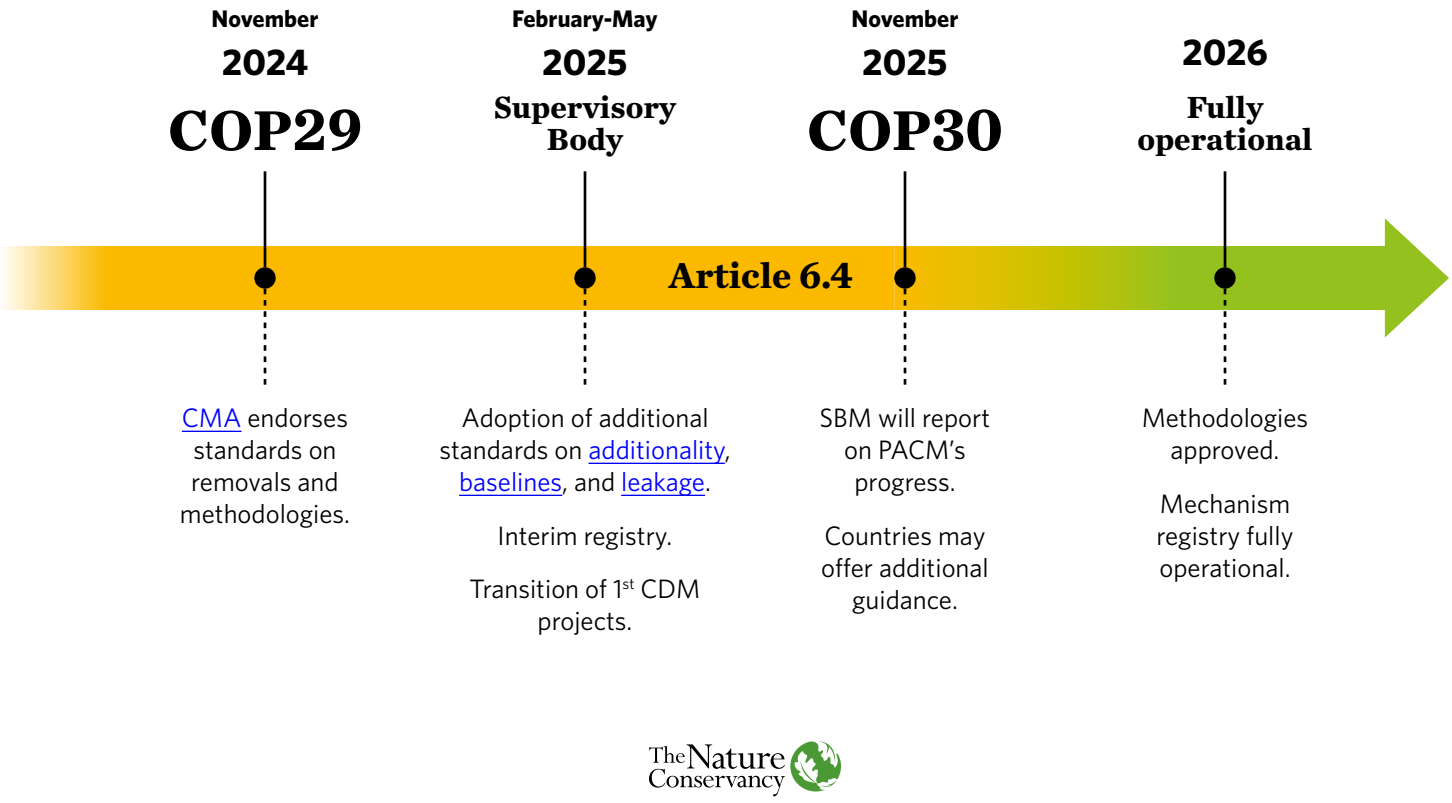
- **Projects transitioning from the CDM**: CDM projects are allowed to transition to Article 6.4 and continue to use their original CDM methodologies until December 2025.[48] This makes these projects the first to potentially generate Article 6.4 units, as they do not need to wait until *new* methodologies are approved by the Supervisory Body. In February of 2025, a cookstove project in Myanmar became the first CDM project to officially transition into Article 6.4.[49]
- **Safeguards and grievance mechanisms:** Safeguards and grievance mechanisms ensure the social and environmental integrity of projects, including equitable benefit-sharing with local communities and Indigenous peoples, and provide a platform for stakeholders affected by projects to voice concerns. The Sustainable Development Tool (SD Tool) was adopted in October 2024, representing a key milestone for the operationalization of Article 6.4. It is the first mandatory safeguards assessment under the UNFCCC and it applies to all Article 6.4 projects, including transitioning CDM projects. Additionally, the Supervisory Body has adopted grievance procedures, waiving fees for those wanting to make complaints.[50]

NOT YET FULLY OPERATIONAL

- **Approval of new methodologies:** As of May 2025, no new methodologies have yet been approved under Article 6.4. This is a major roadblock: without approved methodologies, new projects cannot be registered. The first wave of methodologies will be adapted from the CDM, including grid-connected electricity generation from renewable sources, thermal energy production waste management, and clean cooking. See the full list here. The first Article 6.4 methodologies will be considered by the Supervisory Body in **August 2025**.[51] In the future, non-CDM methodologies, including from independent crediting standards, could also be submitted for approval.
- **Approval of new projects:** Without approved methodologies, new projects cannot be registered. However, there are already procedures partially in place to guide the design and implementation of new Article 6.4 projects, including the Article 6.4 activity standard for projects and the Article 6.4 activity standard for programmes of activities (PoAs).

- **Additional Standards and Tools:** In addition to the standards on removals and methodologies endorsed at COP29, the Supervisory Body has continued to develop key elements. As of May 2025, it has adopted standards on additionality, leakage and setting baselines and will continue to work on key issues such as addressing non-permanence and large-scale crediting programs, which is expected to include specific provisions on jurisdictional REDD+. A list of all products related to methodologies can be found here.
- **Mechanism Registry**: The Mechanism Registry is the official record for all Article 6.4 activities — including issuance, transfer, and cancellations. As of May 2025, this registry is not yet fully functional. An interin version was launched in February 2025 to allow limited transactions, but it lacks key features, such as distinguishing between different types of units (like MCUs and ITMOs). Full registry functionality is essential for scaling up the market. At COP29, countries decided that the Article 6.4 registry (Mechanism Registry) could connect with the Article 6.2 international registry and that countries and entities (companies, project developers, investors, etc.) can open holding accounts to receive and manage A6.4 Mitigation Contributions.[52]

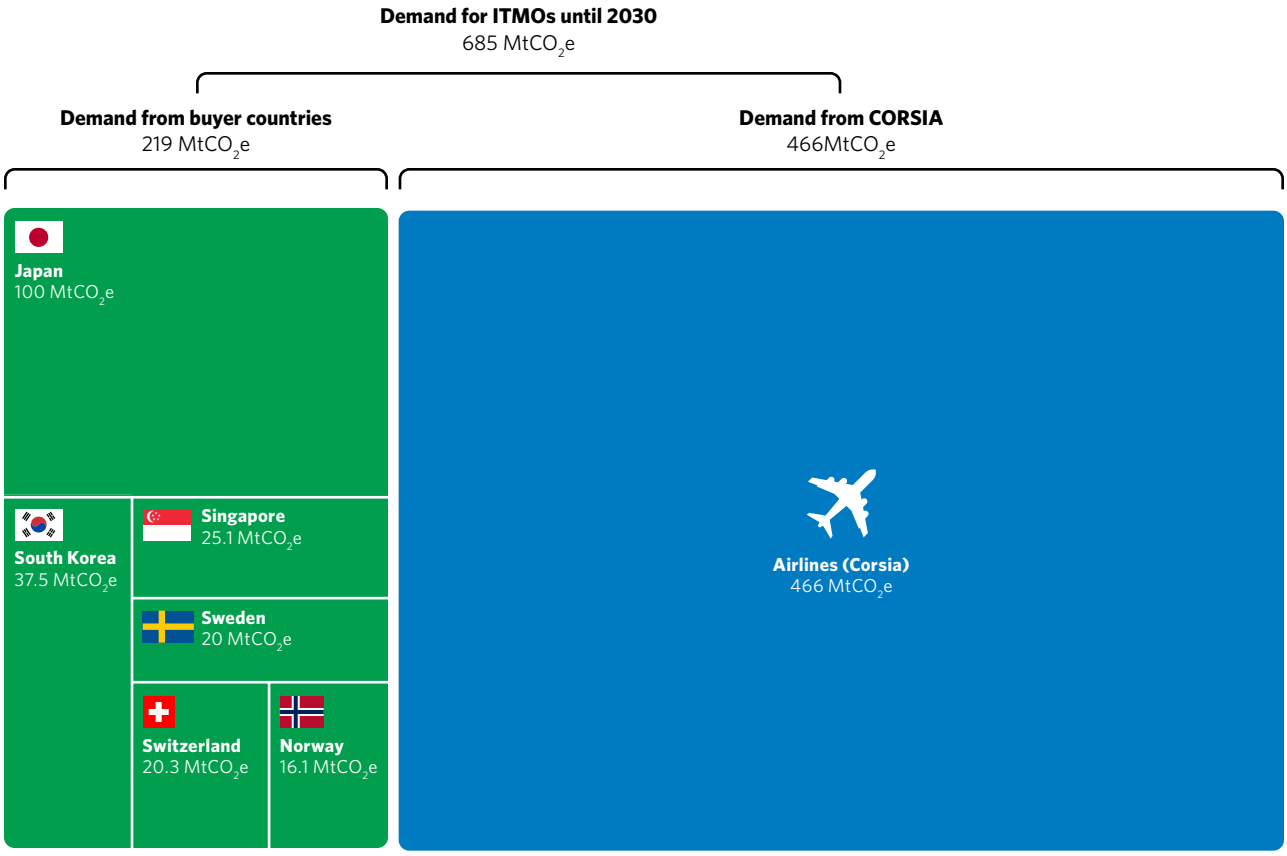
Figure 9: Operationalization of the Paris Agreement Crediting Mechanism – PACM (Article 6.4)



Article 6 Demand: Who will buy ITMOs?

Figure 10: Cumulative demand for ITMOs until 2030 from airlines and buyer countries[53]

Source: Demand estimates by South Pole AG, and adapted by TNC



* Estimates from all buyer countries and CORSIA are detailed in endnote 53

** Countries like Liechtenstein, Kuwait, and the United Arab Emirates (UAE) have announced interest in purchasing ITMOs, but tangible demand numbers were either not announced or a relatively small, therefore, they were not included in Figure 10

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south pole

Who will buy ITMOs?

Demand for ITMOs is emerging, even as the market remains in its early stages (See: When will trading scale up?). While there is still uncertainty around future volumes, announcements from buyer countries and CORSIA projections start to offer a picture of how the market is taking shape. Figure 10 provides a conservative estimate of potential Article 6 demand, based on what we know today:

- **Government-to-government** trades under Article 6.2 are still in early stages, with only a handful of countries such as Switzerland, Singapore, Sweden, Norway, South Korea and Japan actively pursuing bilateral deals. (See: Figure 8). Country buyers represent a relatively small share of overall demand, around **32%**. This includes both direct purchases from countries (e.g., Sweden and Norway) and demand from companies that may buy ITMOs to meet regulatory requirements or to reduce tax liabilities – such as firms covered by Singapore's

Carbon Tax. Countries like Liechtenstein, Kuwait, and the UAE have announced interest in purchasing ITMOs, but tangible demand numbers were either not announced or a relatively small, therefore, they were not included in Figure 10. Some other countries, such as New Zealand, are negotiating bilateral deals and keeping the door open for Article 6, but have not yet announced potential demand. **Demand from governments could increase** in the coming years as more countries are considering the use of international credits to help meet 2030 or 2040 targets. For example, France and Germany have signaled support for the use of international carbon credits as part of the 2040 climate goals. Because these are high emitters, it could significantly increase demand for ITMOs. In addition, the conclusion of Article 6 negotiations at COP29 and the future full operationalization of the Paris Agreement Crediting Mechanism – PACM (Article 6.4) may also encourage broader participation (See: When will Article 6 trading scale up?).

- The bulk of current demand comes from airlines participating in **CORSIA**, the international aviation offsetting scheme, which is expected to drive around **68%** of total Article 6 demand in the near term (See: Figure 10). Since CORSIA requires credits with a corresponding adjustment, airlines are expected to purchase ITMOs under Article 6.2 or 6.4, aligned with methodologies formally eligible under CORSIA. There have already been several Article 6.2 transactions between airlines and the Government of Guyana for purposes of CORSIA, including one cancellation in February 2025.[54]

- Beyond governments and airlines, there are early signs that **private companies** are starting to look to Article 6 units for trading, or making **voluntary claims** backed by corresponding adjustments.[55] While there is currently no robust data on how demand from corporations will evolve, and it is therefore not reflected in Figure 10, a 2024 survey from IETA found that 69% of the 105 companies that were interviewed intend to buy ITMOs over the next five years.[56] The full operationalization of the Paris Agreement Crediting Mechanism - PACM (Article 6.4) will likely increase demand for ITMOs and MCUs from the private sector. (See: Is A6.4 operational?)

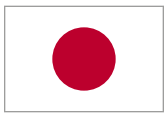
Examples of buyer countries' Article 6 strategies:

Switzerland: Switzerland's NDC 3.0 committed to a 65% emissions reduction target by 2035[57] and to continue to use Article 6, which is consistent with the country's 17 existing international carbon agreements.[58] Unlike some countries that provide authorization at the first ITMO transfer, the Swiss Government is not directly involved in commercial transactions with private buyers but simply authorizes the programs to give the private sector investment security. Buyer companies are fossil motor fuel importers from the transport sector, who fulfill their obligations under the Swiss CO_2 Law through the Klik Foundation.[59] Projects to date have mostly focused on solar, clean cookstoves, waste management, biogas, and energy efficiency/fuel conversion.

Switzerland's announced demand:
20.3 $MtCO_2e$ (2025-2030)

Norway: Norway plans to leverage Article 6 to become climate neutral by 2030,[64] meaning the government will ensure that remaining emissions are offset by emissions reductions in other countries.[65] The government focuses on transacting emission reductions from policies, as opposed to project-level activities, and in the lead up to COP29 announced $740 million USD will be committed to support developing and emerging economies to transition to low-carbon societies under Article 6. Norway has signed bilateral cooperation agreements with Morocco, Senegal and Indonesia. Baselines to measure the mitigation of energy sector policies implemented in partner countries are being developed.[66]

Norway's estimated demand:
16.1Mt CO_2e up to 2030.[67]



Japan: Japan's NDC 3.0 committed to a 60% emissions reduction target by 2035.[60] Japan has pursued a long-standing bilateral approach to international carbon markets, well before Article 6 rules were finalized through its Joint Crediting Mechanism (JCM), which now aligns with Article 6.2.[61] What is unique about Japan's approach is the idea of getting authorization of ITMOs from seller countries in exchange for investment. Japan's companies make an equity investment and then agree with seller country that a portion of the results will be correspondingly adjusted as the investors' share, relative to their investment. Japan has signed agreements with 29 countries,[62] including Vietnam, Indonesia, Kenya, and Bangladesh.

Japan's announced demand: 100$MtCO_2e$ by 2030 and approximately 200 $MtCO_2e$ by 2040[63]

Sweden: Sweden falls under the EU's NDC, which will not use ITMOs to meet 2030 targets. As per the country's latest BTR, Sweden will only use ITMOs beyond the EU NDC and towards its domestic targets or voluntary offsetting.[68] Sweden has signed bilateral agreements with Ghana, Nepal, Zambia and the Dominican Republic,[69] cooperating with both public and private stakeholders. It also signed a MOU with Switzerland on industrial carbon removals, with the engagement of the private sector.

Sweden's estimated demand: 20 $MtCO_2e$[70]

Singapore: Singapore's approach combines sovereign demand – direct purchases from the Singapore government – and private sector compliance. Similar to Switzerland's approach, companies are directly involved in purchasing and using Article 6 credits to comply with the country's Carbon Tax to offset up to 5% of their taxable emissions from 2024 onwards.[71] Singapore is second only to Japan in the number of international agreements signed under Article 6 (See: Figure 8). The country has also developed a framework with Verra and Gold Standard with streamlined procedures to help countries use independent crediting standards to implement Article 6.2 deals.[72]

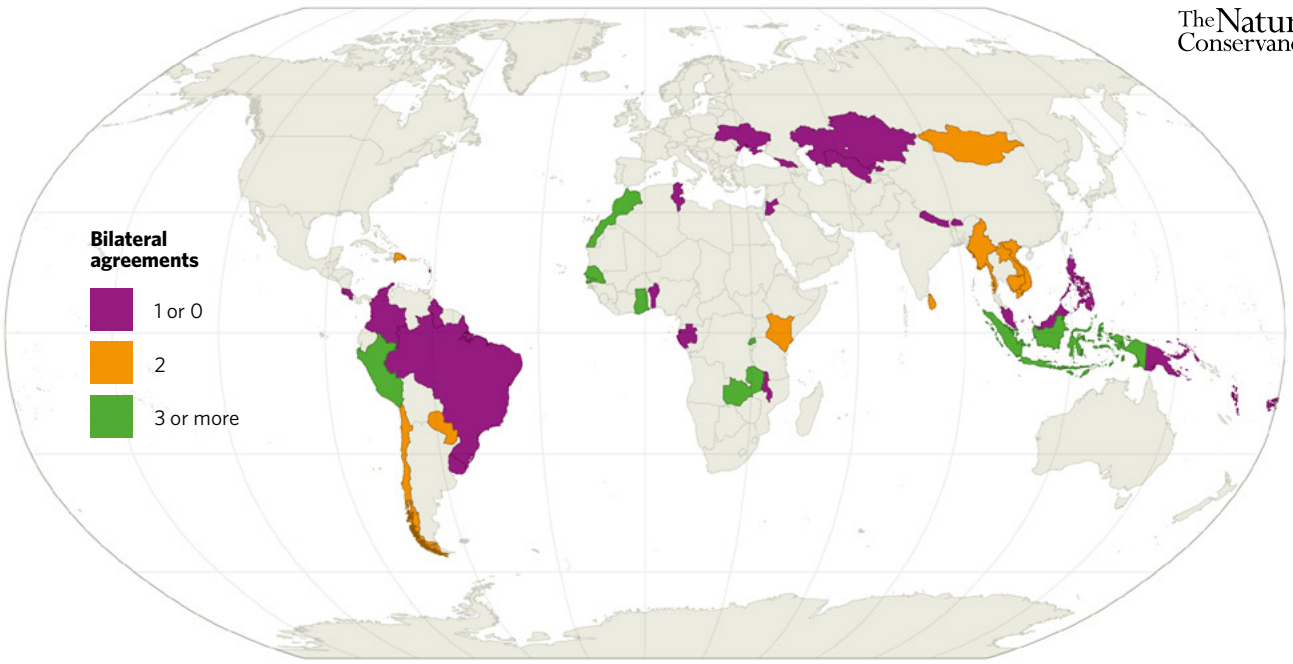
Singapore's announced demand:
25.1 $MtCO_2$ eq 2021-2030[73]

South Korea: The government of South Korea has bilateral agreements with over 10 countries.[74] The country uses official development assistance (ODA) to help partner countries build the institutional and technical capacity needed to participate in cooperative approaches. These ODA grants or concessional loans are not tied to specific mitigation activities and do not result in ITMO transfers. Through a separate mechanism, Korean government agencies run competitive calls for "potential Article 6 projects" that engage the Korean private sector. They fund pre-feasibility and full feasibility studies and—if results are promising—may offer up-front capital support. This support is conditional on public funds being matched at least 1:1 by Korean private investment.[75]

South Korea's announced demand: 37.5 Mt Co_2e[76]

Article 6 Supply: Who will sell ITMOs?

Figure 11: Examples of seller country developing Article 6 domestic frameworks



Who will sell ITMOs?

The supply side of Article 6.2 is gradually expanding with several countries actively entering into bilateral deals under Article 6.2, developing regulatory frameworks to participate in Article 6 and building a pipeline of projects to generate ITMOs (See: Figure 11). Countries such as Ghana, Kenya, Paraguay, Indonesia, Zambia, and many others have already put in place domestic Article 6 strategies, getting closer to becoming active suppliers.

What risks should seller countries consider when trading under Article 6?

Article 6 offers seller countries an opportunity to attract international finance through carbon markets. However, it also carries risks, particularly the **risk of overselling**. To explain: under the Kyoto Protocol, developing countries had no binding targets for decarbonization and could sell carbon credits internationally without affecting their national accounting. Because in the Kyoto Protocol only the buyer (developed countries) had mitigation targets, **double counting was not an issue**. Under the Paris Agreement, every country has committed to reducing emissions through NDCs. Now, if a country sells an ITMO internationally, it needs to apply a corresponding adjustment to avoid double counting. This creates a new challenge for seller countries: trading too many ITMOs – especially from low-cost mitigation - could leave a seller country only with more expensive options to meet its NDC. Furthermore, ITMOs require over-achievement of the seller's NDC, to ensure the aggregate level of emissions is not increased by the transaction. Therefore, seller countries have been carefully considering which types of mitigation activities, what quantities and at what price they are willing to authorize. Within this, they might also choose to limit eligible credits to specific sectors, years, or technology types. Brazil, for example, recently adopted legislation creating a domestic market, explicitly stating that authorization of ITMOs is subject to limits in order to ensure NDC achievement.

To manage this risk while still benefiting from climate finance, seller countries are introducing different strategies through domestic legislation and policy. Key trends include:

- **High-Hanging Fruit Approach:** Under this approach, countries authorize ITMOs only from mitigation activities that are too expensive or difficult to implement domestically. Cheaper activities (the "low-hanging fruit") are reserved for domestic implementation to help the seller country meet its own NDC at a lower cost. This approach often involves restricting Article 6 trades to sectors or activities linked to *conditional* NDC targets (See: Figure 12).[77] For example, Ghana created a whitelist of eligible sectors covered by its conditional target and reflected in its National GHG Inventory. Zambia uses Marginal Abatement Cost Curves (MACCs) to identify low-cost mitigation options for domestic implementation. This approach tends to strengthen the case for additionality but poses practical challenges, particularly where countries lack clear data on the cost of mitigation options or have not clearly distinguished between conditional and unconditional elements of their NDCs.
- **Corresponding Adjustment Fees:** Some countries are introducing fees or levies to apply a corresponding adjustment. Ghana, for example, charges a $5 flat fee per ITMO to raise ambition beyond the NDC and cover administrative costs. Kenya's regulation included two types of fees: an administrative fee of 1% of expected credits and a 0-25% tax on revenue from projects. Tanzania has proposed a levy of 8% on a project's sold credits and 1% on a project's expected credits. While a corresponding adjustment fee alone might not prevent the risk of overselling, it helps to raise domestic revenue and compensate for some of the loss of mitigation activities needed to meet NDCs. But this approach may also come with trade-offs if not designed according to specific national circumstances: applying a flat fee across all activities can undermine the financial viability of higher-cost (and often more additional) mitigation efforts, potentially discouraging investment in the "high-hanging fruits" that Article 6 is meant to unlock.[78]

Terminology Box 3

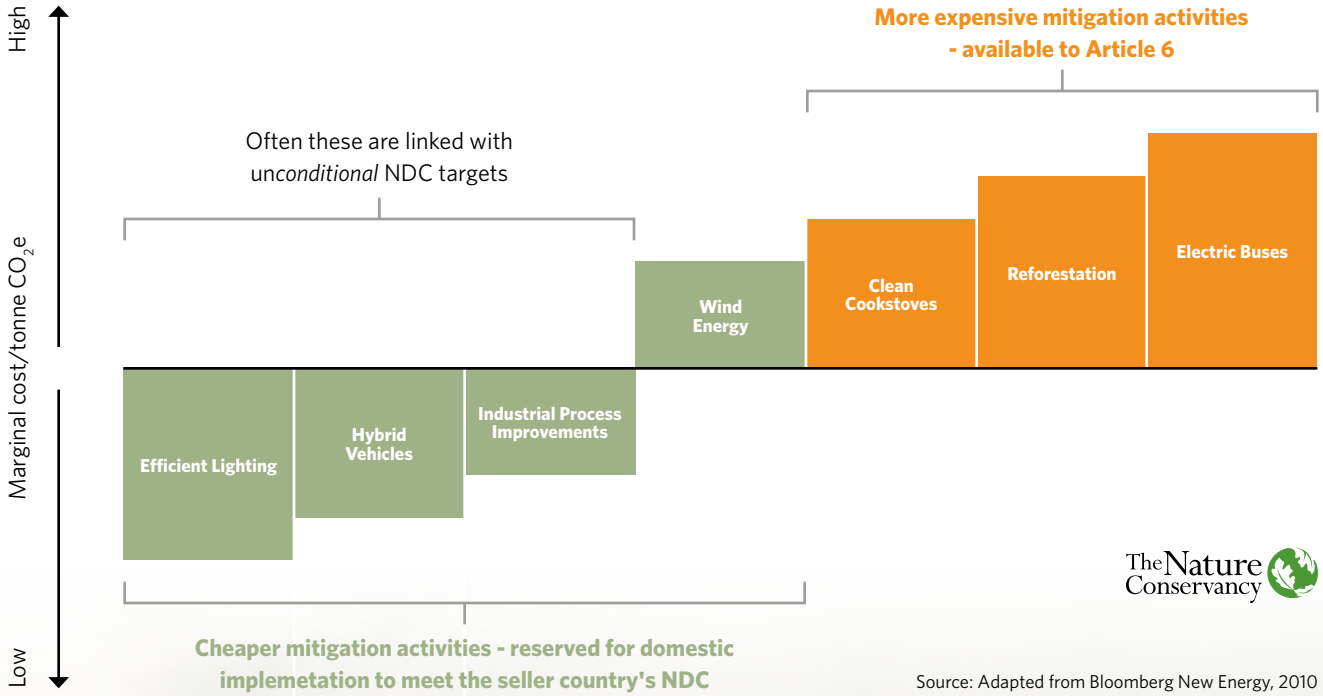
Article 6 fees and levies

When designing Article 6 strategies, countries have often developed different types of fees. Here's a summary:

- **Corresponding Adjustment fees:** designed to compensate for some of the loss of mitigation activities needed to meet the seller country NDC
- **Administrative fees:** designed to cover administrative costs of participating in Article 6, such as running an Article 6 focal point office and meeting reporting requirements.
- **Fees to fund adaptation and OMGE:** Although these are not required for Article 6.2, they are "encouraged on a voluntary basis" (See: OMGE and SOP)
- **Benefit Sharing (e.g: with local communities):** As countries are defining strategies to avoid the risk of overselling, a broader consideration is how the benefits from exporting ITMOs are shared among different stakeholders, such as states, provinces, municipalities, project developers and the communities that participate in the activity or are impacted by it.

- **Limits on quantities, buffer pools and benefit-sharing:** Some countries are also setting caps on ITMO exports, implementing buffer pools, or developing benefit-sharing arrangements to avoid the risk of overselling. These limits can take various forms, such as limiting crediting periods (e.g., only authorizing ITMOs from the first 10 years of a project) or benefit-sharing rules that may cap the share of credits that can be authorized (e.g., only 10% of credits from a given project) to ensure domestic retention. Ghana has specified that all activities must reserve 1% of mitigation outcomes for domestic use, while Indonesia provides a range of between 10-20% for mitigation activities that are included in the NDC.

Figure 12: Example of marginal abatement cost curve (MACC) to illustrate how countries can reduce the risk of overselling



Source: Adapted from Bloomberg New Energy, 2010

Is nature included in Article 6? What about REDD+?

Yes, natural climate solutions, including REDD+ activities, are included in Article 6. As is the case for all sectors, the land sector is not explicitly referred to in the text, however, nature activities could be eligible for Article 6 trades, provided the programs fulfill the Article 6 guidance. (See: Terminology Box 5)

Figure 13: Article 6.2

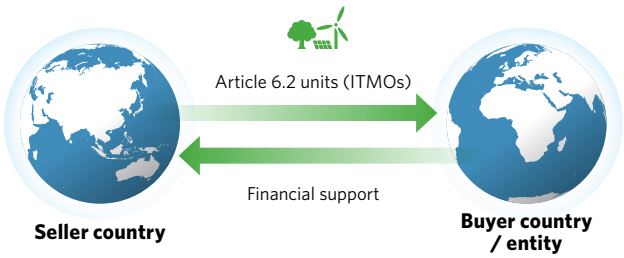
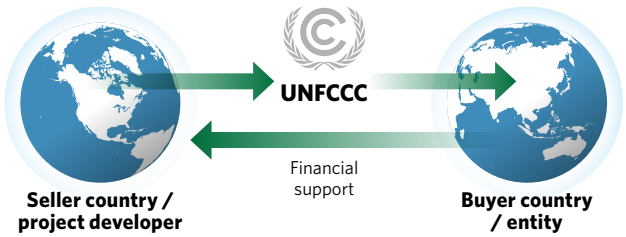


Figure 14: Article 6.4



Article 6.2

Is nature included in Article 6.2?

Yes. Natural Climate Solutions (NCS) include protecting, restoring and managing natural ecosystems such as forests, mangroves, croplands, grasslands, and peatlands – all of which fall under the Intergovernmental Panel on Climate Change (IPCC) definitions of emissions reductions or removals. ITMOs include both emission reductions and removals, regardless of the sector where they come from and there are no limitations on the types of units that can be traded.[79] As a result, **nature activities that lead to either emission reductions and/or removals can be eligible**, as long as Article 6 guidance is met, such as the inclusion of a corresponding adjustment and reporting requirements.[80] It will be up to countries to decide if they want to include nature activities as part of their Article 6 agreements. Given their high mitigation potential and relatively low cost, nature activities could represent a significant share of the Article 6 market. Several countries — including Japan, South Korea, Singapore, Guyana, and Ghana — have already expressed intent to include nature in their cooperative approaches.[81]

Article 6.4

Is nature included in Article 6.4?

Yes, as long as relevant methodologies are approved by the Article 6.4 Supervisory Body. Under Article 6.4, there are no limitations on the sectors or activities for which methodologies can be submitted or approved. Therefore, **emission reductions and removals from all sectors (including nature) could generate Article 6.4 units.** As of May 2025, no methodologies have been approved, though the Supervisory Body will start with CDM methodologies, which include afforestation and reforestation. (See: Is A6.4 operational?) Nature can play a particularly important role, not only for its mitigation benefits but also for its ability to enhance adaptation and resilience, as they can provide additional environmental and social benefits. The Supervisory Body has already adopted important rules around methodologies, removals, additionality, baselines and leakage. Future decisions and further guidance around these issues will significantly shape the scope of nature activities allowed in Article 6.4.

The standard on removals, endorsed at COP29, applies not only to carbon removal activities, but also to emission reduction activities that carry a risk of reversal — a key provision that directly affects nature-based activities and has gone largely unnoticed.

Is REDD+ included in Article 6.2?

Yes. REDD+ includes five activities: reducing emissions from deforestation, reducing emissions from forest degradation, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stock. All of these activities fall under the definition of **emission reductions** or **removals** (See: Figure 14), and therefore, are within the scope of an ITMO.[82] As is the case for all sectors, seller countries will need to demonstrate how their REDD+ programs fulfill Article 6 requirements, in additional to the Warsaw Framework. Recently, there have been dozens of Article 6.2 transactions of REDD+ results between Guyana and airlines for CORSIA purposes, under the ART/TREES standard, including one cancellation in February 2025.[83] (See: Unilateral authorization)

Is REDD+ included in Article 6.4?

REDD+ activities could be eligible under Article 6.4, should the Supervisory Body approves REDD+ related methodologies. In 2024, the Supervisory Body introduced **additional conditions for project level REDD+ activities to be eligible under Article 6.4,** (See: Figure 15) limiting eligibility of REDD+ activities to countries that already have REDD+ requirements in place.[84] This is the first time that there is a direct reference to REDD+ in the text, confirming that REDD+ activities could be credited under Article 6.4. These measures aim to ensure better coordination, environmental integrity and avoid double counting, while still allowing REDD+ to benefit from much needed finance under Article 6.4.[85] **These rules apply only to project-level activities**. Specific requirements for "large scale crediting programs", which may include jurisdictional REDD+, will be developed in 2026.[86]

Article 6.4 rules for REDD+

There are two:[100]

1. "REDD+ activities" (project-level) will only be eligible under Article 6.4 if the seller country has implemented **all four REDD+ requirements** of the Warsaw Framework: a national REDD+ strategy or action plan, a safeguards system, a national monitoring system, and an assessed forest reference emission level (FREL).[101]
2. In addition, **the "REDD+ activity" needs to be included in the four elements of the national REDD+ strategy**.[102] (See: Figure 15)

If the seller country does not have a REDD+ strategy submitted to the UNFCCC, or the activity is not included in the REDD+ strategy, the seller country's "REDD+ focal point" (not the Article 6 focal point) needs to submit a letter indicating when the activity will be included in all 4 elements mentioned above. This inclusion needs to happen no later than the verification phase.[103] In practice, to fulfill this condition, countries will need to align project-level activities with national REDD+ frameworks. Therefore, this creates a de fato requirement that REDD+ activities "nest" with national REDD+ programs through "upscale".[104] (See: Terminology Box 4).

Terminology Box 4

Nesting

Under Article 6.4, **"nesting"** refers to the alignment of relevant aspects of project-level REDD+ activities within an existing higher programme, such as national or subnational REDD+ framework.[99] For example, ensuring alignment with monitoring systems, safeguards, baselines, etc. It may vary significantly country-by-country - in some cases, it might just be an acknowledgment that project-based activities are subtracted from national results to avoid double-counting, while complying with the national or subnational REDD+ program.

Terminology Box 5

Natural Climate Solutions (NCS) & REDD+

Both "natural-climate solutions" and "REDD+" are approaches that aim to mitigate climate change and promote sustainable land use practices.[105] While **NCS** is a broader concept that includes a range of actions to protect, restore and manage a variety of ecosystems such as forests, mangroves, croplands, grasslands, and peatlands, **REDD+** is a specific UNFCCC framework aimed at financially compensating countries and jurisdictions for reducing emissions from deforestation. To benefit for REDD+ finance, countries have to follow **all four REDD+ requirements** of the Warsaw Framework: a national REDD+ strategy or action plan, a safeguards system, a national monitoring system, and an assessed forest reference emission level (FREL).[106]

But wasn't REDD+ excluded from the Article 6 text?

No. At COP26, specific text on REDD+ was proposed to allow the recognition of **pre-2021** REDD+ results to be **automatically** included under Article 6.2. ITMOs, by definition, are generated in 2021 or later. Therefore, this text was rejected to ensure that Article 6.2 has consistent rules across all sectors (including land use). As mentioned before, the Article 6.2 text does not explicitly mention any sectors, and the exclusion of specific text on REDD+ did not change the fact that all REDD+ activities fall under the concepts of emission reductions and removals being eligible for Article 6 trades. In addition, the Article 6.4 Supervisory Body has created specific conditions for REDD+, which confirms its potential future eligibility.[87] (See: Is REDD+ included in Article 6.4?)

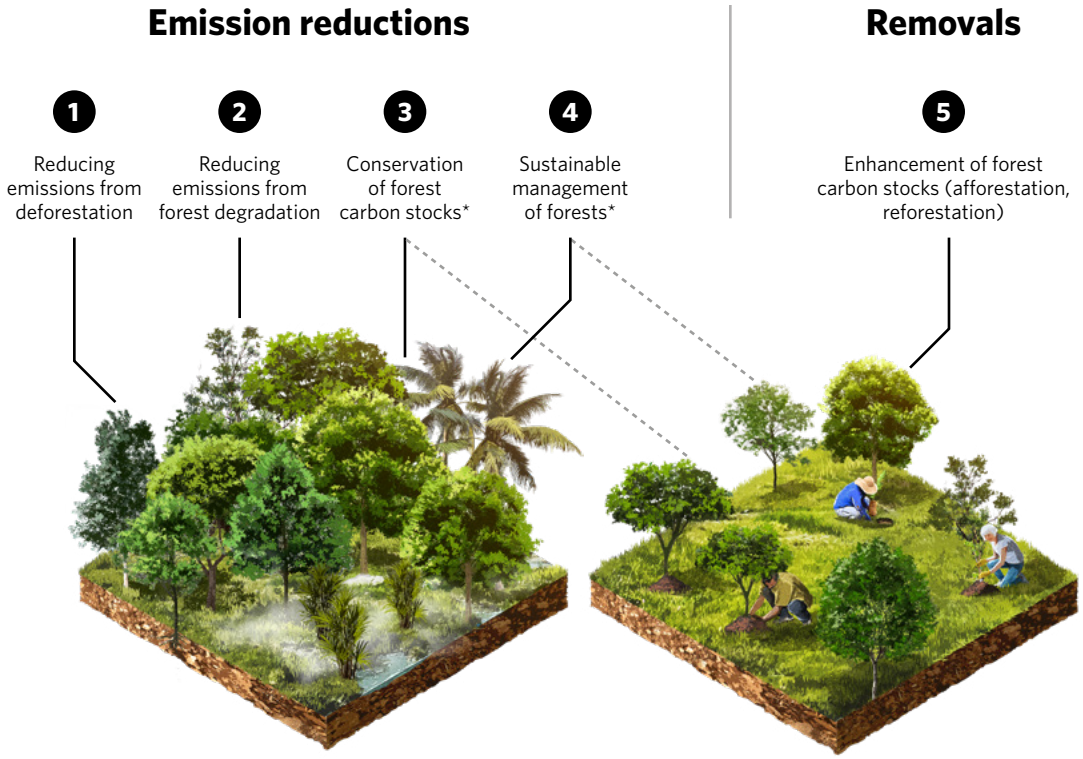
What about Article 6.8?

Although Article 6.8 is less defined than Articles 6.2 and 6.4, nature-based activities and REDD+ programs meet the Article 6.8 requirements. Article 6.8 could serve as testing grounds for nature activities that could eventually become market-based approaches but are not yet ready for markets: for example, most historical payments for REDD+ came from non-market bilateral deals and multilateral funds, such as the World Bank. These non-market payments helped countries to improve their REDD+ programs and now many REDD+ countries can apply for market-based programs like Lowering Emissions by Accelerating Forest Finance (LEAF).[88] Article 6.8 could also facilitate financial flows for non-market approaches that may never transition into a market, due to a limited volume of results, but may offer higher co-benefits and strong equity components.

What is the relationship between REDD+ (Article5.2)[89] and Article 6 of the Paris Agreement?

Article 5.2 of the Paris Agreement encourages countries to implement and support REDD+ policies. This recognition builds on several years of UNFCCC negotiations which resulted in the Warsaw Framework for REDD+ and the Cancun safeguards, with rules for developing countries to be **financially compensated** for reducing deforestation and forest degradation, through public and private sources. While Article 5.2 of the Paris Agreement provides methodological guidance for results-based finance, **it is not a financial mechanism in itself**. **On the other hand, Article 6 could be one of the sources of finance for REDD+ and a way to enhance ambition in forest targets.** The Supervisory Body has provided crucial clarification on the relationship between Article 5.2 and Article 6, establishing nesting requirements for the eligibility of REDD+ in Article 6.4.[90] (See: Is REDD+ included in Article 6.4?)

Figure 15: The five activities of REDD+



* The Warsaw Framework does not define "conservation of forest carbon stocks" or "Sustainable management of Forests". Countries have interpreted these categories differently: in official submissions to the UNFCCC, they have reported both emission reductions and removals from these activities. See the examples of Chile 2016 and 2023 and Malaysia. We have included dotted gray lines to reflect this ambiguity. For REDD+ activities to be eligible for Article 6, they have to fall under the categories of emission reductions or removals. Emissions avoidance is not eligible for crediting under Article 6 (See: What is emissions avoidance?).

To access finance for REDD+ via Article 6, forest countries need to, **first**, meet all the Warsaw Framework minimum requirements: Develop a national REDD+ action plan, a forest monitoring system (MRV), comply with REDD+ safeguards, have an assessed Forest Reference Emission Level (FREL). The coordination between subnational jurisdictions and national governments in this phase is important to ensure policy alignment.

As a second step, countries might need to **engage in additional activities to access market payments for REDD+**. Article 6.2 offers a more flexible approach, allowing the seller country and buyer to define specific requirements. They could, for example, choose to use independent carbon standards, such as ART/TREES or Verra's Jurisdictional and Nested REDD+ Framework (JNR), which require buffer pools for leakage and reversals, and third-party verification processes, all of which are not required by the Warsaw Framework.[91] Under Article 6.4, specific standards are still under development, but eligible methodologies must also meet requirements that go beyond the Warsaw.

As a **third step**, countries developing REDD+ programs will need to demonstrate how their REDD+ activities comply with **Article 6 rules.** For example, generating results after 2021, providing authorizations for the application of corresponding adjustments and complying with Article 6 rules on registries, tracking, reporting, addressing inconsistencies, etc. **Ultimately, it is up to the countries to decide whether to include REDD+ in the scope of their Article 6 strategies**. Since an ITMO requires a

corresponding adjustment, exporting ITMOs reduces a country's available emissions reductions for meeting its own NDC and, therefore, carries risks of overselling and potentially undermining national climate commitments. On the other hand, because ITMOs carry a corresponding adjustment, they might reach higher market prices.[92]

What is "emission avoidance" and how is it related to nature?

Emissions avoidance activities are not eligible under Article 6, at least until 2028.[93,94] This decision has sparked confusion about the concept of emissions avoidance and whether this undefined term could potentially include natural climate solutions. A key reason for this confusion is that the term emission avoidance **has never been officially defined by the UNFCCC nor the IPCC**, and it is not even referenced within the IPCC's definition of mitigation of climate change.[95] A **second source of confusion** comes from voluntary carbon market jargon**,** where carbon credits are either categorized as "emissions removals" or "reductions/avoidance", often used interchangeably, despite important distinctions.[96]

In the context of Article 6:

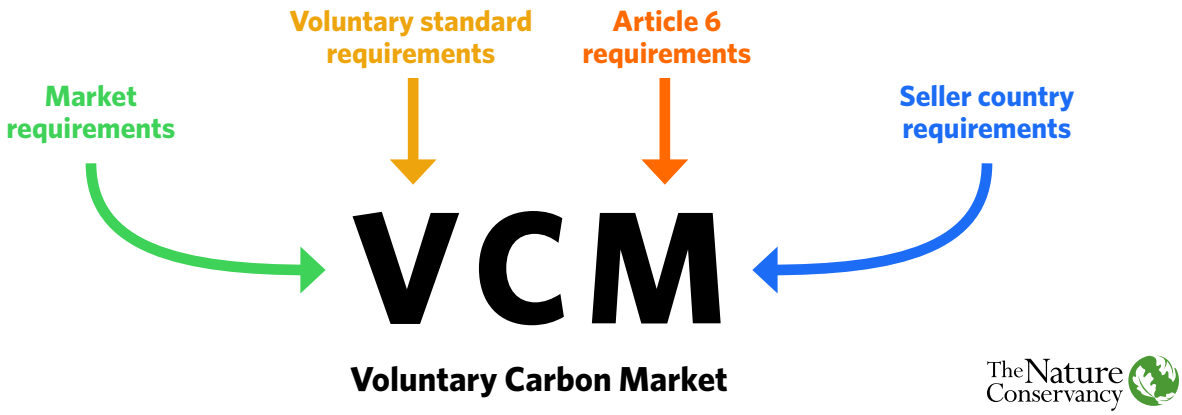
- **Emission reductions** are additional and would not have happened without human intervention. For example, when deforestation occurs, emissions from land use are released into the atmosphere. If a government implements REDD+ policies that successfully reduce deforestation rates (measured against a historical baseline, for example), this constitutes an emission reduction, not avoidance.
- **Emission avoidance:** In contrast, "emissions avoidance" are not necessarily additional and not measured against a historic baseline. For example, emissions avoidance has been used informally in the context of UNFCCC negotiations to reference a proposal from the Government of Ecuador from 2012 regarding compensation for its Yasuní initiative to keep oil reserves in the ground.[97] In this context, emission avoidance refers to policies and measures that explicitly forgo the opportunity to develop fossil fuel resources. For instance, avoiding drilling new oil reserves that have not yet been exploited, and are not at risk of exploitation in the future.

The **CDM** has also characterized methodologies under emissions avoidance defining it as "various activities where the release of GHG emissions to the atmosphere is reduced or avoided, for example, avoidance of anaerobic decay of biomass and reduction of fertilizer use".[98] These also refer to activities where a mitigation intervention would reduce the rate of existing emissions, which ultimately would fall under the definition of emission reductions.

Because of this confusion, many have assumed that all natural climate solutions are classified as emissions avoidance and are therefore excluded under Article 6 — but this is incorrect. In fact, natural-climate solutions include protecting, restoring and managing natural ecosystems – all of which fall under the IPCC definitions of emissions reductions or removals. As a result, **nature activities that lead to either emission reductions (e.g. reduced deforestation) and/or removals (e.g. reforestation) can be eligible under Article 6.2 and Article 6.4,** provided they meet Article 6 requirements.

How does Article 6 impact the Voluntary Carbon Markets?

Figure 16: Direct and indirect influences of Article 6 in the VCM



How does Article 6 impact the VCM?

The Paris Agreement does not have the mandate to regulate the voluntary carbon market. However, the rules and practices emerging from Article 6 are slowly reshaping the broader environment in which the voluntary carbon markets operate (See: Figure 5). Although the Article 6 market is in its early stages, and it is expected that voluntary transactions will continue to exist in parallel to Article 6 cooperation, some changes have already been happening.

- **Seller country requirements:** Ultimately, it will be up to the seller country to determine if Article 6 rules will apply to voluntary credits. When countries regulate Article 6 domestically, they often also introduce broader rules that affect all carbon projects (including those intended for the VCM). Some countries have required voluntary project developers to have government registration, approval, authorization, or non-objection/notification at various project development stages. Governments have regulated the scope of activities that can be implemented under a voluntary program or set minimum requirements for social and environmental safeguards and benefit-sharing. For example, Kenya requires at least 25% of the benefits from a project to be allocated to local communities. In some cases, countries are going further. The Bahamas, for example, requires a corresponding adjustment for all voluntary credits sold internationally, though most countries have not gone in this direction.
- **Market requirements:** Even if some countries do not regulate the voluntary carbon markets, initiatives like the Integrity Council for the Voluntary Carbon Market (IC-VCM) and the Voluntary Carbon Markets Integrity Initiative (VCMI) could drive the market towards Article 6 alignment. For example, both initiatives have considered whether a corresponding adjustment would be required for all voluntary credits and as of May 2025, neither the IC-VCM nor the VCMI have gone in this direction. These market initiatives are shaping how companies and Governments view "high-quality" offsets. For example, countries, like France, the United Kingdom and Paraguay, announced alignment with IC-VCM principles in their domestic carbon policies.

- **Standards requirements**: The line between voluntary and compliance markets is blurring. Traditionally, standards that have typically served the voluntary carbon market, like Verra, Gold Standard and ART/TREES, are now eligible to certify units that will be used as ITMOs or for CORSIA. For example, Singapore's carbon tax system allows companies to meet obligations with ITMOs that may be based on voluntary methodologies. Similarly, CORSIA—the aviation sector's compliance scheme—can source eligible credits from standards traditionally used in the voluntary space. ART/TREES also offers a pathway aligned with UNFCCC guidance for seller countries to monetize the results of their jurisdictional REDD+ programs and has requirements for providing eligible units to CORSIA, including reporting corresponding adjustments to the UNFCCC. In addition, the IETA Article 6 tracker also shows numerous examples of countries having authorized individual projects for Article 6 purposes based on methodologies normally used for voluntary purposes.
- **Article 6 requirements:** With the Paris Agreement Crediting Mechanism - PACM (Article 6.4) coming online, the new standards and methodologies might help shape the definition of "high quality" in the market as a whole, including in the voluntary markets. For example, France announced its commitment to support the use of carbon credits aligned with both IC-VCM's Core Carbon Principles (CCPs) and Article 6.4 methodologies. The EU's Task Force for International Carbon Pricing and Markets Diplomacy is promoting the development of carbon pricing and carbon markets worldwide, including high integrity in **voluntary carbon markets** aligned with Article 6.4 standards. Also, the definition of Mitigation Contribution Units under Article 6.4 reflects the fact that companies might purchase these units to make a contribution to the seller country's NDC targets.

Will corresponding adjustments be required for all voluntary carbon credits?

No. Corresponding adjustments are not universally required for voluntary uses. Since the UNFCCC does not have authority over the voluntary market, the decision is left to national governments, independent carbon standards, and the buyers themselves. While some countries like the Bahamas have mandated corresponding adjustments for all international sales, most governments have not yet taken a position on this. Whether corresponding adjustments become a common market requirement remains an open question—and much depends on how the private sector, especially major voluntary buyers, chooses to approach this issue.

Are carbon credits with a corresponding adjustment higher quality than a credit without it?

Not necessarily. A corresponding adjustment determines how a carbon credit will be *accounted* for. But the quality of a carbon credit depends on the integrity of the underlying project—how emissions are measured, verified, and monitored—not the market in which it is transacted. Project quality varies between and across sectors (See: Figure 16) and there have been both high- and low-quality credits issued in every type of carbon market - including the CDM, where double counting was not even an issue (See: Article 6 supply). A single project could generate units that are used for voluntary purposes, domestic compliance schemes, or authorized for use under Article 6. In each case, the credit is exactly the same, but the surrounding rules and claims differ. This is why standards, compliance systems, and initiatives like CORSIA and Article 6 all develop their own rules to define what counts as a valid carbon unit. As these systems evolve, they have been increasingly converging—but for now, the pathways remain parallel, with overlaps in infrastructure and methodology, but variation in demand, use and governance.

CDM transition: What was decided?

The Clean Development Mechanism, under the Kyoto Protocol, was one of the world's first international carbon finance schemes. It allowed developed countries to invest in emission reduction projects in developing countries to meet their reduction targets under the Kyoto Protocol. These projects generated certified emission reduction (CER) credits, equivalent to one tonne of CO_2e.

Can CDM projects transition to the Article 6.4 Mechanism?

Yes, but the deadline has already passed for most projects: projects must have requested to transition from the CDM to Article 6.4 by the end of 2023 and the transition needs to be concluded by the end of 2025.[107] The exception is afforestation and reforestation projects, which are allowed to request transition until December 2025.[108] Seller countries are expected to exert significant control over the transition process and must apply corresponding adjustments to the units generated by transitioned projects. If approved by the seller country, projects may continue to use the original CDM methodology until the end of the current crediting period or until December 31, 2025 (whichever is earlier). After this date, these projects will have to follow Article 6.4 methodologies.[109] This poses a growing challenge ahead of COP30, as no new Article 6.4 methodologies have been approved as of May 2025, meaning that transitioning projects risk being stranded unless methodologies are finalized in time – an issue that may become a point of negotiations in Belém (COP30).

Nearly 1,400 CDM activities requested to transition into Article 6 and if approved, these projects could issue over 900 million units under Article 6.4 for the 2021-2025 period.[110] While this suggests a theoretical upper limit of close to 1 billion CERs and Article 6.4 credits, actual issuances will likely be much lower because project transitions need to be approved by the seller country – a process which is different from an Article 6 authorization for NDC or other purposes. (See: What is an authorization?) In February of 2025, a cookstove project in Myanmar became the first CDM project to officially transition into Article 6.4.[111] This specific methodology has received criticism and has been rejected by the IC-VCM. New methodologies under the Paris Agreement Crediting Mechanism - PACM (Article 6.4) are expected to meet higher standards of environmental integrity.

Can CERs be used towards NDCs?

Yes, although as of May 2025, no buyer country has explicitly indicated interest in use of CERs for their first NDC. CERs from projects registered (not issued) after 2013 can be used for the first NDC compliance *without* a corresponding adjustment by the seller country.[112] According to the New Climate Institute, between 320 and 341 million CERs could transfer from the CDM with the 2013 registration cut-off. This is a significant decrease compared to almost 4 billion units that could have been transferred without the 2013 cut-off.[113] This was one of the negotiations' "sticking points" for years, over concerns that these pre-2020 units would "flood" the market and not be considered additional. According to the World Bank around 87 million CDM Certified Emission Reductions (CERs) could be issued for pre-2020 emission reductions, which could be used by countries to achieve their first NDCs. It is important to consider that CERs used toward 1st NDC are not considered ITMOs. ITMOs by definition are generated in 2021 or later, whereas eligible CERs are from 2013-2020.

When will the CDM be over?

The official end-date of the CDM has not yet been agreed. This has significant implications for the financing of the Article 6 mechanism infrastructure and operationalization, as the UNFCCC Secretariat may need to use money from the CDM Trust Fund to run the new mechanism before becoming self-funding. It is expected that this issue may take the stage among carbon market negotiators in the UNFCCC process at COP30.

OMGE and SOP: What discounts and fees apply to Article 6?

What are the various discounts and fees in Article 6 and who pays for them? There are two: Share of Proceeds (SOP) and Overall Mitigation of Global Emissions (OMGE). Both SOP and OMGE are **required** for all Article 6.4 issuances but are only **encouraged** for Article 6.2 trades "on a voluntary basis". However, some countries may require the use of OMGE and SOP as part of their Article 6.2 bilateral deals (e.g. Switzerland and Singapore). One important nuance is that both SOP and OMGE are due at issuance by the seller country, not at transfer. As a result, the burden of these fees and discounts falls on the seller country, which will likely try to pass on the cost to buyers. At COP29, it was decided that Least Developed Countries (LDC) and Small Islands Developing States (SIDS) are now exempt from paying Share of Proceeds, a move aimed at reducing financial burdens for vulnerable nations and increasing their access to markets. Despite this exemption, LDCs and SIDs retain the option to contribute voluntarily if they wish.

- **SOP is applied as both a volume of issued units and a monetary contribution ($):** For all units issued under Article 6.4, a levy of 5% **of the volume of issued carbon units** will be transferred to a new account established in 2021 within the Adaptation Fund. This requirement is similar to what happened under the Kyoto Protocol, where 2% of CERs issued for a CDM project activity would go to the Adaptation Fund to be sold by the Fund's Trust, which is the World Bank. At COP27, it was clarified that the 5% cancellation applies to all Article 6.4 units, including Article 6.4 Mitigation Contributions (See: Terminology Box 2), which are not authorized by the seller country. The **monetary contribution** was defined by the Supervisory Body and approved at COP27 as a set of 5 different fees whose level depends on the project size and other factors (See Table 1). These fees are used to pay administrative expenses.
- **OMGE is an automatic cancellation in volume (not $):** For all Article 6.4 issuances, 2% of the units will not be eligible for sale. Instead, they will be redirected to a **cancellation account** that the Supervisory Body will set up. This is intended to increase ambition by ensuring a net reduction in emissions, rather than just 1-to-1 offsetting of CO_2. At COP27, it was clarified that the 2% cancellation applies to all Article 6.4 units, including Article 6.4 Mitigation Contributions, which are not authorized by the seller country. (See: Terminology Box 2)

Table 1: OMGE and SOP

Name	Destination and purpose	Type	Values
SOP	Adaptation Fund (for all activities)*	Automatic transfer of issued volume	**5%** of Article 6.4 units at issuance, including MCUs[114]
	Adaptation Fund (for specific activities)	$	**3%** of the issuance fee paid for each request for issuance of Article 6.4 units and transferred annually to the Adaptation Fund.[115]
	Supervisory Body for Administrative expenses	$	Set of **5 different fees** charged for registration, issuance, renewal, inclusion of CPAs, and approval of a post-registration change.[116] The Supervisory Body defined the levels for each fee, which have been approved at COP 27.[117]
OMGE	Cancellation account to increase ambition	Automatic cancellation of issued volume	Minimum **2%** of the issued Article 6.4 units.[118]

*Not mandated for those in Least Developed Countries (LDC) and Small Islands Developing States (SIDS)

Notes

1 For case studies about how countries are developing their domestic frameworks, see TNC's Article 6 Implementation Report.
2 Decision 4/CMA.6, Paragraph 7-9
3 Decision 4/CMA.6, Paragraph 6
4 Decision 2/CMA.3, Annex, Paragraph 30
5 Decision 4/CMA.6, paragraph 53
6 For more details see: Climate Focus, 2025. "Paris Agreement Crediting Mechanism after COP29". Available at: https://climatefocus.com/wp-content/uploads/2025/05/The-Paris-Agreement-Crediting-Mechanism-After-COP29_FINAL.pdf
7 Decision 4/CMA.6, paragraph 24
8 Decision 5/CMA.6, Paragraph 12
9 Decision 5/CMA.6, Paragraph 13
10 See report of the 5th meeting of the Supervisory Body, Agenda item 3.3, 8b. Available at: https://unfccc.int/documents/628263
11 Decision 5/CMA.6, Paragraph 21
12 Decision 3/CMA.3, Annex, Paragraph 73
13 World Bank, 2024. "State and Trends of Carbon Pricing 2024. Washington, DC: World Bank". DOI: 10.1596/978-1-4648-2127-1. License: Creative Commons Attribution CC BY 3.0 IGO. Available at: https://openknowledge.worldbank.org/server/api/core/bitstreams/253e6cdd-9631-4db2-8cc5-1d013956de15/content
14 Decision 4/CMA.6, paragraph 7
15 The first reports on expert reviews were published in May 2025 for the cooperative approaches between Switzerland and Ghana, Switzerland and Thailand, and Switzerland and Vanuatu.
16 Decision 3/CMA.3, paragraph 73(d)
17 Decision 3/CMA.3, paragraph 73(d)
18 Decision 2/CMA.3, paragraph 14 and Decision 3/CMA.3, paragraph 10.
19 This topic was mandate by Decision 2/CMA.3, paragraph 3 (b)
20 Carbon Pulse, 2024. "Dozens of airlines scoop up CORSIA credits "in the low $20s" at special auction-sources" Available at: https://carbon-pulse.com/352689/
21 Decision 2.CMA.3, Annex, paragraph 1 (b)
22 Decision 2.CMA.3, Annex, paragraph 1 (g)
23 Decision 7/CMA.4, Annex, paragraph 29 (b)
24 For the purposes of this paper, we define **non-market approaches** as international cooperation between countries without the expectation of trading carbon credits.
25 World Bank, 2021. "Lessons from creating mitigation outcomes". Available at: https://blogs.worldbank.org/en/climatechange/lessons-creating-mitigation-outcomes
26 Decision 2.CMA.3, Annex, paragraph 1 (b)
27 Decision 2.CMA.3, Annex, paragraph 1 (g)
28 Decision 7/CMA.4, Annex, paragraph 29 (b)
29 Decision 5/CMA.6, Paragraph 12
30 OECD/EIA, 2022. "The birth of an ITMO: Authorisation under Article 6 of the Paris Agreement". Available at: https://www.oecd-ilibrary.org/docserver/3d175652-en.pdf?expires=1669744163&id=id&accname=guest&checksum=7EC7B35BC4E-C376F5710F63D3234C8E7
31 Decision 4/CMA.6, paragraph 6
32 Decision 4/CMA.6, paragraph 7-9
33 Decision 4/CMA.6, paragraph 3. This is not new and was originally agreed upon at COP26. However, the COP29 decision acknowledges these three types of authorizations, providing more clarity to this issue.
34 Decision 2/CMA.3, Annex, paragraph 14
35 Decision 3/CMA.3 Annex, paragraph 75d
36 Decision 7/CMA.4, Annex, paragraph 29 (b)
37 Decision 2/CMA.3 Annex, paragraph 33
38 Decision 2/CMA.3 Annex, paragraph 25-28
39 Decision 2/CMA.3, Annex, paragraph 18 (h)
40 The first reports on expert reviews were published in May 2025 for the cooperative approaches between Switzerland and Ghana, Switzerland and Thailand, and Switzerland and Vanuatu.
41 Decision 20/CMA.1, Annex, paragraph 22 (b)
42 According to Article 6.2 rules, ITMOs are authorized by a participating Party (singular). Therefore, while countries are free to design cooperative approaches where eligible units must be authorized by both the selling and buying country (bilateral authorization), unilateral authorizations are permitted by the Article 6 rulebook. See Decision 2/CMA.3, Annex, paragraph 1f. See also IETA's Article 6 Policy Briefs – Authorization.
43 REDD+ results refer to the measured and verified greenhouse gas emission reductions or removals achieved through efforts to reduce deforestation, forest degradation, and enhance forest carbon stocks.
44 See IETA's Article 6 Implementation Tracker for a list of countries that have issued unilateral authorizations
45 Carbon Pulse, 2024. "Dozens of airlines scoop up CORSIA credits "in the low $20s" at special auction-sources". Available at: https://carbon-pulse.com/352689/
46 UNFCCC, 2025. "Key Rules Agreed for Credible Climate Project Crediting under UN Carbon Market". Available at: https://unfccc.int/news/key-rules-agreed-for-credible-climate-project-crediting-under-un-carbon-market
47 This section brings what we consider to be the key elements for Article 6.4 operationalization. For additional elements, see: Climate Focus, 2025. "Paris Agreement Crediting Mechanism after COP29". Available at: https://climatefocus.com/wp-content/uploads/2025/05/The-Paris-Agreement-Crediting-Mechanism-After-COP29_FINAL.pdf
48 Decision 3/CMA.3, paragraph 73(d)
49 More information about this project is available at: https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/BQ0WHAOXJLK25SCPVF4GZ97ER6MD1N/view?_gl=1*czddeh*_ga*NDg0OTIxODU2LjE3MDcxMzExNzE.*_ga_7ZZWT-14N79*MTc0MDEyNzA0Mi4zNjguMS4xNzQwMTI3OTg5LjAuMC4w. See also: Calyx Global. "Analyzing the first credits transitioning to the Article 6.4 Paris Agreement Crediting Mechanism". Available at: https://calyxglobal.com/research-hub/research/analyzing-the-first-credits-transitioning-to-the-article-64-paris-agreement-crediting-mechanism/
50 For more details about the SD Tool, see: UNEP, 2024. "News on the adoption of the SD Tool under Article 6.4". Available at: https://unepccc.org/wp-content/uploads/2024/10/20241010-news-and-technical-analysis-on-adoption-of-a64-sd-tool.pdf
51 Although this timeline is not clear in the SBM 2025 workplan, the 2025 MEP workplan states that the MEP will make a recommendation to the SBM for consideration in its 17th meeting in August 2025. The MEP workplan is available at https://unfccc.int/sites/default/files/resource/A6.4-SBM015-A02.pdf
52 See Decision 4/CMA.6, paragraph 49 and Decision 6/CMA.6, paragraph 16.
53 **Japan:** Japan has stated in its NDC that it "aims to contribute to international emission reductions and removals at the level of a cumulative total of approximately 100 million tCO_2 by fiscal year 2030 through public-private collaborations. Japan will appropriately count the acquired credits to achieve its NDC." Japan, 2025. "Nationally Determined Contribution (NDC)". Available at: https://unfccc.int/sites/default/files/2025-02/Japans%202035-2040%20NDC.pdf#page=12
Singapore: Singapore has stated in its BTR that the country "estimates the use of 2.51 Mt CO_2 eq per annum of ITMOs over the NDC implementation period (i.e., from 2021 to 2030)". This estimate translates to a cumulative demand of 25.1Mt CO_2e by 2030. Government of Singapore, 2024. Biennial Transparency Report. Available at: https://unfccc.int/sites/default/files/resource/Singapore%20BTR1%202024.pdf#page=28
South Korea: South Korea's Presidential Commission on Carbon Neutrality and Green Growth set reduction targets by sector in accordance with its 2030 NDC goal to reduce GHG emissions by 40 percent from 2018 levels. The commission clarifies the target for the "international reduction" sector is 37.5 Mt CO_2e in reductions by 2030. Available at: https://www.2050cnc.go.kr/eng/contents/view?contentsNo=67&menuLevel=2&menuNo=119
Switzerland: The country has not included ITMO demand estimates in its NDC or BTR, but The KliK Foundation estimates a "maximum of 20.3 million ITMOs in the period 2025 to 2030" for motor fuel companies to offset emissions as part of the Swiss Law. Klik Foundation, 2023. "Annual Report 2023". Available at: https://a.storyblok.com/f/246794/x/99b0a3320c/annual-report_2023.pdf
Sweden: Sweden has not announced demand for ITMOs in its NDC nor related documents. The estimate presented in Figure 10 was taken from the report "Road to a Climate-Positive Future" (in Swedish: "Vägen till en klimatpositiv framtid"), by the Climate Policy Roadmap Commission for the Swedish Government at the beginning of the current NDC compliance period (2020). The commission's recommendations in Section 13 include the following on use of international ERs: (translated via DeepL): "The Government should establish a program to implement efforts for international emission reductions under Article 6 of the Paris Agreement during the 2020s, with the Swedish Energy Agency as the responsible authority. The program should be designed to achieve at least 20 million units from emission reduction measures implemented in other countries." Available at: https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2020/01/sou-20204/
Norway: Background: In November 2022, Norway submitted its updated NDC, committing to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels. Norway intends to achieve this target in cooperation with the EU, building on a 2019 agreement between Norway, Iceland, and the EU to align efforts under EU climate legislation. This cooperation involves participation in three main pillars: (1) the Effort Sharing Regulation (ESR), which sets national reduction targets for sectors like transport, agriculture, and buildings; (2) the EU Emissions Trading System (ETS), and (3) LULUCF regulations, which establish targets for net carbon removals from land use and forestry (Norway's Climate Status and Action Plan, referenced in the BTR).

However, compliance with these three EU pillars does not automatically ensure that Norway meets its own NDC, due to differences in baseline years (e.g., 1990 for the NDC vs. 2005 for ESR/ETS), and the way ITMO transfers are treated under EU rules versus Article 6 of the Paris Agreement. Norway's first BTR clarifies that target fulfillment will occur within the Article 6 framework and the EU cooperation structure. Final accounting of ITMOs will depend on future arrangements with the EU and Iceland, particularly in relation to Norway's participation in the ETS. Since Norwegian entities are expected to remain net purchasers of EU allowances over the NDC period, as per the BTR, this will result in a net acquisition of ITMOs that will be applied toward Norway's NDC. The BTR notes that the final accounting of Norway's NDC under Article 6.2 will depend on future arrangements with the EU and Iceland—especially as they relate to Norway's participation in the EU Emissions Trading System (EU ETS) (BTR, p. 38).
The BTR further states that if EU mechanisms prove insufficient, Norway intends to use ITMOs from countries outside the EEA to close any remaining gap.
The government has earmarked NOK 8.2 billion under the Global Emission Reduction Initiative for purchasing ITMOs from third countries. However, the precise conditions under which such credits would be applied remain ambiguous, particularly since Norway's NDC is framed as being fulfilled "through EU rules." The 16.1 Mt figure therefore signals a potential shortfall—but not a definitive ITMO demand—in light of unresolved regulatory and procedural uncertainties. An agreement is signed with Uzbekistan through the World Bank program Transitional Carbon Asset Facility (TCAF), and initial MoUs or agreements are developed with Benin, Indonesia, Jordan, Morocco, Senegal and Zambia for cooperation facilitated by the Global Green Growth Institute. **Estimation:** With this context, the BTR provides an estimate of a 21.9 $MtCO_2e$ cumulative gap in the Effort Sharing Regulation (ESR) sectors between 2021–2030, nder a 50% Effort Sharing target for 2030. (Table 2.5). It further mentions that Norway has access to 5.8 million EU allowances (EUAs) eligible for conversion toward ESR compliance (Box 2.1, pp. 41). Remaining shortfall if no additional transfers: ≈16.1 $MtCO_2e$. Subtracting the 5.8 Mt EUAs from the ~21.9 Mt gap leaves roughly 16 $MtCO_2e$ as the potential unmet gap for 2021–2030 if no further international credits are obtained from the EU. In other words, about 16.1 $MtCO_2e$ would still need to be abated or offset by other means in order to hit the 2030 target, absent new transfers.This estimate provides a working estimate of Norway's anticipated emissions shortfall in ESR sectors if no additional transfers from EU countries occur. We have not found estimates of a similar quantified shortfall for ETS sectors in the BTR. Assumptions: While the 16.1 Mt figure is used as a proxy for potential ITMO demand, some aspects lack clarity from the public information we have reviewed. For once, the EU rules do not permit the use of third-country Article 6 ITMOs for ESR compliance, meaning this gap can only be closed through domestic action, banking, or transfers within the EU/EEA. Yet, Norway's BTR does reserve the option to use Article 6.2 ITMOs from outside the EU/EEA if cooperation with the EU proves insufficient to meet its overall 55% reduction target.

Liechtenstein: The country signaled intent to purchase 35 kt CO_2e.

CORSIA: This demand estimate is taken from the "Interim Assessments in Support of the 2025 CORSIA Periodic Review" at the 234th ICAO Council Session from March 2025. ICAO's "Updated Forward Looking CORSIA Analyses, Estimation of Offsetting Requirements" Mid CAEP/13 scenario estimates a cumulative demand between 2024 to 2030 of 466 $MtCO_2e$. Estimates available at: https://www.icao.int/environmental-protection/CORSIA/Documents/CAEP_Inputs%20to%202025%20CORSIA%20periodic%20review%20(C234).pdf

54 Carbon Pulse, 2024. Dozens of airlines scoop up CORSIA credits in the low $20s" at special auction-sources. Available at: https://carbon-pulse.com/352689/

55 IETA and A6IP, 2024. "Business Pulse Survey". Available at: https://ieta.b-cdn.net/wp-content/uploads/2024/11/IETA_Resources_Report_A6-Pulse-Survey.V3.pdf

56 IETA and A6IP, 2024. "Business Pulse Survey". Available at: https://ieta.b-cdn.net/wp-content/uploads/2024/11/IETA_Resources_Report_A6-Pulse-Survey.V3.pdf

57 Switzerland, 2025. "Switzerland's Nationally Determined Contribution." Available at: https://unfccc.int/sites/default/files/2025-01/Switzerland%20second%20NDC%202031-2035.pdf

58 Carbon Pulse, 2025. "Article 6 Portal." Available at: https://carbon-pulse.com/article-6-portal/

59 KliK is an association of fossil motor fuel importers in the transport sector. Fossil fuels used for heating for example are not covered under the compensation obligation stipulated under the Swiss CO_2 law.

60 Japan, 2025. "Japan's Nationally Determined Contribution." Available at: https://unfccc.int/sites/default/files/2025-02/Japans%202035-2040%20NDC.pdf

61 Japan Ministry of Foreign Affairs, 2024. "Joint Crediting Mechanism." Available at: https://www.mofa.go.jp/ic/ch/page1we_000105.html

62 Carbon Pulse, 2025. "Article 6 Portal." Available at: https://carbon-pulse.com/article-6-portal/

63 **Japan:** Japan has stated in its NDC that it "aims to contribute to international emission reductions and removals at the level of a cumulative total of approximately 100 million tCO_2 by fiscal year 2030 through public-private collaborations. Japan will appropriately count the acquired credits to achieve its NDC." Japan, 2025. "Nationally Determined Contribution (NDC)". Available at: https://unfccc.int/sites/default/files/2025-02/Japans%202035-2040%20NDC.pdf#page=12

64 Defined as per decision 897 in 2015-2016 by the Norwegian Parliament. Government of Norway, 2024. "Norway Launches Initiative to Cut Emissions in Developing Countries." Available at: https://www.regjeringen.no/en/aktuelt/norway-launches-initiative-to-cut-emissions-in-developing-countries/id3075202/?expand=factbox3075208

65 Government of Norway, 2024. Norwegian Carbon Credit Procurement Program. Available at: https://www.regjeringen.no/en/topics/climate-and-environment/climate/norwegian-carbon-credit-procurement-program/id2415405/?expand=factbox3023299

66 GGGI, 2023. "Norway and Morocco Sign MoU: Launching bilateral cooperation under Article 6 at COP28." Available at: https://gggi.org/norway-and-morocco-sign-mou-launching-bilateral-cooperation-under-article-6-at-cop28/

67 Data from South Pole. Norway confirms in its recent BTR that "...in the event that the cooperation with the EU does not lead to a full realization of the (NDC) target, Norway intends to use ITMOs acquired from countries outside the European Economic Area (EEA)". It further outlines that "...Norway has established a purchase program for ITMOs from developing countries that could be used in such an event. The program is allotted NOK 8.2 billion through the state budget." A volume-based demand estimate is not provided as public information. Based on the information in Norway's BTR on the anticipated emissions gap in the 2021-2030 period and an indication that Norway may resort to using foreign credits if ITMO transfers between EU and Norway are not feasible, we arrive at this demand estimate, which also keeps in mind that the BTR states that Norway may use 5.8 M existing EU Allowances (EUAs) towards reducing the mitigation gap.

68 Government of Sweden, 2024. Biennial Transparency Report. Available at: https://unfccc.int/sites/default/files/resource/Sweden%27s%20first%20Biennial%20Transparency%20Report.pdf

69 Swedish Energy Agency, 2024. " Partnerships under the Paris Agreement." Available at: https://www.energimyndigheten.se/en/cooperation/swedens-program-for-international-climate-initiatives/paris-agreement/partnerships-under-the-paris-agreement/

70 Please note the estimate is taken from the report "Road to a Climate-Positive Future" (in Swedish: "Vägen till en klimatpositiv framtid"), prepared by the Climate Policy Roadmap Commission for the Swedish Government at the beginning of the current NDC compliance period (2020). The commission's recommendations in Section 13 include the following on use of foreign ERs: (translated via DeepL): "The Government should establish a program to implement efforts for international emission reductions under Article 6 of the Paris Agreement during the 2020s, with the Swedish Energy Agency as the responsible authority. The program should be designed to achieve at least 20 million units from emission reduction measures implemented in other countries." This is the most recent estimate of ITMO demand from the Swedish government.

71 Government of Singapore. "How SG supports carbon markets." Available at: https://www.carbonmarkets-cooperation.gov.sg/our-art6-cooperation/how-sg-supports-carbon-markets/#:~:text=From%202024%20onwards%2C%20carbon%20tax,under%20Singapore's%20carbon%20tax%20system.

72 Verra, 2024. "Singapore, Gold Standard and Verra Release Initial Recommendations Outlining Progress in the Development of a Carbon Crediting Protocol to Implement Article 6.2". Available at: https://verra.org/singapore-gold-standard-and-verra-article-6-crediting-protocol/

73 Government of Singapore, 2024. Biennial Transparency Report (BTR). Available at: https://unfccc.int/sites/default/files/resource/Singapore%20BTR1%202024.pdf

74 Presidential Commission on Carbon Neutrality and Green Growth. 2030 NDC Reduction targets by sector. Available at: https://www.2050cnc.go.kr/eng/contents/view?contentsNo=67&menuLevel=2&menuNo=119

75 See more details of the Korea's model in: Republic of Korea, 2025. Biennial Transparency Report (BTR). Available at: https://unfccc.int/sites/default/files/resource/The%20Republic%20of%20Koreas%20First%20Biennial%20Transparency%20Report%20and%20Fifth%20National%20Communication.pdf#page=165

76 South Korea's Presidential Commission on Carbon Neutrality and Green Growth set reduction targets by sector in accordance with its 2030 NDC goal to reduce GHG emissions by 40 percent from 2018 levels. The commission clarifies the target for the "international reduction" sector is 37.5 Mt CO2e in reductions by 2030. Available at: https://www.2050cnc.go.kr/eng/contents/view?contentsNo=67&menuLevel=2&menuNo=119

77 The Paris Agreement has not defined or mandated countries to classify their targets as conditional or unconditional, but many countries did so. **Conditional NDC targets** are the climate actions that a country commits to achieving only if it receives external support, such as international finance, technology transfer, or capacity-building. They usually represent more ambitious goals that go beyond what the country could achieve on its own. In contrast, **unconditional NDC targets** depend on international support. Given the lack of definition of climate finance and the usual requirement of national co-financing, it may be unclear how to distinguish conditional and unconditional targets. However, the corresponding adjustment requirement applies to both conditional and unconditional targets.

78 For a detailed explanation of Article 6 fees and levies, see Climate Finance Innovators, Climate Focus, Perspectives Climate Group, and AEE, 2024. "Setting an article 6 levy structure in Senegal A practical guide to administrative fees and benefit sharing levies under Article 6 of the Paris Agreement". Available at: https://climatefinanceinnovators.com/wp-content/uploads/2024/04/CFI_FeeStructureSenegal_ModalitiesAndRates_2024.pdf

79 Decision 2/CMA.3, Annex, paragraph 1(b)

80 Article 6 requires that all ITMOs must have a corresponding adjustment and must be "real, verified, and additional". They may include both emission reductions and removals, and must refer to mitigation achieved from 2021 onward. In addition, there are specific requirements around reporting and tracking.

81 For example, the Korea's BTR states that the Korea's Forest Service plans to establish a bilateral cooperation system for national and/or sub-national REDD+ under Article 6.2 and REDD+ activities under Article 6.4 based on the UNFCCC Warsaw REDD+ Framework and utilize ITMOs from REDD+ for achieving 2030 NDC. To systematically implement this, operational standards for REDD+ and a master plan (2025-2029) will be formulated. Republic of Korea, 2025. Biennial Transparency Report (BTR). Available at: https://unfccc.int/sites/default/files/resource/The%20Republic%20of%20Koreas%20First%20Biennial%20Transparency%20Report%20and%20Fifth%20National%20Communication.pdf

82 Decision 2/CMA.3, Annex, paragraph 1(b)

83 Carbon Pulse, 2024. "Dozens of airlines scoop up CORSIA credits "in the low $20s" at special auction-sources" Available at: https://carbon-pulse.com/352689/

84 Supervisory Body, Methodology Standard, Paragraph 87: For those activities falling under the scope of Article 5, paragraph 2, of the Paris Agreement, mechanism methodologies shall require, in addition to all relevant requirements adopted by the Supervisory Body3, demonstration that the activity is included in all the elements required of the host Party as per decision 1/CP.16, paragraph 71, noting this is consistent with the application of the approaches described in paragraph 85 (c) and (e). See also, the Leakage Standard, paragraphs 15 and 16

85 The Nature Conservancy & Conservation International, 2024. "REDD+ & Article 6 – COP29 and Beyond". Available at: https://nature4climate.org/wp-content/uploads/2024/11/REDD-Plus-Article-6-Explainer-1.pdf

86 In its 10th meeting, the Supervisory Body mandated the Methodological Expert Panel (MEP) to develop a concept note on "large scale crediting programmes", which may include specific guidance for jurisdictional REDD+ programs. See reference on the Supervisory Body 2024 annual report: https://unfccc.int/documents/641722. As of May 2025, the MEP workplan indicates this will take place in 2026: https://unfccc.int/sites/default/files/resource/A6.4-SBM015-A02.pdf

87 See the Supervisory Body Standard on Methodologies, paragraphs, 85 and 87 and Leakage, paragraphs 15 and 16. For REDD+ requirements, see also Decision 1/CP.16, paragraph 71.

88 See more information about international REDD+ standards and sources of finance at: https://internationalreddstandards.org/

89 Paris Agreement, Article 5.2: Parties are encouraged to take action to implement and support, including through results-based payments, the existing framework as set out in related guidance and decisions already agreed under the Convention for: policy approaches and positive incentives for activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries; and alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests, while reaffirming the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches.

90 Supervisory Body, Methodology Standard, Paragraph 87 and Leakage Standard, paragraphs 15 and 16.

91 Decision 14/CP.19 paragraph 15, laid out a process for countries to apply for market-based programs by meeting existing modality and verification requirements.

92 According to an IETA survey, 83% of respondents indicated that they would be willing to pay higher or even much higher than average market rates for correspondingly adjusted ITMOs, as well as for non-adjusted 6.4 mitigation contribution units (MCUs). See: https://ieta.b-cdn.net/wp-content/uploads/2024/11/IETA_Resources_Report_A6-Pulse-Survey.V3.pdf

93 This decision was taken at the Bonn UNFCCC Climate Change Conference in June 2024 (SB60). See the Report of the Subsidiary Body for Scientific and Technological Advice (SBSTA), Sixtieth session, paragraphs 134 and 144. Available at: https://unfccc.int/sites/default/files/resource/sbsta2024_07E.pdf

94 The COP26 decisions for Articles 6.2 and 6.4 state that further work will be done to consider whether "emission avoidance" could be eligible. Decision 2/CMA.3, cover text, para 3c and Decision 3/CMA.3, cover text, para 7h

95 IPCC, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 541-562. https://doi.org/10.1017/9781009157940.008.

96 Carbon Pulse, 2025. "Feature: Avoided emissions confusion hangs over international carbon markets." Available at: https://carbon-pulse.com/361095/

97 See related articles here and here.

98 See also: Table VI-2, Methodology Categorization Other Sectors

99 See Supervisory Body, Methodology Standard, paragraph 85 (d)

100 In addition to these two new rules, all activities, including REDD+ activities, will only be credited when there is a positive change in GHG storage (carbon needs to increase overtime) and this change is directly related to "anthropogenic" action, such as a policy, for example. See Supervisory Body, Removals Standard, paragraph 31.

101 Decision 1/CP.16, paragraph 71

102 Supervisory Body, Leakage Standard, paragraph 15.

103 Leakage Standard, paragraph 16

104 "Upscaling implementation is defined as "implementing activities at a higher level (e.g: sectoral, subnational, or national). See Methodology Standard, paragraph 85(e)

105 Nature-based Solutions (NbS) is another common term which can be used to refer to the land use sector. For some, NCS refers to only mitigation measures, while NbS refers to both mitigation and adaptation. For simplicity, we will use nature as a general term. See more information at: https://www.nature.org/content/dam/tnc/nature/en/documents/ TNC_Natural_Climate_Solutions_Handbook.pdf

106 Decision 1/CP.16, paragraph 71

107 Decision 3/CMA.3, paragraph 73

108 Decision 5/CMA.6, paragraph 21

109 Decision 3/CMA.3, paragraph 73(d)

110 United Nations Environment Programme, "CDM Pipeline," February 5, 2024, updated March 27, 2024, https://unepccc.org/cdm-ji-pipeline/

111 Calyx Global, 2025. "Analyzing the first credits transitioning to the Article 6.4 Paris Agreement Crediting Mechanism". Available at: https://calyxglobal.com/research-hub/research/analyzing-the-first-credits-transitioning-to-the-article-64-paris-agreement-crediting-mechanism/

112 Decision 3/CMA.3, paragraph 75(a) and (d).

113 New Climate Institute, 2020. "CDM Supply Potential for Emissions Reductions up to the end of 2020". Available at: https://newclimate.org/sites/default/files/2020/11/CDM-supply-potential-for-emission-reductions-up-to-the-end-of-2020_Nov2020.pdf

114 Decision 3/CMA.3, paragraph 67(a)

115 Decision 7/CMA.4, paragraph 15

116 Decision 7/CMA.4, paragraph 14

117 Decision 7/CMA.4, Annex I, Chapter V

118 Decision 3/CMA.3, paragraph 59 and 69; Decision 7/CMA.4, paragraph 40