IMPLEMENTING ARTICLE 6 IN THE EU

Examination of existing and expected EU legislation in preparation for the piloting of Article 6 between Sweden and Switzerland

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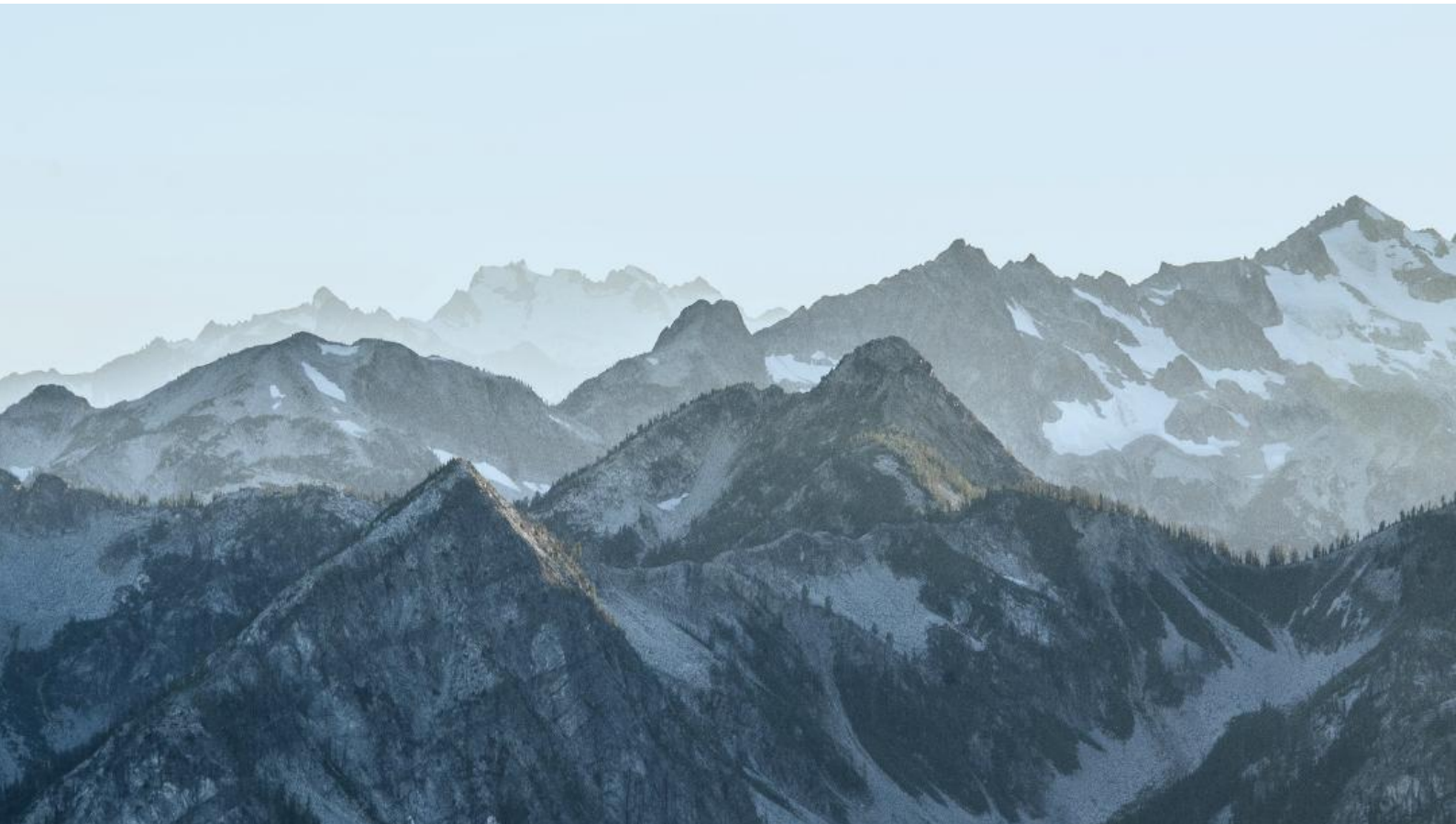

1. About the report

This report was commissioned by the Swedish Energy Agency and prepared by Hanna-Mari Ahonen, Cinthya Vega and Kaja Weldner from Perspectives Climate Group, Jürg Füssler and Quirin Oberpriller from INFRAS, Lambert Schneider from Oeko-Institut and Moritz von Unger from Atlas Environmental Law Advisory. This report reflects the situation as of June 2024, with some minor revisions made in May 2025. The authors would like to thank Worlfram Jörss from Oeko-Institut for information on EU reporting and accounting of removals from bio-CCS and the SEA for their insightful and constructive comments. The content does not, however, necessarily reflect the Swedish Energy Agency's views, opinions, attitudes or recommendations.

2. Summary

This report examines the opportunities and limitations for EU Member States (MSs) to engage in Internationally Transferred Mitigation Outcomes (ITMO) cooperation, in the context of relevant existing and expected EU legislation. Specific attention is paid to removals from bio-CCS.

The EU Climate Law sets EU targets for 2030 and 2050 and a process for setting a target for 2040, the Emissions Trading System (ETS) Directive sets an EU-wide cap for emissions from energy and industry and the Effort-Sharing Regulation (ESR) and the Land Use, Land Use Change and Forestry (LULUCF) Regulation set targets for these sectors at the MS level. These targets are key means to deliver the joint Nationally Determined Contribution (NDC) of the EU and its MSs. Besides EU legislation relating to targets, other relevant existing and planned legislation includes the Governance and Registry Regulations, on tracking and reporting progress towards the EU targets, and the Carbon Removals and Carbon Farming (CRCF) Regulation, on certifying removals within the EU. There is also existing and planned EU legislation relating to corporate climate action, reporting and green claims, which could potentially influence private demand for ITMOs.

Removals from the capture and long-term storage of biogenic carbon dioxide (bio-CCS) cannot currently be used to achieve the ETS, ESR or LULUCF targets. By contrast, the EU NDC covers all emissions and removals within the EU, which means that also removals from bio-CCS may count towards the EU NDC. The potential future role of removals in achieving EU targets will be considered as part of the ongoing process of setting the EU 2040 target. The potential integration of removals from bio-CCS into the EU ETS will be considered as part of its next review in 2026.

In the context of existing and planned EU legislation, EU MSs are able acquire and use ITMOs for Other International Mitigation Purposes (OIMP), such as towards national targets or voluntary offsetting, but they cannot use ITMOs towards the EU NDC or host ITMO-generating activities. This is because, according to the EU NDC, the EU Climate Law and other relevant legislation, the EU's climate targets must be achieved domestically, without ITMOs from other countries. Furthermore, existing EU legislation does not include provisions for hosting ITMO-generating activities in the EU. The EU cooperates with some non-EU MSs, and will account for this cooperation consistently with Article 6.2 guidance. This will require the EU to set up new legislation, e.g. to establish EU-level arrangements for authorisations, recording and tracking ITMO transactions and reporting ITMO-relevant information. The status and timeline of this work is currently unclear.

Looking forward, if the EU were to decide to allow the use of ITMOs towards the EU NDC and the ESR, LULUCF and/or ETS targets in the future, this would require a new EU NDC, new EU legislation and amendments to existing legislation, including the EU Climate Law. If the EU were to decide to enable individual MSs to host ITMO-generating activities, this would also require new legislation and amendments to existing legislation.

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Abbreviations

AEA	Annual Emission Allocation
AEF	Agreed Electronic Format
BEECS	Bioenergy with Carbon Capture Storage
Bio-CCS	Capture and long-term storage of biogenic carbon
BTR	Biennial Transparency Report
CARP	Centralized Accounting and Reporting Platform
CION	European Commission
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CO_2	Carbon Dioxide
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CRCF	Carbon Removal and Carbon Farming
CSRD	Corporate Sustainability Reporting Directive
DACCS	Direct Air Capture with Carbon Storage
ECGTD	Empowering Consumers for a Green Transition Directive
EEA	European Economic Area
ESR	Effort Sharing Regulation
ESRS	European Sustainability Reporting Standards
ETS	Emissions Trading System
EU	European Union
EUA	EU Allowance
GCD	Green Claims Directive
GHG	Greenhouse Gas
ITMO	Internationally Transferred Mitigation Outcome
LULUCF	Land Use, Land Use Change and Forestry
MoU	Memorandum of Understanding
MS	Member State
$MtCO_2$	Million tonne of carbon dioxide
NDC	Nationally Determined Contributions
OIMP	Other International Mitigation Purposes
UNFCCC	United Nations Framework Convention on Climate Change

3. Introduction

3.1. Paris Agreement

The Paris Agreement sets a long-term goal of limiting global warming to 1.5 degrees Celsius by achieving a balance between global greenhouse gas (GHG) emissions and removals around 2050. However, the current Nationally Determined Contributions (NDCs) submitted by countries fall significantly short of this global goal. Therefore, there is an urgent need to intensify efforts and raise ambition beyond the existing NDCs. Achieving global net zero emissions requires accelerating both emission reductions and removals. Alongside deep and rapid emission cuts, removals are needed to slow down the accumulation of GHGs in the atmosphere and counterbalance the hard-to-abate emissions that are likely to persist beyond 2050. An emerging activity type that generates removals is the capture and long-term storage of biogenic carbon dioxide (bio-CCS, see Box 2).

Article 6.2 of the Paris Agreement recognises that countries can engage in cooperation involving internationally transferred mitigation outcomes (ITMOs) to enable higher ambition in their climate actions. ITMOs are defined as real, additional and verified emission reductions or removals authorised by a participating country. Participating countries must implement ITMO cooperation in line with the international guidance provided under Article 6.2 (hereafter referred to as Article 6.2 guidance[1]) and they are responsible for ensuring environmental integrity and transparency, applying robust accounting and promoting sustainable development. This requires national arrangements, which may be complemented with bi- or multilateral agreements with partner countries.

A key feature of ITMOs is that the underlying mitigation outcomes can be used exclusively by the buyer, thus avoiding double counting with the host country. Article 6.2 guidance requires avoiding double counting between NDCs as well as between the NDC of the host Party and the use of ITMOs towards international mitigation purposes, such as CORSIA compliance. The Article 6.2 guidance further specifies that only ITMOs can be used for achieving NDCs and achieving international mitigation purposes. Article 6.2 guidance also enables – but does not require – the use of ITMOs for other purposes, such as voluntary offsetting. According to international good practice, voluntary offsetting should be based on mitigation outcomes that are not double counted (see e.g. Ahonen et al. 2022; Laine et al. 2023; ISO 2023). Entities that make voluntary offsetting claims can avoid double counting by using ITMOs.

[1] The Article 6.2 guidance refers to Article 6 of the Paris Agreement, Decision 2/CMA.3(Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement) and other relevant decisions by the Paris Agreement's decision-making body (Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement, CMA).

3.2. EU

The European Union (EU) and its Member States (MSs) have a single joint NDC under the Paris Agreement (hereafter referred to as the "EU NDC"), whereby the EU and its MSs are committed to a legally binding economy-wide target of a domestic reduction of net GHG emissions by at least 55% compared to 1990 by 2030. In this context, "domestic" refers to achieving the target without the use of international credits (EU 2023a).

The EU NDC identifies EU legislations to deliver this target, including the Effort-Sharing Regulation (ESR), the Land Use, Land Use Change and Forestry (LULUCF) Regulation and the Emissions Trading System (ETS) Directive (Figure 1). The ESR and LULUCF Regulation set national targets for each EU MS, while the ETS Directive sets an EU-wide cap for emissions covered by the ETS. The ESR and ETS focus on emissions and pathways to reduce them. Removals, by contrast – including from bio-CCS – cannot currently be used to achieve the respective targets, except for a limited possibility to use net removals from the LULUCF sector towards the ESR targets[2]. "The LULUCF Regulation sets targets for MSs for land-based emissions and removals achieved in the LULUCF sector.. Bio-CCS is not accounted for under the LULUCF Regulation. By contrast, the EU NDC covers all emissions and removals within the EU, which means that also removals from bio-CCS may count towards the EU NDC. The integration of removals from bio-CCS into the EU ETS will be considered as part of its next review in 2026.

In addition to EU MSs, Norway, Iceland and Liechtenstein as well as certain installations in Northern Ireland participate in the EU ETS, and the EU and Swiss ETSs are linked through a linking agreement (EU 2023b, BAFU 2023).[3] According to the EU NDC, "the EU will account for its cooperation through the EU ETS with these and any other Parties in a manner consistent with the guidance adopted [under the Paris Agreement]" (EU 2023a, p. 20). This cooperation will involve ITMOs and requires the EU to implement EU arrangements for cooperation under Article 6.2, including ITMO authorisation and tracking.

[2] The exception is a limited 'LULUCF flexibility' permitted to MSs under the ESR. Article 7 of the ESR allows (on certain conditions) MSs that exceed their ESR sector emissions in a given year to offset these excess emissions with any net removals included in the scope of the LULUCF Regulation that are in excess of the MS's LULUCF requirements.

[3] Non-EU countries that participate in the EU ETS apply all the requirements of the EU ETS while non-EU countries that are linked with the EU ETS apply the requirements specified in the linking agreement.

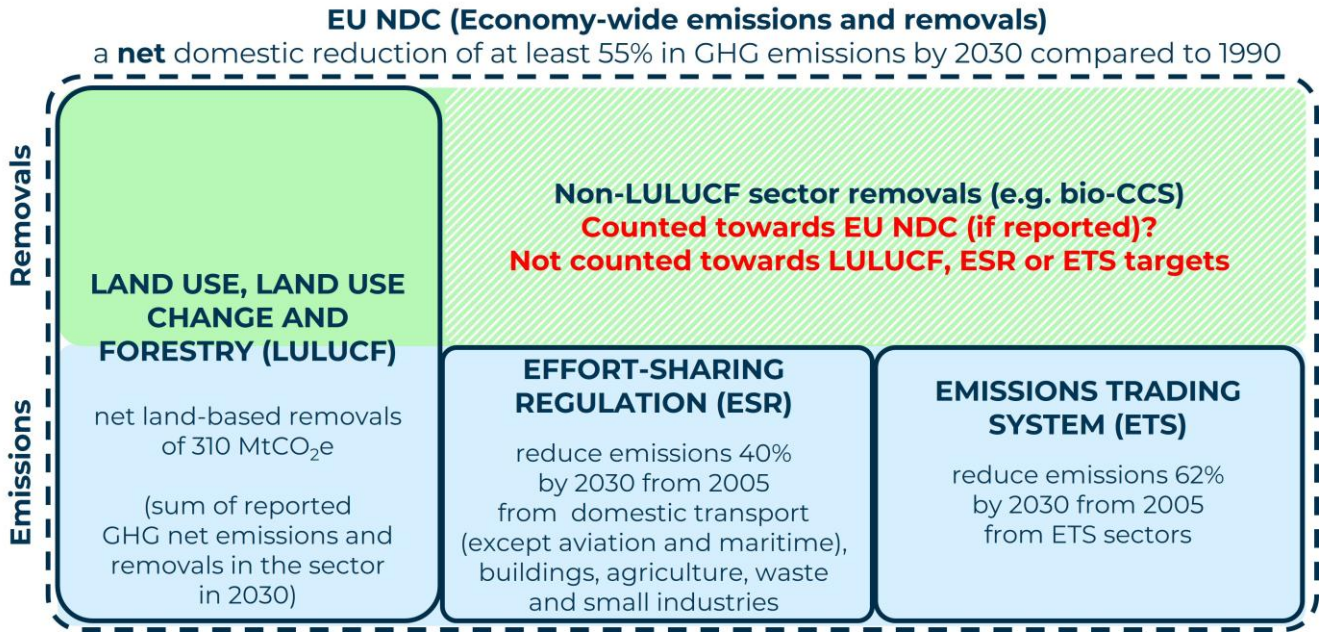

Figure 1. EU NDC and LULUCF, ESR and ETS targets

The EU Climate Law (EU 2021) sets out the Union's climate neutrality target for 2050[4] and its net domestic reduction target for 2030 (aligned with the EU's NDC) while also outlining a process for setting the 2040 target. This process was launched in early 2024, with the publication of the European Commission's assessment for a 2040 EU climate target, recommending a 90% reduction of the EU's net GHG emissions by 2040 relative to 1990.

As of June 2024, the Paris Agreement's requirements, including for participating in ITMO cooperation under Article 6, are not yet fully incorporated into EU legislation, and efforts to align EU legislation with the Paris Agreement are ongoing. After the European elections in June 2024, the new European Parliament, together with the Council and the new European Commission will continue this work.

[4] Note that climate neutrality targets are not identical in terms of scope or definitions. The EU climate neutrality target is defined as a balance between economy-wide emissions and removals within the EU by 2050 (EU 2018). The Nordic countries' climate neutrality goals also differ and are thus not readily comparable. For example, Finland aims to be "carbon neutral" by 2035 at the latest, "where its greenhouse gas emissions are at most equal to the removals and that the removals continue to increase and emissions decrease after that as well" (Finnish MoE 2022). Finnish emissions from the ESR and ETS sectors should decrease by at least 60% and 80% compared to 1990 levels by 2030 and 2040, respectively, and the remaining emissions should be balanced with removals. By contrast, Sweden's national target to achieve "zero net" GHG emissions by 2045 covers only the ESR sector. It requires emissions to be reduced by at least 85% compared to 1990 levels and any remaining emissions to be balanced with supplementary measures, including removals from bio-CCS, increased uptake of carbon by forests as the result of additional measures and verified emission reductions carried out outside the Swedish borders (Naturvårdsverket n.d.).

Box 1. EU legislation: A small glossary

Types of EU legislation

- Regulation: Binding legislative act that must be applied in its entirety across the EU
- Directive: Goal that EU MSs much achieve through their own laws
- Decision: Binding on those to whom it is addressed (e.g. an EU country or an individual company) and directly applicable
- Recommendation: Not binding and does not impose legal obligations
- Opinion: Non-binding statement issued by the main EU institutions, such as the Commission, Council and Parliament

Legislative procedure

The ordinary legislative procedure ("co-decision") starts with the Commission preparing a legislative proposal, which the European Parliament and the Council of the EU (consisting of EU MSs) examine in parallel. After the Parliament has adopted their position, the Council may decide to adopt the Parliament's position (in which case the legislation is adopted) or a different position. Trilogues are informal negotiations between the Parliament and Council, mediated by the Commission, aiming to reach a provisional agreement on a joint text. To be adopted, this agreement requires a formal approval by the Parliament and the Council.

Implementing and delegated acts

Directives and regulations can grant the Commission the power to adopt implementing and delegating acts.

- **Implementing acts:** Non-legislative acts, often of an administrative or technical nature; focused on uniform implementation across the EU. The European Parliament and the Council are kept informed during the preparation of implementing acts and have a right of scrutiny. Implementing acts are usually adopted by the Commission under the control of committees consisting of MSs' representatives. Only under the examination procedure may member states block, under certain conditions, the adoption of an implementing act.
- **Delegated acts:** Non-legislative acts that serve to amend or supplement the non-essential elements of the legislation. The Commission consults experts from the MSs before adopting delegated acts; The Parliament or the Council may revoke the delegation of power to the Commission. A delegated act adopted by the Commission can only enter into force if no objection is raised by the Council or the Parliament.

Sources: Council of the European Union (2024b), EU (n.d. a), EU (n.d. b)

3.3. Sweden

Sweden, as part of the EU, shares a joint NDC under the Paris Agreement. In addition to its commitments under the EU NDC, Sweden has set more ambitious national climate targets for 2030, 2040 and 2045 for its ESR sector. Supplementary measures, including removals from Sweden and ITMOs (based on emission reductions or removals) generated outside Sweden's borders, can be used towards these targets (Naturvårdsverket n.d.). In this context, Sweden is developing a scheme to support bio-CCS activities (see Box 2). This scheme aims to facilitate the emerging market for carbon removal credits while exploring options to avoid double claiming.

In December 2023, Sweden and Switzerland concluded a Memorandum of Understanding (MoU) on piloting the international transfer of carbon removals. This pilot project seeks to test the rules and requirements of Article 6, specifically for transferring removals between an EU MS and a non-MS that has a connection to the EU ETS.[5]

Box 2. Removals from the capture and long-term storage of biogenic carbon (bio-CCS)

The capture and long-term storage of biogenic carbon (bio-CCS) involves capturing carbon dioxide (CO_2) from biomass combustion or biogenic carbon from industrial sources and transferring it to long-term storages. The EU defines permanent carbon removals as "any practice or process that [...] captures and stores atmospheric or biogenic carbon for several centuries, including permanently chemically bound carbon in products, and which is not combined with Enhanced Hydrocarbon Recovery." (EU 2024a, p. 29). Bio-CCS applications span various sectors, including waste management (solid and liquid), pulp and paper production, energy, cement (biomass co-firing), ethanol production, and other industrial biomass processing.

The capture and long-term storage of carbon from biomass combustion is an emerging technology, with some of the first demonstration plants nearing implementation in Europe. The CCS component results in permanent removals (also referred to as "negative emissions") at an additional costs for the activity owner without generating extra financial benefits.[6] Currently, the only potential revenue sources for removals from bio-CCS are public subsidies and revenue from the sale of carbon credits through (voluntary or compliance) carbon markets.

In the Nordic region, the potential for removals from bio-CCS is significant but unevenly distributed. Most large point sources of biogenic CO_2 emissions, such as those from biomass-based heat and power generation, pulp and paper production, and biogenic waste incineration, are located in Finland and Sweden. In contrast, the storage potential is mainly offshore in Norway and Denmark, as well as in Iceland's basaltic rock deposits.

[5] Link to MoU and press release

[6] With the exception of the case where the captured CO_2 is utilised for enhanced oil recovery.

3.4. About this study

This study aims to provide clear understanding of the status of integrating Art 6 provisions into EU legislation and what Sweden can do now regarding its ITMO pilot with Switzerland, in light of the existing and planned EU legislation[7].

Specifically, it aims to identify opportunities for EU MSs to engage in ITMO cooperation, based on current and expected EU legislation. It also aims to explore the role of Article 6 in the link between the EU ETS and the Swiss ETS.

This report is structured as follows: Chapter 2 introduces the key elements relevant to ITMO cooperation. Chapter 3 provides an overview of existing and expected EU legislation and processes that may be relevant for ITMO cooperation, respectively. Chapter 4 identifies the current opportunities for EU MSs to engage in ITMO cooperation and Chapter 5 identifies gaps and potential ways forward to enable ITMO cooperation. Chapter 6 concludes.

4. Key elements for ITMO cooperation

4.1. Responsibilities for participating in ITMO cooperation

Countries that participate in ITMO cooperation need to implement the cooperation in line with Article 6.2 guidance[8]. They must be Parties to the Paris Agreement with a NDC, and they need to submit the latest national inventory report and establish national arrangements for authorising and tracking ITMOs. Their participation should support the achievement of their NDC and any long-term climate strategies and align with the long-term goals of the Paris Agreement.

Participating countries are responsible for ensuring environmental integrity and transparency, applying robust accounting and promoting sustainable development consistently with Article 6.2 guidance. The Article 6.2 guidance defines ITMOs as real, additional and verified emission reductions or removals generated from 2021 onward, authorised by a participating Party. The guidance includes requirements such as setting baselines below business-as-usual, addressing leakage and non-permanence in full, and minimising negative environmental and social impacts in their ITMO cooperation. Participating countries can also have additional national criteria for ITMOs. The international and national requirements are operationalised through national arrangements for managing, tracking and reporting the key elements of ITMO cooperation, including the authorisation, transfer and use of ITMOs, and applying corresponding adjustments in its emissions

[7] In this report, EU legislation refers to regulations and directives as well as any delegated or implementing acts.

[8] Article 6.2 guidance refers to Articles 6.2 and 6.3 of the Paris Agreement, Decision 2/CMA.3 (Guidance on cooperative approaches referred to in Article 6, paragraph 2 of the Paris Agreement) and any other relevant decisions by the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA)

balance to avoid double counting (see Figure 2). Participating Parties are required to submit Initial Reports, annual information and regular information on their ITMO cooperation. An Article 6 technical expert review checks the consistency of the reported information.

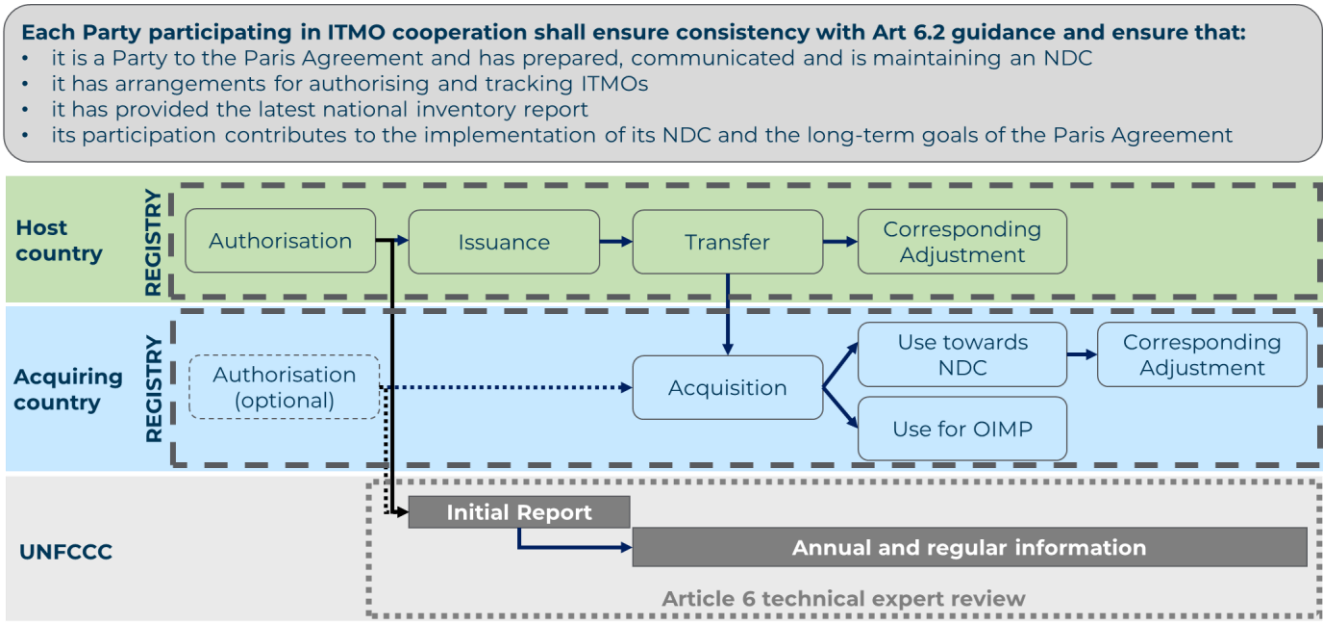

Figure 2. Key elements of ITMO cooperation

4.2. Authorisation, first transfer and corresponding adjustments

Authorisation is a key step in making a mitigation outcome into an ITMO. ITMOs can be authorised for use towards an NDC, use for international mitigation purposes (referred to as international mitigation purposes), and use for other purposes. An example of an international mitigation purposes is the use of ITMOs to for compliance under CORSIA, and examples of use of other purposes are the use for voluntary offsetting[9] or national targets that are not NDCs. International mitigation purposes and other purposes are jointly referred to as Other International Mitigation Purposes (OIMP).

For all use cases, a host country authorisation is always required, while authorisation by the acquiring (buyer) country does not seem mandatory according to the Article 6.2 guidance. Through the authorisation, the host country indicates that it: (1) deems the mitigation outcomes to fulfil

[9] Note that there is no explicit reference to voluntary offsetting in Article 6.2 guidance; it fits under « other purposes » and all the provisions relating to "other purposes" also apply for the use of ITMOs for voluntary offsetting. Note that the ITMOs purchased by KliK Foundation on behalf of Swiss fossil fuel importers are surrendered to Switzerland for use towards the Swiss NDC, i.e. not towards voluntary offsetting. So although the private sector buys and pays for these ITMOs, Switzerland counts them towards its NDC, thus being the end-user albeit not the “buyer” country.

relevant international and national criteria; and (2) commits to applying corresponding adjustments in its emissions balance.

The first transfer of authorised ITMOs triggers corresponding adjustments by the host country. Host countries are required to apply a corresponding adjustment for all ITMOs that they authorise and first-transfer while other participating countries are only required to apply corresponding adjustments to ITMOs that are used towards their NDC (Figure 3). "First transfer" is defined differently for ITMOs that are authorised for use towards NDCs and for OIMP.

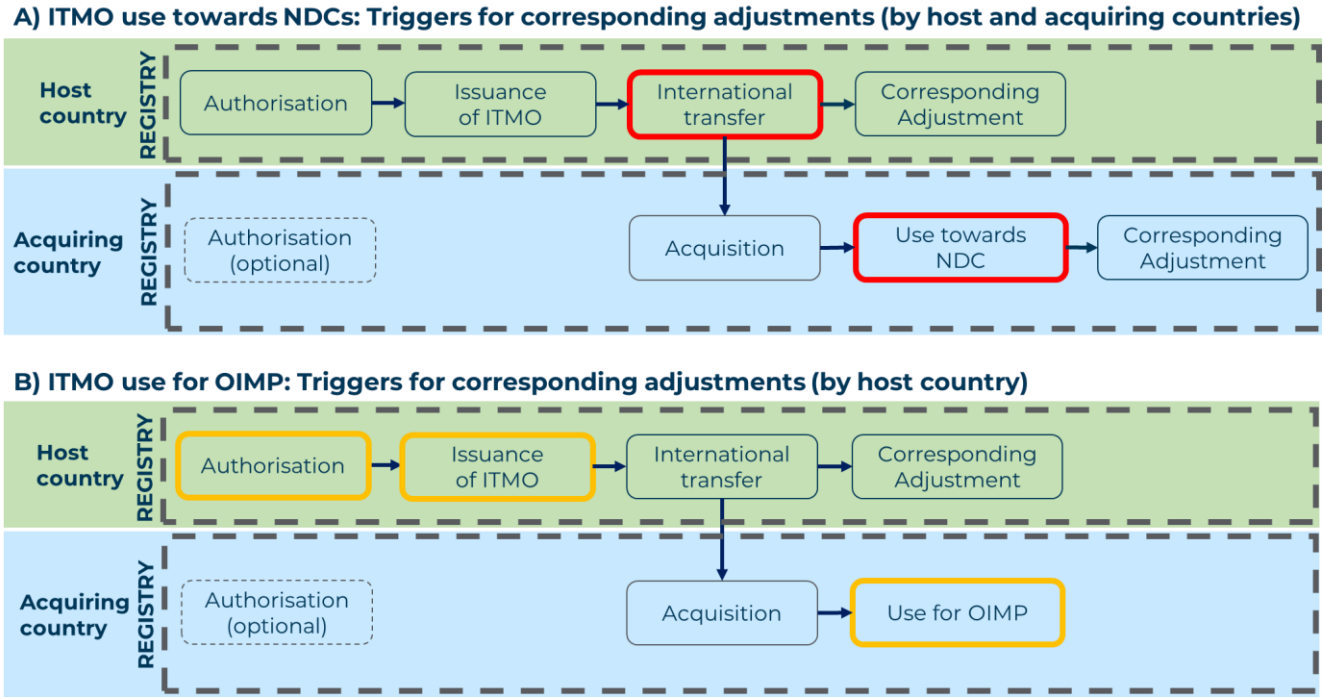

Figure 3. Triggers for corresponding adjustments

In case of ITMOs authorised for use towards NDCs (part A in Figure 3), their first international transfer (i.e., the first time the ITMO is transferred to another country) is defined as "first transfer". Their use towards another country's NDC triggers corresponding adjustments by that country (depicted with red outline in Figure 3). In case of ITMOs authorised for use for OIMP (part B in Figure 3), corresponding adjustments would be done only by the host country. In this case, first transfer could be the point of authorisation, issuance or the use or cancellation of the ITMO, as specified by the host country (depicted with orange outline in Figure 3).[10] Note that ITMOs can be used for OIMP by countries or non-state entities. Even if the acquiring entity is a country, this country does not apply

[10] For example, for ITMOs authorised for OIMP, issuance could refer to the issuance of a mitigation outcome as a carbon credit under a privately governed carbon crediting programmes in its carbon registry, and use could refer to the cancellation of that carbon credit in the registry for voluntary purposes or the surrender of the ITMO for CORSIA compliance.

a corresponding adjustment, since buyer countries apply corresponding adjustments only for ITMOs used towards NDCs.

Corresponding adjustments are a means to avoid double counting and ensure that the mitigation associated with the ITMO is counted only by the buyer towards its NDC or for OIMP. Corresponding adjustments are applied to the emissions and removals from the sectors and GHGs covered by the NDC, resulting in an emissions balance. Host countries apply the corresponding adjustments in the year in which the mitigation outcomes occurred and make an upward adjustment. while end-user countries apply the corresponding adjustments in the year towards which the ITMOs are used and make a downward adjustment. The emissions balance is used to assess the country's progress towards implementing and achieving its NDC. The Article 6.2 guidance provides different options for single- and multi-year NDCs and for NDCs with GHG and non-GHG metrics for the method for applying corresponding adjustments. In this report, we focus on guidance for NDCs measured in GHG metrics, which is the case for EU and its MSs.

Applying corresponding adjustments may be seen as a process whereby the countries (a) record relevant ITMO transactions (first transfer and use towards NDC) in the national registry, then (b) report the transactions as part of their annual information, and then (c) apply corresponding adjustments to emissions and removals covered by its NDC as part of reporting its regular information submitted with the biennial transparency report (BTR).

4.3. Tracking and reporting

The international Article 6.2 guidance requires that participating Parties have, or have access to, a registry "for the purpose of tracking and shall ensure that such registry records, including through unique identifiers, as applicable, authorization, first transfer, transfer, acquisition, use towards NDCs, authorization for use towards other international mitigation purposes, and voluntary cancellation (including for overall mitigation in global emissions, if applicable) […] The secretariat shall implement an international registry for participating Parties that do not have or do not have access to a registry. […] Any Party may request an account in the international registry […] The international registry shall be part of the centralized accounting and reporting platform" (CARP).

Parties participating in ITMO cooperation are required to submit an Initial Report and report annual and regular information.

The Initial Report is to be submitted no later than authorisation of ITMOs from a cooperative approach, or where practical in conjunction with the BTR, and included in CARP. The Initial Report should include, inter alia, information on national arrangements for authorisation and tracking, and the method for applying the corresponding adjustment. For each further cooperative approach, each participating Party shall submit an updated initial report. Note that there is currently no agreed definition for a cooperative approach.

Annual information is to be submitted on an annual basis by no later than 15 April of the following year in an Agreed Electronic Format (AEF)[11] for recording in Article 6 Database. It should include, inter alia, information on authorisation for use towards achievement of NDCs and OIMP, first transfer, transfer, acquisition, holdings, cancellation, voluntary cancellation, voluntary cancellation of mitigation outcomes or ITMOs towards overall mitigation in global emissions, and use towards NDCs; as well as information on the type of OIMP, the using Party or authorised entities, the year of the mitigation, sectors, activity types and unique identifiers.

Regular information is to be reported every two years as an annex to the BTR no later than 31 December of the relevant year. The BTR includes a structured summary to track progress made in implementing and achieving NDCs, including, inter alia, Information on GHG emissions and removals consistent with the coverage of its NDC. In addition, each Party that participates in cooperative approaches that involve the use of ITMOs towards an NDC, or authorises the use of mitigation outcomes for international mitigation purposes other than achievement of its NDC (i.e. international mitigation purposes), shall also provide information in the structured summary consistently with Article 6.2 guidance, including:

- The annual level of anthropogenic emissions by sources and removals by sinks covered by the NDC on an annual basis reported biennially;
- An emissions balance reflecting the level of anthropogenic emissions by sources and removals by sinks covered by its NDC adjusted on the basis of corresponding adjustments undertaken by effecting an addition for internationally transferred mitigation outcomes first-transferred/transferred and a subtraction for internationally transferred mitigation outcomes used/acquired
- Information on how each cooperative approach promotes sustainable development; and ensures environmental integrity and transparency, including in governance; and applies robust accounting to ensure inter alia the avoidance of double counting

In case of ITMOs used by private entities for OIMP, the country whose registry the transaction (authorisation, first-transfer, transfer, use or voluntary cancellation) is recorded includes the information in its annual reporting. This could be the host country, if the ITMO is used without ever leaving the host country's registry, and/or some other country, if the ITMO is transferred from the host country registry to another country's registry before being used for OIMP.

4.4.National considerations

For host countries, authorising and transferring ITMOs means that the underlying mitigation is not counted towards their NDC. Thus, a prudent host country would only authorise ITMOs for mitigation

[11] As of [June] 2024, there is no agreed content for the AEF.

outcomes that are in excess of what is needed to meet its NDC and that is detected in its national inventory within the sectors and GHGs covered by its NDC. Authorising mitigation outcomes that are non-additional, overestimated and/or needed to meet the host country's own climate targets could make it harder for the country to meet its targets. For a detailed discussion on host country strategies for managing over-selling risks, see Spalding-Fecher et al. 2023.

To make informed decisions, the country needs access to reliable and timely information on its progress towards achieving its targets as well as on the environmental integrity of mitigation outcomes, including on additionality, baselines, quantification methods and approach to addressing the risks of non-permanence, leakage and any negative environmental and social impacts. The collection and assessment of this information requires coordination between various government agencies, as well as stakeholders engaged in the generation and assessment of the mitigation outcomes. Furthermore, to apply corresponding adjustments for ITMOs authorised for OIMP in an accurate and timely manner, countries need timely access to information on the first transfer that triggers the corresponding adjustment, which may be specified as the authorisation, issuance, use or cancellation of the ITMO. Relevant information may be recorded in different registries, and timely access to such information may require connections or information sharing between these registries.

5. Relevant existing EU legislation and ongoing and planned developments

5.1. EU targets for 2030, 2040 and 2050

The relevant EU targets are the domestic reduction of net GHG emissions (emissions after deduction of removals) by at least 55 % compared to 1990 levels by 2030 and the EU climate neutrality target for 2050[12]. These are enshrined in the EU Climate Law and delivered by the targets included in the ETS Directive, Effort Sharing Regulation and LULUCF Regulation. The EU Climate Law also includes a process for setting the 2040 target. This process was launched in early 2024, with the publication of the European Commission's assessment for a 2040 EU climate target, recommending a 90% reduction of the EU's net GHG emissions by 2040 relative to 1990.

[12] According to Recital 20 of the EU Climate Law, the EU climate neutrality objective is defined as achieving a balance between economy-wide emissions and removals domestically by 2050. "That objective should encompass Union-wide greenhouse gas emissions and removals regulated in Union law. It should be possible to address such emissions and removals in the context of the review of the relevant climate and energy legislation. Sinks include natural and technological solutions, as reported in the Union's greenhouse gas inventories to the UNFCCC".

Table 1. Overview of Article 6 opportunities for EU MSs with existing EU legislation

Relevant existing and planned EU legislation
Adopted
European Climate Law - Regulation (EU) 2021/1119
ETS Directive - Directive 2003/87/EC - *Last amended by Regulation (EU) 2024/795 of 29 Feb 2024*
Linking Agreement between EU and Switzerland - Document 02017A1207(01)-20231115 - *Last amended by Decision No. 1/2023 of the Joint Committee established by the agreement between the EU and the Swiss Confederation on the linking of their GHG ETSs of 15 November 2023*
Effort Sharing Regulation – Regulation (EU) 2018/842 - *Last amended by Regulation (EU) 2023/857 of 19 Apr 2023*
LULUCF Regulation - Regulation (EU) 2018/841 - *Last amended by Regulation (EU) 2023/839 of 19 Apr 2023*
Governance Regulation – Regulation (EU) 2018/1999 - *Last amended by Directive (EU) 2023/2413 of 18 Oct 2023* - *Incl. Commission Implementing Regulation updating the templates for Member States to report their climate action data (incl. Annexes) (EC 2024d)*
Registry Regulation - Commission Delegated Regulation (EU) 2019/1122 - *Last amended by Commission Delegated Regulation (EU) 2023/2904 of 25 Oct 2023*
Empowering Consumers for a Green Transition Directive - Directive (EU) 2024/825 - *Adopted 28 Feb 2024*
Corporate Sustainability Reporting Directive - Directive (EU) 2022/2464 - *Adopted 14 Dec 2022* - *Incl. Commission Delegated Regulation (EU) 2023/2772 of 31 July 2023 supplementing Directive 2013/34/EU [Accounting Directive] as regards sustainability reporting standards*
Corporate Sustainability Due Diligence Directive - *- Adopted 24 May 2024; final act signed 13 Jun 2024; awaiting publication in Official Journal*
Provisionally agreed/under negotiation
CRCF Regulation – procedure 2022/0394 (COD) - *Latest version: provisional agreement of 10 April 2024*
Green Claims Directive (ongoing) - *Commission proposal – COM(2023) 166 final of 22 Mar 2023* - *Parliament position of 12 Mar 2024 (EP 2024)* - *Council position of 10 Jun 2024 (Council of the European Union 2024a)*
Expected
Proposal for amending Registry Regulation on EU reporting for Paris Agreement (timeline unclear)
Proposal for new EU legislation on a Paris Registry (timeline unclear)
Commission Implementing Acts on Green Claims Directive (Proposal by Commission by 31 Dec 2027, according to the Council position of 10 Jun 2024)
Amendment of ETS Directive (proposal by Commission by 31 Jul 2026, according to ETS Directive)

5.2. EU NDC and potential use of Article 6

The current EU NDC explicitly states that the EU target for 2030 is to be achieved domestically, i.e. without international credits. However, the EU cooperates with some non-MSs in ways that could involve the transfer of mitigation outcomes across EU borders.

The EU NDC states that the EU will account for its cooperation through the EU ETS with Iceland, Liechtenstein, Norway and Switzerland in a manner consistent with relevant guidance under the Paris Agreement, i.e. the Article 6.2 guidance (Hynes & Schneider 2023). The Linking Agreement between EU and Switzerland could serve as a cooperative approach in accordance with Article 6.2.. Pursuant to Article 4.5 of the Linking Agreement, "Parties [to the Linking Agreement] shall account for net flows of allowances in accordance with UNFCCC principles and rules for accounting following their entry into force. The mechanism shall be determined in an Annex to this Agreement adopted by Decision of the Joint Committee." Work on this Decision is currently ongoing.

Besides the ETS sector, the EU also cooperates with Norway and Iceland in the ESR and LULUCF sectors, whereby Norway and Iceland will have the same obligations and flexibilities as EU MSs (EC 2019). The EU expects possible transfers under Article 6.2 between EU and Norway and Iceland also through this cooperation. The legal provisions to implement transfers under Article 6.2 are not yet in place. Relevant legal provisions would include the incorporation of revised ESR and LULUCF provisions in the European Economic Area (EEA) agreement and the revision of Registry Regulation, which will be discussed in the Climate Change Expert Group (registry administrators) and the Climate Change Committee with MSs.

5.3. Emissions Trading System Directive

The ETS Directive regulates the EU ETS, which caps the total GHG emissions from around 10,000 installations in the energy sector and manufacturing industry in all EU MSs as well as Iceland, Liechtenstein and Norway. The EU ETS also covers aircraft operators flying within the EU and departing to Switzerland and the United Kingdom and, from 2024, shipping. EU Allowances (EUAs) are issued against the cap, with each EUA representing the right to emit one tCO_2e. Installations covered by the EU ETS must surrender enough EUAs to fully cover their verified annual GHG emissions. EUAs can be bought in auctions and from other installations, and some installations also receive a proportion of them for free. The EUA price is determined in the markets based on supply and demand. ETS compliance and EUA transactions are tracked in the Union Registry.

Since 2020, the "Agreement between the European Union and the Swiss Confederation on the linking of their greenhouse gas emissions trading systems" linked the EU ETS and the Swiss ETS and determined that "emission allowances that can be used for compliance under the ETS of one Party shall be recognised for compliance under the ETS of the other Party.". CO_2 emissions from biofuels, bioliquids and biomass fuels are currently covered under the EU ETS, but they are accounted for as

zero, if sustainability criteria are met. Any removals resulting from the capture and long-term storage of these emissions through bio-CCS activities cannot currently be used to comply with obligations under the ETS Directive. Their integration into the EU ETS will be considered as part of its next review in 2026. If the EU decided to integrate removals from bio-CCS into the ETS, this would extend the financial incentive of the EUA price to generating removals from bio-CCS as an alternative to reducing emissions in ETS-covered installations. The integration would also enable the international transfer of allowances associated with removals to the Swiss ETS under the Linking Agreement, and vice versa, if also Switzerland decided to integrate removals from bio-CCS in the Swiss ETS.

5.4. Land Use, Land Use Change and Forestry Regulation

The LULUCF Regulation sets targets for MSs for land-based emissions and removals in the LULUCF sector, with a different accounting approach for 2021-2025 and 2026-2030. For now, it is the only sector in the EU that has a removal target, of achieving 310 $MtCO_2e$ of net land-based removals by 2030 in the LULUCF sector. The Commission confirmed that removals from bio-CCS activities are not accounted for under the LULUCF Regulation. The LULUCF Regulation includes some flexibilities, For example, if a MS's total emissions exceed total removals in the LULUCF sector, the MS can cover the deficit by deleting excess Annual Emission Allocations (see below) from its ESR sector or with excess net removals transferred from other MSs. MSs will submit to the Commission a compliance report by 15 March 2027 and 2032 for the 2021-2025- and 2026-2030 periods, respectively, containing the balance of total emissions and total removals for the relevant period on each of the land accounting categories. These reports will be reviewed by Commission. The Commission will adopt delegated acts for recording the quantity of emissions and removals in each MS, exercising flexibilities and assessing compliance in the Union Registry. The LULUCF Regulation tasks the Commission to assess, inter alia, international progress on the Article 6 rules, and, where relevant, proposals to amend this Regulation, in particular to avoid double counting and apply corresponding adjustments. This assessment is due no later than six months after the first global stocktake agreed under the Paris Agreement, i.e. by mid-2024[13]. The Regulation also tasks the Commission to submit, within 12 months after the entry into force of the Carbon Removal and Carbon Farming Regulation (see below), a report on the possible benefits and trade-offs of including sustainably sourced long-lived carbon storage products that have a net-positive carbon sequestration effect in the scope of the LULUCF Regulation.

5.5. Effort Sharing Regulation

The ESR sets annual emissions levels for each MS (hereafter referred to as the “ESR target”) for emissions that are not covered by the LULUCF or ETS sectors, and excluding civil aviation. Removals

[13] As of 5 July 2024, to the authors' knowledge, this assessment had not been published.

(e.g. from bio-CCS) cannot currently be counted when assessing whether MSs are achieving their ESR targets. Each MS receives allowances, called Annual Emission Allocations (AEAs), equivalent to its ESR target. Each AEA represents the permit to emit one tCO_2e. A quantity of AEAs corresponding to the ESR target are transferred into the MS's ESR Compliance Account in the Union Registry. The relevant greenhouse gas emissions data are recorded and a balance is calculated in the Union Registry. MSs shall ensure that their GHG emissions do not exceed the annual limit, taking into account certain flexibilities. For example, MSs can bank and borrow AEAs across years, trade AEAs with other MSs and use Land Mitigation Units (net removals from LULUCF in excess of the MS's LULUCF target). Certain MSs can also choose to cancel some EUAs to comply with their ESR target. If, in the future, the EU decided to allow removals from bio-CCS to be used to comply with the ESR targets, they may be internationally transferred from MSs to Norway and Iceland, and vice versa, through the flexibilities.

The Commission will carry out compliance checks in 2027 and 2032. Every five years, the Commission will report on the operation of the ESR, including the balance between supply and demand for AEAs, as well as on the contribution of the ESR targets to the EU targets and the goals of the Paris Agreement. The report will also identify any need for additional EU policies and measures for post-2030.

5.6. Governance Regulation

The Governance Regulation provides for MS- and EU-level reporting of progress towards the ETS, ESR and LULUCF targets. Compliance with these targets is tracked in the Union Registry which is operational and governed by the Registry Regulation.

The Governance Regulation also provides for reporting under the Paris Agreement, including on progress towards the EU NDC, and mandates the Commission to amend the Regulation and adopt relevant delegated and implementing acts. The implementation of Paris reporting is currently under work, and the Commission is currently preparing a proposal for amendments to the Governance Regulation. Furthermore, the Governance Regulation requires the EU and its MSs to establish registries to accurately account for the EU NDC and ITMOs. This would need to include functions to record and track ITMO authorisations, transfers, acquisitions, use and cancellations.

5.7. Registry Regulation

The Registry Regulation governs the Union Registry, which is a platform for recording and tracking transactions related to the ETS, ESR and LULUCF targets. The Union Registry records information from EU ETS installations and MSs that serves as the basis for assessing progress towards and achievement of ETS, ESR and LULUCF targets, including statements of compliance.

5.8. Carbon Removal and Carbon Farming Regulation

The provisionally agreed Carbon Removal and Carbon Farming (CRCF) Regulation, which establishes a framework for certifying three types of removal units[14] as well as soil emission reduction units within the EU, does not currently envisage their authorisation as ITMOs. Instead, the certified units should contribute to the EU NDC and climate neutrality target. According to good practice, EU removal certificates would be suitable for use for contribution claims[15] and not suitable for credible offsetting claims or for authorisation as ITMOs. The CRCF Regulation includes provisions for regular review, taking into account, inter alia, the relevant developments concerning the rules and guidelines related to the implementation of Article 6. The Regulation also requests the Commission to assess, and where appropriate present a legislative proposal, on the need for additional requirements to align the Regulation with the rules and guidance of Article 6 and with best practices in the voluntary carbon markets. That assessment should compare methodological requirements, including baselines, monitoring period, activity period, additionality, leakage, non-permanence and liability, as well as address requirements related to authorisation and corresponding adjustments. It represents an opportunity to align EU requirements with international best practices, including avoiding double counting by using mitigation outcomes authorised as ITMOs for voluntary offsetting claims. This could drive voluntary demand for ITMOs.

5.9. Empowering Consumers for a Green Transition and Green Claims Directives

Regarding the potential voluntary use of ITMOs by companies for marketing claims, the EU is currently in the process of elaborating requirements for making climate claims based on the voluntary use of carbon credits. The Empowering Consumers for a Green Transition Directive (ECGTD) was adopted in February 2024, and the complementary Green Claims Directive (GCD) is currently under development. The ECGTD bans product-level claims based on the offsetting of greenhouse gas emissions that a product (good or service) has a neutral, reduced, or positive impact on the environment in terms of greenhouse gas emissions. For organisation-level claims, the GCD is expected to include general requirements for substantiating and communicating claims based on the use of carbon credits. The Parliament and the Council adopted their positions on the GCD in March and June 2024, respectively. Both positions include the possibility for organisations to use carbon credits for offsetting or contribution claims. Regarding offsetting, the European Parliament's position seems to limit offsetting to organisations with net-zero targets, and only for "residual"

[14] Permanent carbon removal units, carbon storage in product units and carbon farming sequestration units (representing temporary carbon removal from carbon farming activities)

[15] Contribution claims refer to non-offsetting claims about contributing to collective (e.g. national, EU or global) mitigation targets.

emissions[16]in the target year while the Council's position allows for offsetting also on the way to net zero. Both positions seem to limit offsetting to organisations that have a science-aligned target[17].

Based on these positions, it remains to be seen whether and to what extent the GCD will align with international best practice for voluntary offsetting with regard to avoiding double counting of the same mitigation outcomes for voluntary offsetting and towards NDCs. The Parliament's position seems to allow for double counting of removals certified under the CRCF towards both for voluntary offsetting and the EU climate targets, contrary to international best practice. By contrast, the Council's position does not allow double counting but it also does no explicitly require avoiding it. It includes a mandate to the Commission to develop further rules by the end of 2027, including to elaborate harmonised requirements for offsetting and contribution claims, taking into account "relevant international standards" and, "where necessary, authorisations and corresponding adjustments" related to the implementation of Article 6 (Council of the EU 2024). These rules represent an opportunity to align EU requirements with international best practices, including avoiding double counting, thereby potentially driving voluntary demand for ITMOs. If these rules would allow double counting, contrary to international best practice, this could significantly undermine the voluntary demand for ITMOs authorised for use for other purposes. These rules could potentially provide clarity also on whether and how removals certified under the EU CRCF framework should be used for offsetting and contribution claims.

5.10. Corporate Sustainability Reporting Directive

The Corporate Sustainability Reporting Directive (CSRD), adopted in December 2022, introduced significant new reporting requirements for all large and listed companies[18], including information on ensuring that the companies' "business model and strategies are compatible with the transition to a sustainable economy and with the limiting of global warming to 1,5 °C in line with the Paris Agreement [...] and the objective of achieving climate neutrality by 2050 as established in [the EU Climate Law]".

[16] The Parliament's position mandates the Commission to adopt, by [12 months from the date of entry into force of the Directive] a delegated act "to establish a method for defining residual emissions, based on an emission reduction pathway compatible with limiting global warming to 1.5°C taking into account technological feasibility and in consultation with the European Scientific Advisory Board on Climate Change".

[17] This is implied by the reference to "residual" emissions in the Parliament's position, and explicitly stated in the Council's position (Article 3.1a(e)): in case of "an offset claim, claiming that a trader has a neutral, reduced or positive impact on the environment in terms of greenhouse gas emissions, the assessment shall as well demonstrate that the trader has set a net zero target as set out in [...] Directive 2013/34/EU as regards sustainability reporting standards, and is on a decarbonisation pathway to meet the target".

[18] Except listed micro-enterprises

In July 2023, the Commission adopted a delegated regulation on the European Sustainability Reporting Standards (ESRS) that complements the CSRD by introducing detailed requirements for, inter alia:

- disclosing the company's gross GHG emissions and emission reduction targets[19] for Scopes 1, 2 and 3 (excluding any removals or carbon credit use);
- explaining how these targets are science-based and compatible with limiting global warming to 1.5°C; and
- disclosing the amount of any removals and storage resulting from projects within its operations or value chain, as well as the amount of any emission reductions or removals from projects outside its value chain that it has financed or intends to finance through the purchase of carbon credits.

The ESRS's disclosure requirements on removals and purchased carbon credits (E1-7) include additional requirements relating to net-zero targets or public climate neutrality claims involving the use of carbon credits. In case the company has disclosed a net-zero target in addition to its emission reduction targets, "it shall explain the scope, methodologies and frameworks applies and how the residual GHG emissions (after approximately 90-95% of GHG emission reduction with the possibility for justified sectoral variations in line with a recognised sectoral decarbonisation pathway) are intended to be neutralised by, for example, GHG removals in its own operations and upstream and downstream value chain". In case the company has made public claims of GHG neutrality that involve the use of carbon credits, it shall explain "whether and how these claims are accompanied by GHG emission reduction targets [...,] whether and how these claims and the reliance on carbon credits neither impede nor reduce the achievement of its GHG emission reduction targets, or, if applicable, its net zero target; and the credibility and integrity of the carbon credits used, including by reference to recognised quality standards. The ESRS defines recognised quality standards for carbon credits as “quality standards for carbon credits that are verifiable by independent third parties, make requirements and project reports publicly available and at a minimum ensure additionality, permanence, avoidance of double counting and provide rules for calculation, monitoring, and verification of the project’s GHG emissions and removals”.

5.11. Corporate Sustainability Due Diligence Directive

The Corporate Sustainability Due Diligence Directive, adopted in May 2024, echoes the requirements of the CSRD and the related ESRS. It introduces obligations to large companies regarding adverse impacts of their activities on human rights and environmental protection, including activities of their subsidiaries and business partners along their value chain. With regard

[19] Target values should be set at least for 2030 and, if available, for 2050. From 2030, target values should be set for every 5-year period thereafter.

to climate action, the Directive requires MSs to ensure that covered companies adopt and put into effect a transition plan that "aims to ensure, through best efforts, that the business model and strategy of the company are compatible with the transition to a sustainable economy and with the limiting of global warming to 1.5 °C in line with the Paris Agreement and the objective of achieving climate neutrality as established in [the EU Climate Law], including its intermediate and 2050 climate neutrality targets, and where relevant, the exposure of the company to coal-, oil- and gas-related activities". Member States shall ensure that this transition plan is updated every 12 months and contains a description of the progress the company has made towards achieving the targets.

5.12. Current EU reporting relevant to Article 6

In the EU context, the NDC is set at the EU level. Consequently, many Article 6 elements, including national arrangements, corresponding adjustments and the emissions balance, need to be decided and implemented at the EU level. The Initial Report and BTR include information relating to these elements that can only be decided and reported at the EU level. Thus, it is clear that EU-level Article 6 reporting is needed.

The Governance Regulation aims to enable EU to assess and report on progress towards the achievement of the EU NDC to the European Parliament and Council[20] as well as to the UNFCCC Secretariat[21], including to ensure "the timeliness, transparency, accuracy, consistency, comparability and completeness of reporting" by the EU and its MSs under the Paris Agreement. Reporting relevant for Article 6 includes the Initial Report, annual information and regular information, including a structured summary with information, inter alia, about corresponding adjustments and the emissions balance, as part of the BTR.

The Governance Regulation does not currently include details on how the Commission would compile the information needed to track progress towards the EU NDC, including with regard to removals from bio-CCS (see Box 3), and to prepare the BTR and Initial Report. The national inventory reports, which MSs report to the Commission on an annual basis, provide the foundation for NDC tracking. However, it is unclear how the Commission will reflect the information on removals from bio-CCS reported by MSs in their national inventories and EU reporting templates (Box 3) as well as use of LULUCF and ESR flexibilities and ETS trading across EU borders in its Paris reporting.

[20] The EU publishes annually the Climate Action Progress Report on progress towards EU's emission reduction targets, in line with the Governance Regulation. The latest progress report was published in October 2024 (EC 2024).

[21] The EU and its MSs submitted their first biennial report to the UNFCCC in December 2024 (EC 2024).

Box 3. The current and future status of removals from bio-CCS in the EU

For now, the EU does not have any target for industrial removals, such as removals from bio-CCS or direct air capture (DACCS). This said, MSs can report removals from bio-CCS as part of their national inventory reports to the UNFCCC, in accordance with the IPCC inventory guidelines. MSs can also report these removals to the Commission in their inventory reports and, from 2024 onwards, in the templates for climate reporting (EC 2024c, d). It is the authors' understanding that removals from bio-CCS that are reported by MSs may count towards the joint EU NDC, given that the EU NDC is economy-wide and covers all emissions and removals within the EU.

In the context of the EU 2050 climate neutrality objective, this understanding seems to be generally supported by Recital 20 of the EU Climate Law which states that the climate neutrality objective "should encompass Union-wide greenhouse gas emissions and removals regulated in Union law. It should be possible to address such emissions and removals in the context of the review of the relevant climate and energy legislation. Sinks include natural and technological solutions, as reported in the Union's greenhouse gas inventories to the UNFCCC". This indicates the EU's intention to regulate removals from technological solutions, such as bio-CCS, in EU law and report them in the EU inventories.

CO_2 emissions from biofuels, bioliquids and biomass fuels are currently covered under the EU ETS when used by covered installations or operations (aviation, shipping), but they are accounted with an emission factor of zero, if sustainability criteria are met. This means that covered installations do not need to surrender allowances for zero-rated biogenic emissions and, consequently, there is no incentive to capture and store biogenic carbon from installations covered by the ETS.

Currently, the only EU-level incentive for industrial carbon removals is the Innovation Fund, which uses EU ETS-generated revenue to fund the demonstration of innovative low-carbon technologies. The EU's Industrial Carbon Removal Strategy (EC 2024b) confirms that industrial carbon removals, from activities such as bio-CCS, are not currently covered by the EU ETS Directive nor the Effort Sharing or LULUCF Regulation, meaning that these "negative emissions" will not be taken into account when calculating emissions that fall under the scope of the ESR or EU ETS. This reflects the EU's focus on the mitigation hierarchy, i.e. prioritising emission reductions in the ESR and ETS sectors and reserving industrial removals to counterbalance hard-to-abate emissions in these sectors (EC 2024c).

Looking forward, the EU Climate Law includes a process for setting the 2040 target. This process was launched in early 2024, with the publication of the European Commission's assessment for a 2040 EU climate target (EU 2024a), recommending a 90% reduction of the EU's net GHG emissions by 2040 relative to 1990, including emission reductions as well as land-based and industrial removals. To achieve this, the Commission estimates that the level of remaining EU GHG emissions in 2040 should be less than 850 $MtCO_2e$ and land-based and industrial carbon removals should increase to 400 $MtCO_2$ (EC 2024a). Modelling indicates that almost half of the removals should come from industrial removals in 2040, which would require a drastic scaling from the current near-zero levels, and even from projected levels of 5 $MtCO_2$ through removals from bio-CCS by 2030 (EC 2024b).

In April 2024, Jos Delbeke, former Director-General of the European Commission's Directorate-General for Climate Action, called for the EU to consider how to "gradually and cautiously" include high-integrity carbon credits, particularly carbon credits based on industrial carbon removals, in the EU ETS (Delbeke 2024). Delbeke's calls have been echoed by Peter Liese, European Parliament's lead negotiator for the previous EU ETS reform, stressing the need to incorporate industrial removals into the EU ETS before EUAs run out around 2039 (Euractive 2024).

In the coming years, the EU will assess options for EU targets for carbon removals, including a separate target for permanent (i.e. industrial) carbon removals, as well as options for policies and

support mechanisms for industrial carbon removals, including whether and how to account for them in the EU ETS (EC 2024b). The Commission will share its assessments in July 2026. In parallel, the Commission is developing the CRCF framework (see above). While the CRCF Regulation states that all removals certified under the framework should contribute towards EU's climate commitments, there is currently no direct link between the units to be certified and their accounting towards the EU climate objectives (EC 2024c). The framework's entry into force is a precondition for analysing the accounting of industrial carbon removals under EU law (EC 2024b). When integrating industrial removals into EU law, the key objectives to consider are: (1) Removals serve to offset hard-to-abate emissions and then to go net-negative; (2) The ramp-up of both industrial and nature-based carbon removal solutions should be incentivised; (3) Double counting should be avoided" (EC 2024c).

In May 2024, the Commission adopted an Implementing Regulation that sets the structure, format, submission processes and review of information reported by MSs and updates the templates for MSs to report their climate action data (EC 2024d). The data collected through these templates helps the Commission to assess whether EU and its MSs are on track towards their climate targets, and feeds into the annual EU Climate Action Progress Report. According to the Commission, the updated templates take account of developments in the context of the Paris Agreement on the accounting of removals from bio-CCS, which MSs will be able to report in their inventories starting in 2024.

The Commission is currently discussing these issues, including potential amendments to the Governance Regulation, in the Commission's internal working group on Paris accounting. The status of this legislative proposal is unclear, but it is clear that this legislation will not be agreed and adopted in time for the submission deadline of 31.12.2024 of the first BTR. However, according to the Commission, there are efforts to reach a political agreement with the MSs that could enable the Commission to prepare the BRT and submit it by the end of 2024.[22] Annual information would need to be reported from 15 April 2025 onwards.

In addition to MS-level reporting to the EU and EU-level reporting under the Paris Agreement, MSs also submit a national inventory report and a BTR to the Paris Agreement directly. For the reasons explained above, the MSs are not expected to report any corresponding adjustments in their BTR. It is the authors' understanding that individual MS that use ITMOs towards OIMP should include this information in their reporting under the Paris Agreement. It is unclear if this information would also be included in the EU reporting under the Paris Agreement. This said, the information reported by individual MSs and by the EU to the UNFCCC should be consistent.

6. Opportunities for EU MSs to engage in ITMO cooperation

Table 2. Overview of Article 6 opportunities for EU MSs with existing EU legislation

In light of existing and planned EU legislation,	As host country*	As buyer country

[22] The EU submitted the first BTR by 31.12.2024.

can an EU MS…		
…participate in ITMO cooperation?	☒	☑
…authorise ITMOs for use towards NDCs?	☒	☒
…authorise ITMOs for use for OIMP?	☒	☑
…transfer ITMOs?	☒	☑
…acquire and use ITMOs for use towards EU NDC?	*n.a.*	☒
…acquire and use ITMOs for use for OIMP?	*n.a.*	☑
…apply corresponding adjustments?	☒	☒
…track ITMO-related information in a registry?	*n.a.**	☑
…report ITMO-related information under the Paris Agreement?	*n.a.**	☑

* EU MSs cannot currently be host countries for ITMOs in light of existing EU legislation

In light of the existing EU legislation, can an EU MS currently…

…participate in ITMO cooperation as a host country? No. See below for details.

…participate in cooperation involving ITMOs as, or on behalf of, an end user of ITMOs? Yes, but only to the extent that it involves ITMOs that are used for purposes other than towards the (EU) NDC. See below for details.

…authorise ITMOs as an acquiring country for use towards NDCs or OIMP? Not towards NDC use (see below) but yes for use for OIMP. Note that, to the authors' knowledge, ITMO authorisation is mandatory only for host countries but not for acquiring countries.

…authorise ITMOs as a host country for use towards NDCs and/or OIMP? No. Authorisation of ITMOs commits the host country to applying corresponding adjustments to emissions and removals covered by its NDC and submitting an Initial Report. As the EU has a single NDC, any decision to authorise mitigation outcomes generated within the EU as ITMOs (thus excluding them from being counted towards the EU NDC) would need to be taken at EU level. Moreover, the Initial Report requires information that cannot be decided at MS level, such as method for applying CAs. The EU does not currently have EU-level arrangements for authorising and tracking ITMOs in place. While there is no explicit EU legislation preventing EU MSs from authorising ITMOs, the above issues prevent a MS from authorising ITMOs as a host country for mitigation outcome occurring within its boundaries.

...transfer ITMOs as a host country? No. The existing EU legislation does not enable EU MSs to be host countries for ITMO-generating activities, due to reason explained above.

...transfer ITMOs as an acquiring country? Yes. EU MSs can acquire ITMOs from other countries and transfer acquired ITMOs on to other countries, until the ITMOs are used and thus removed from circulation.

...acquire and use ITMOs towards the EU NDC? No. The EU NDC for 2030 (EU 2023a, p. 20) states, regarding the intention to use voluntary cooperation under Article 6 of the Paris Agreement, that the "EU's at least 55% net reduction target by 2030 is to be achieved through domestic measures only, without contribution from international credits. Norway, Iceland and Liechtenstein have been participating in the EU ETS since 2008, and an agreement linking the EU and Swiss emissions trading systems entered into force in 2020. The EU is continuing to explore the possibilities to link the EU ETS with other robust emissions trading systems. The EU will account for its cooperation through the EU ETS with these and any other Parties in a manner consistent with the guidance adopted by [the Conference of the Parties serving as the Meeting of the Parties (CMA)[23]] and any further guidance agreed by the CMA." The EU NDC includes the ETS (with an EU-wide target), the ESR (with individual binding reduction targets for Member States for GHG emissions not covered by the existing EU ETS) and the LULUCF sectors (with an EU-wide target as well as MS-level targets). Currently, there is no legal basis that would allow individual MSs to use ITMOs towards their ESR and LULUCF targets. EU MS can also not individually establish linking agreements between the EU ETS with other emission trading systems. The EU will, however, establish rules to account for participation or linking of the ETS, and the participation in the ESR and LULUCF Regulation, under Article 6 of the Paris Agreement, accounting for the shifts in mitigation due to such cooperation as ITMOs.

...acquire and use ITMOs for OIMP (e.g. towards national targets)? Yes, to the extent that they are used by the MS for purposes other than the EU NDC or respective EU legislation, for example for voluntary offsetting or towards national targets. The MS's ESR and LULUCF targets do not allow for ITMO use and must be achieved in line with the respective EU regulations. The provisions for meeting LULUCF and ESR targets as well as the EU NDC do not apply to national targets. Also private entities could acquire and use ITMOs for OIMP, for example for voluntary offsetting.

...apply corresponding adjustments as a host country? No. As MS cannot authorise and transfer ITMOs as a host country (see above), no corresponding adjustments need to be applied in this respect. In addition, if the EU were to allow MSs to authorise and transfer ITMOs as a host country in the future, the resulting corresponding adjustments would not be applied at MS level but at EU level. As the EU has a single NDC, the structured summary (which includes the application of

[23] CMA is the decision-making body of the Paris Agreement

corresponding adjustments) can only be done at EU level, not at MS level. To the authors' knowledge, the individual MSs will report their GHG inventories and a BTR to the UNFCCC but their BRT would not include information on any corresponding adjustments.

…apply corresponding adjustments as, or on behalf of, an ITMO end-user? No. In accordance with Article 6.2 guidance, an end-user country only applies corresponding adjustments for ITMOs used towards its NDC. For reasons explained above, an EU MS cannot currently use ITMOs towards the EU NDC. This said, individual MSs may communicate in their BTR that they use ITMOs towards OIMP for the purpose of meeting a national target other than the NDC. This is, however, distinct from the application of corresponding adjustments and the resulting emissions balance referred to in the Paris Agreement's Enhanced Transparency Framework and Article 6.2 guidance.

…track ITMO-related information in a registry? Yes. An EU MS that participates in ITMO cooperation, e.g. by acquiring ITMOs for use for OIMP, would be required to have, or have access to, a registry to track ITMOs. To the authors' knowledge, no EU MS currently has, or has access to, a registry for tracking ITMOs. In principle, an EU MS that wishes to engage in ITMO cooperation could potentially set up a national registry or utilise the international registry for tracking ITMOs. This said, according to Article 41 of the Governance Regulation, the EU and its MSs "shall set up and maintain registries to accurately account for the [EU NDC] and for [ITMOs] pursuant to Article 6" and these registries may be maintained "in a consolidated system, together with one or more other Member States." It is currently unclear if this would mean that EU MSs could use a national/international registry (e.g. for tracking the acquisition of ITMOs for OIMP) and/or only the registry or registries referred to in the Governance Regulation.. The timeline and process for setting up these registries is currently unclear. Due to the lack of clarity on the international level on the account types and the exact transaction types linked to annual reporting and the AEF, "it is premature for the EU to communicate on the type of ITMOs registry to be implemented without further discussions with Member States"[24]. Registries could potentially also record and track any ITMO transactions made by authorised private entities, such as the transfers and voluntary cancellations.

…report ITMO-related information to the UNFCCC Secretariat? Yes. Participating Parties are required to report ITMO-related information, such as authorisations, transfers, use towards NDCs and use for OIMP, to the UNFCCC Secretariat. The authors are not aware of current EU legislation that would prevent individual EU MSs from acquiring and using ITMOs for OIMP, such as towards national (non-EU NDC) targets. MSs must report about such use to the UNFCCC Secretariat, both in their national reporting and via the EU reporting to the UNFCCC. Even if the EU MS does not authorise ITMOs as an ITMO end-user (since authorisation by the end-user Party is not mandatory), the acquisition and use of ITMOs would, to the authors' understanding, require the submission of an Initial Report, including information, inter alia, on how the participating Party ensures

[24] Email from Roxanne Lake, European Commission, dated 18 June 2024.

environmental integrity and applies robust accounting in its ITMO cooperation. Note that the Initial Report requires some information that must be decided at EU level, e.g. the method of applying CAs. It is important that the Initial Report submitted by the EU and by any individual MSs are consistent, for example with regard to the method of applying corresponding adjustments. Coordination within the EU is therefore necessary on the submission of Initial Reports. The status and timeline of the EU's Initial Report is unclear. Similarly, coordination is necessary to ensure that annual information on ITMO transactions reported at EU level includes any transactions implemented at the level of individual MSs.

7. Identified gaps and options to address them

This section identifies elements of ITMO cooperation that EU MSs cannot currently engage in and identifies how they *could* be made possible. The authors do not, however, suggest that they *should* be made possible. The consideration of the advantages and disadvantages of allowing MSs to act as host countries to ITMO-generating activities or to acquire ITMOs for use towards the EU NDC is beyond the scope of this study.

What further EU-level arrangements would be needed to enable an EU MS…

…participate in ITMO cooperation as a host country? This would require an EU-wide decision that the EU becomes a host Party of ITMO cooperation and EU MSs can host ITMO-generating activities. Such cooperation opportunities would need to be reflected in the Initial Report of the EU. Following this decision, the EU would need to establish EU-level arrangements for enabling ITMO authorisations for mitigation within EU boundaries, establish a registry or registries for recording and tracking ITMO transactions and EU-level arrangements for reporting ITMO-relevant information, including the application of corresponding adjustments to emissions and removals for sectors and GHGs covered by the EU NDC in the EU BTR. As any overselling by one MS would affect achievement of the EU NDC as a whole, such legislation would need to set appropriate guardrails to ensure that the EU still achieves its NDC. In addition to new legislation, amendments would be required to relevant existing legislation, for example the Governance Regulation and/or related delegated/implementing acts (on reporting), Registry Regulation (on recording and tracking ITMO transactions) and/or the ESR/LULUCF Regulation (on authorising any mitigation outcomes in the respective sectors).

To safeguard the achievement of the EU NDC, it would be prudent to limit ITMO authorisation to mitigation outcomes that (1) are of high integrity; (2) are fully reflected in the GHG inventory in the emissions and removals[25] covered by the EU NDC; and (3) are excess of what are needed to meet

[25] It is currently not clear if and to what extent removals from bio-CCS are covered by the EU NDC (see Box 3 for details).

the EU NDC, the ESR and/or LULUCF targets[26]. The EU arrangements for ITMO authorisation could include an assessment of authorisation requests against these criteria, as well as any further criteria relating to e.g., activity types and environmental and social safeguards. It would also be prudent to have EU arrangements for tracking ITMOs (i.e. a Paris registry or registries) and reporting arrangements in place before allowing for ITMO authorisations.

If the EU were to decide to become host Party of ITMO cooperation, respective provisions for applying corresponding adjustments would need to be established. While corresponding adjustments cannot be applied by an individual MS to their national emissions and removals (for reasons explained above), the EU would need to establish arrangements to apply corresponding adjustments at the EU level, mirroring the impacts of ITMO first transfers at the MS level. Depending on the affected sector and the intra-EU MS targets, the individual MS could be obliged to cancel units from the affected sector (e.g., AEAs)[27]. There are useful precedents from the Kyoto Protocol era, for example under Joint Implementation[28] and the effort-sharing sector[29]. The EU would need to submit an Initial Report at the time of the first authorisation, and updated Initial Reports as well as annual and regular information thereafter.

…participate in ITMO cooperation as an acquiring country for use towards the EU NDC? This would require an EU decision to allow the use of ITMOs towards the EU NDC (and ETS, ESR and/or LULUCF targets) and amendments to the EU Climate Law and any other relevant EU legislation. In this case, there could be pre-requisites for such use, for example MS-specific quantitative limits to ITMO use and eligibility criteria for ITMOs. The current EU Climate Law foresees that the EU will achieve its 2030 target and the 2050 climate neutrality objective domestically. If the EU were to decide to include the use of ITMOs towards (or to enhance) these targets, the EU Climate Law would need to be amended accordingly. Furthermore, the use of international credits is explicitly excluded in the EU NDC for 2030. If the EU wanted to use ITMOs already towards its 2030 NDC, it would also need to submit an updated 2030 NDC, in addition to amending the relevant EU legislation. If the EU decided to allow ITMO use towards its next NDC, there would be no need to update the 2030 NDC but there would still be a need to amend the relevant EU legislation with regard to the post-2030 period.

[26] This could include requirements for MSs that request authorisation for mitigation achieved within its boundaries, such as allowing them only to the extent that the MS in question is set to overachieve its target for the affected sector. This would require amendments to the relevant regulation, e.g. ESR and LULUCF Regulation (on requesting ITMO authorisations against excess AEAs or LULUCF units) and the Registry Regulation (on related registry functions)

[27] This would imply that the MS in question is set to overachieve its target for the respective sector.

[28] In addition to converting AAUs into ERUs to avoid double counting in the international level, JI projects implemented in the EU avoided double counting with the EU ETS sector through JI set-asides, whereby EUAs were cancelled for any ERU that was issued for emission reductions that affected the ETS sector emissions.

[29] Several MSs have deleted AEAs as a means to overachieve their effort-sharing targets.

In February 2024, the Commission presented its assessment for a 2040 climate target for the EU, recommending reducing the EU's net greenhouse gas emissions by 90% by 2040 relative to 1990. This will inform the new Commission, which took office in July 2024. The Commission will make the legislative proposal to include the 2040 target in the European Climate Law and will ensure that the appropriate post-2030 policy framework is in place to deliver the 2040 target in a fair and cost-efficient manner. However, there have been calls for opening the EU targets up for ITMOs, for example by integrating them into the EU ETS (see Box 3). The role of ITMOs could be discussed as part of the process of agreeing on the EU 2040 targets.

If the EU were to decide to allow the use of ITMOs towards the EU NDC (including the ESR, LULUCF and/or ETS targets covered by the NDC), this would require the EU to set up provisions for applying corresponding adjustments. While corresponding adjustments cannot be applied by an individual MS to their national emissions and removals (for reasons explained above), there could be EU arrangements that could trigger corresponding adjustments at the EU level, in cases where a MS acquires ITMOs and uses them towards its ESR or LULUCF target. There are useful precedents from the Kyoto Protocol era for allowing international credits to be used by MSs towards the effort-sharing targets and by ETS installations towards EU ETS compliance. In the Paris era, there would also need to be EU arrangements that would trigger corresponding adjustments at the EU level when MSs or ETS installations use ITMOs towards compliance. For example, the Union Registry could include functions for using ITMOs towards ESR or LULUCF compliance and triggering corresponding adjustments in the EU emissions balance. This would require amendments to the ESR/LULUCF Regulation and ETS Directive (on using ITMOs towards compliance), Registry Regulation (on registry functions for using ITMOs) and the Governance Regulation (on reporting about the use of ITMOs and applying corresponding adjustments).

…track ITMO-related information in a registry? This would require the implementation of the Paris registries referred to in Article 41 of the Governance Regulation. The timeline and process for setting up these registries is currently unclear.

…report ITMO-related information to the UNFCCC Secretariat? This would require clear EU arrangements on the scope, process and timeline of the EU reporting on ITMO-relevant information, potentially by amending the Governance Regulation and/or related delegated/implementation acts. The Commission would need to clarify the relationship between the information reported by individual MSs to the EU and to the UNFCCC, and ensure the its consistency with the information reported by the EU to the UNFCCC. The EU would need to report information covering all ITMOs, including transactions its MSs.

8. Conclusions

In light of existing and planned EU legislation, individual EU MSs can currently engage in ITMO cooperation only by acquiring ITMOs from non-EU MSs for use for OIMP, such as towards national

targets. Private companies located in EU MSs can also acquire ITMOs for use for OIMP, such as towards voluntary offsetting. These ITMOs could be based on various types of activities, including removals from bio-CCS. Other forms of ITMO cooperation, including serving as a host country for ITMO-generating activities or acquiring ITMOs for use towards the EU NDC or towards the MS's ESR or LULUCF is not possible. Enabling these forms of ITMO cooperation would require EU-level decisions, new EU legislation and amendments to existing legislation.

Regarding removals from bio-CCS, MSs can currently report them in their national inventory reports to the EU and the UNFCCC, as well as in the templates for MSs' to report their climate action data. MSs cannot currently count removals from bio-CCS towards their current ESR and LULUCF targets, and these removals cannot be counted towards EU ETS compliance either. However, it seems that removals from bio-CCS may be counted towards the EU NDC, to the extent that they are reported by MSs to the EU and included in the EU-level inventory reporting. Looking forward, the integration of removals from bio-CCS into EU law, for example in the EU ETS, is under consideration, and decisions on this could be expected in 2026 at the earliest. Meanwhile, MSs can count removals from bio-CCS towards their national targets and report them to the UNFCCC and the EU.

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