



Proposals
for effective
carbon pricing
**Leakage and linkage
considerations**

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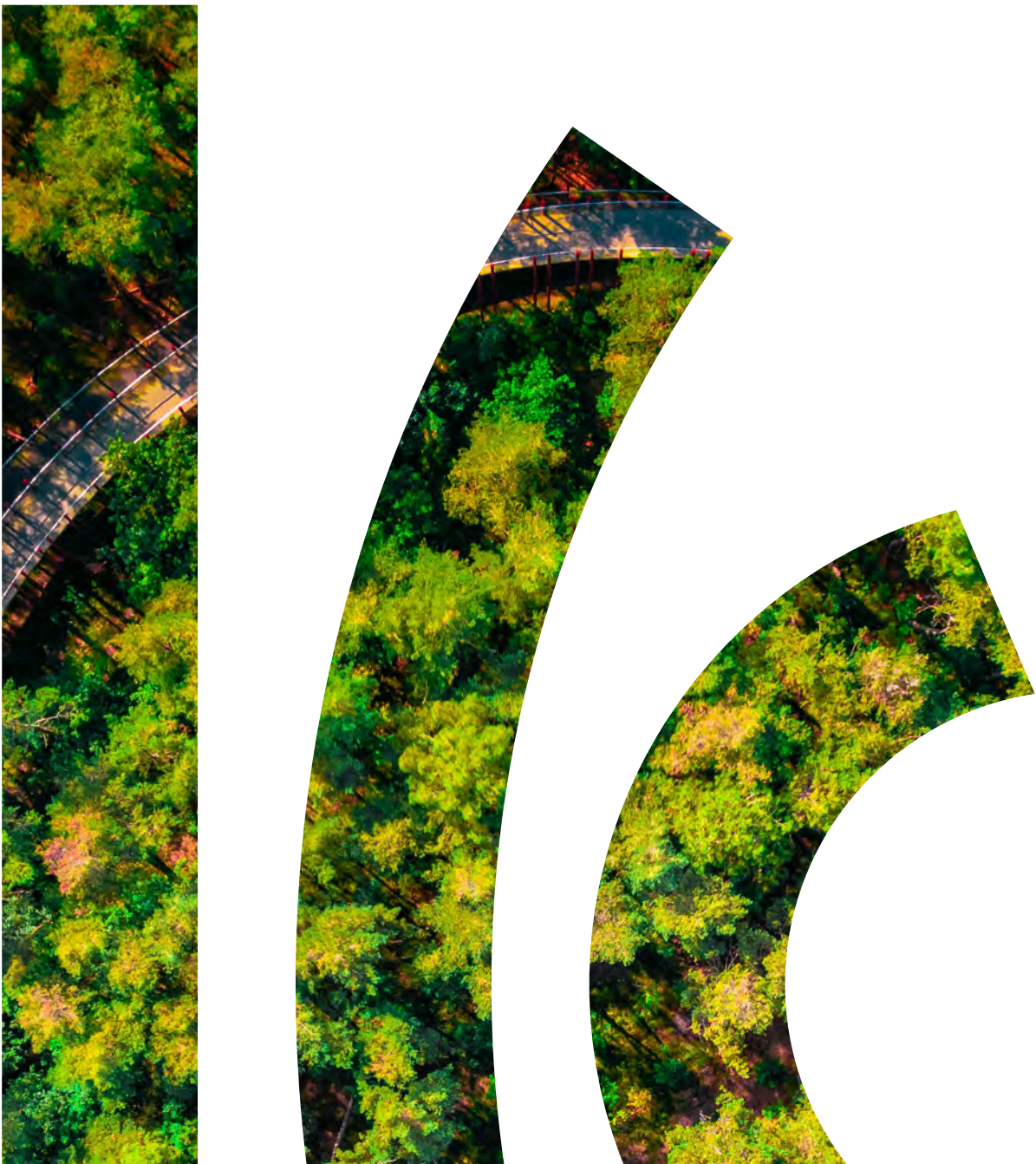
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Contents

I. Executive summary	4
II. Proposals for effective carbon pricing: Leakage and linkage considerations	7
III. Carbon leakage	13
IV. Carbon linkage	18
Bibliography	25
Annex I: Existing instruments and measures to address carbon leakage	27
Annex II: Comparison of core features of carbon market mechanisms	30



I. Executive summary

National or subnational carbon pricing compliance mechanisms are market-based approaches to reduce and remove greenhouse gas emissions (GHG). They incentivise market behaviour change to reduce emissions and invest in scaled up climate mitigation and adaptation solutions. Such mechanisms frequently form part of a country's strategy for GHG emission reduction, in accordance with nationally determined contributions (NDCs) pursuant to the Paris Agreement¹.

According to the recent 2023 synthesis report of the Intergovernmental Panel on Climate Change (IPCC)² and the synthesis report for the first Global Stocktake³ of the UN Framework Convention on Climate Change (UNFCCC), the current country NDCs remain highly insufficient to meet the Paris Agreement goals. This shows clear gaps in ambition, implementation, and the enabling conditions to provide a credible global response to the climate crisis.

The 2023 United Nations Climate Change Conference (COP28) and the first Global Stocktake (GST) of the Paris Agreement represent a milestone moment for governments to build on the Sharm el-Sheikh Implementation Plan⁴ and Glasgow Climate Pact,⁵ which reaffirmed country commitment to set out actions for closing the emissions gap, keep 1.5°C alive, and achieve a clear roadmap for action in this critical decade for action.

As part of this plan for action, focus is shifting to implementing and enforcing effective, enabling policies and solutions. Carbon pricing is an essential tool for comprehensive policy packages. It assists governments in achieving existing NDCs at the lowest possible cost, scaling up investment for further climate mitigation and adaptation efforts and ratcheting up ambition.

The International Chamber of Commerce (ICC)—as the official business convenor to the UNFCCC—strongly supports the use of market-based approaches and the successful operationalisation of a new phase of emissions trading under Article 6 of the Paris Agreement, an essential part of international climate policy. We recognise that market mechanisms—if developed and implemented effectively—can play an instrumental role in achieving the goals of the Paris Agreement.

Since 2021, ICC has drawn on the experience of its global network reaching more than 170 countries to develop core principles⁶ and guidance for the effective design⁷ of carbon pricing instruments. These emphasise the need for predictable, effective and smartly designed carbon pricing as well as a coherent international approach that is built on broader principles for effective emission reduction. Improved global consistency is key to legitimacy and unlocking full environmental and economic benefits of market-based policies, as well as greater convergence in global carbon pricing.

1 According to latest studies, 80% of countries that signed up to the Paris Agreement have signalled their intention to use international market mechanisms or broad international support to meet their goals.

NDCs or increase ambition, while over 20% of countries have already actively engaged in at least one cooperative approach through bilateral agreements, MOUs or participation in pilot projects. See https://mcusercontent.com/a56b93cff5b695d2a902de8d0/files/72816d4a-47f6-f223-2580-35bbbdee1add/IETA_Pre_COP27_Briefing.01.pdf

2 IPCC, (2023), AR6 Synthesis Report: Climate Change 2023, <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

3 UNFCCC, (2023), Technical dialogue of the first global stocktake—Synthesis report by the co-facilitators on technical dialogue https://unfccc.int/sites/default/files/resource/sb2023_09_adv.pdf

4 UNFCCC, (2022), Decisions taken at the Sharm El-Sheikh Climate Change Conference <https://unfccc.int/cop27/decisions>

5 UNFCCC, (2023), Technical dialogue of the first global stocktake, https://unfccc.int/sites/default/files/resource/sb2023_09_adv.pdf

6 ICC, (2021), Carbon Pricing Principles <https://iccwbo.org/news-publications/policies-reports/icc-carbon-pricing-principles/>

7 ICC, (2022), Critical Design Features for Effective Carbon Pricing—A Business Perspective <https://iccwbo.org/news-publications/policies-reports/critical-design-features-for-effective-carbon-pricing-a-business-perspective/>

Over this period, ICC has engaged extensively with businesses operating under more than 70 different carbon pricing regimes currently in force. They expressed concerns over two

issues in relation to carbon leakage and carbon linkage. ICC addresses them in this third report and makes the following recommendations and proposals for consideration by policymakers.

Leakage

- Be non-discriminatory and compatible with WTO rules
- Ensure careful design to prevent distortions
- Support environmental and climate objectives
- Require transparent and robust accounting
- Encourage interactions between carbon mitigation approaches
- Reflect purpose-directed use of proceeds
- Engage stakeholders and provide workable transition periods
- Support for vulnerable businesses MSMEs, in particular in emerging and developing markets



Linkage

- Work towards improving complementarities within domestic compliance mechanisms
- Recognise key design features common across mechanisms and frameworks
- Understand differences and commonalities across carbon pricing mechanism frameworks
- Leverage operational features within carbon pricing mechanisms and across frameworks
- Support international cooperation under the Paris Agreement



The report is complemented by an ICC report⁸ studying the effect of carbon pricing on inflation through time and exploring potential policies that could help to mitigate the inflationary shock.

Key messages:

- Carbon pricing is an essential tool for comprehensive climate policy packages. It can assist governments in achieving existing nationally determined contributions at the lowest possible cost, scaling up investment for further climate mitigation and adaptation efforts and ratcheting up ambition.
- The overriding common objective of carbon pricing should be to reduce greenhouse gas emissions. The development of sustained and robust carbon markets maximises the effect of carbon pricing in achieving that objective.

⁸ ICC, (2023), Carbon pricing and inflation: a dilemma? <https://iccwbo.org/news-publications/policies-reports/principles-and-proposals-for-effective-carbon-pricing/>

- Through extensive consultation with businesses operating under more than 70 different carbon pricing regimes currently in force, two major issues came to light in relation to carbon leakage and carbon linkage that can have a significant impact on the effectiveness of carbon pricing.
- Countries should consider issues and concerns related to *carbon leakage* as well as opportunities for *carbon linkage* in the development of effective carbon pricing systems to enhance a medium- and long-term sustained and robust global carbon market.
- When developing, designing and implementing national carbon pricing approaches, governments are encouraged to build on the ICC Carbon Pricing Principles as well as other existing principles and guidance to increase effectiveness, minimise risks related to carbon leakage as well as promote linkage for greater international cooperation and coordination.
- Any approaches to prevent carbon leakage should be considered, designed carefully, proportionately and without compromising trade rules.
- National legal, regulatory and policy frameworks for carbon pricing market mechanisms should consider (i) linkage across national and sub-national compliance mechanisms to prevent GHG emissions leakage between countries; (ii) broader linkages between domestic compliance mechanisms, Article 6 mechanisms and the voluntary carbon markets, and (iii) broader climate, energy, trade and taxation policies.
- Article 6 of the Paris Agreement on cross-border emissions trading is not designed to lead to a global carbon price. However, with the right operating rules, it has the potential to create the necessary transparency to forge a more cohesive multilateral approach to carbon pricing.
- At COP28, countries are urged to agree on critical outstanding elements to fully operationalise Article 6 of the Paris Agreement without further delay and to provide a workable platform for parties and businesses to use, while also setting foundations for a functioning, high-integrity cross-border carbon market.

II. Proposals for effective carbon pricing: Leakage and linkage considerations

As outlined in the ICC Carbon Pricing Principles, effective and smartly designed carbon pricing mechanisms can play an important role in reducing and removing GHG emissions and achieving a net zero future by 2050. Following ICC's proposals, effective carbon pricing systems should:

- **focus on GHG emissions reduction as prime target, including prevention of GHG leakage**, with the aim of **halving GHG emissions by 2030 and achieving net zero emissions by 2050** by both reducing emissions and increasing removals, in line with the latest available science;
- **provide a predictable framework** to facilitate national, subnational and international cooperation;
- **adopt a meaningful carbon price** within the country or region to create behaviour change;
- **retain sufficient incrementality and flexibility** to avoid economic shocks and adapt over time;
- **ensure just transition** with access to affordable, sustainable, and low-carbon energy sources for all, as well as associated opportunities for jobs and skills development;
- **support sustainable development objectives and climate policy actions** being complementary to, or at least compatible with, other national decarbonisation policy design efforts.
- **ensure international cooperation** to enhance co-ordination, consistency and coherence, reduce administrative and compliance costs, accompanied by strengthened accounting and reporting frameworks that provide clear guidelines and standards for accounting and measurement.

In the following section, ICC provides proposals and key considerations for effective carbon pricing considerations for leakage and linkage in order to achieve the overriding objective of reducing global GHG emissions.

Proposals and key considerations for policymakers

The overview and analysis outlined in Sections III and IV further build on previous ICC work as well as insights gleaned from exchanges with governments and academia. ICC believes that countries should consider *carbon leakage and carbon linkage* in the development of effective carbon pricing systems to enhance a medium- and long-term sustained and robust global carbon market. International cooperation will be essential to develop consistent and coherent approaches that are key to providing a global framework that better facilitates cross-border trade and investment, and economic growth.

A. Carbon leakage

The Paris Agreement recognises the importance of international cooperation and coordinated solutions at all levels in order to allow for higher climate ambition and action. Most importantly, Article 6 aims to enable countries and businesses to cost-effectively manage their emissions reductions through co-operation with other countries and businesses globally.

While an agreement on the effective implementation for Article 6 is still outstanding, many countries have moved ahead and adopted national and regional carbon pricing instruments.

Due to different levels of regulation of emission reductions in different countries, and the absence of a more coherent and coordinated approach, there is an increased risk that this asymmetrical approach leads to shifting of investment, production and emissions to other regions, which could limit CO₂ emissions reductions efforts.

As governments and policymakers seek to address risks related to carbon leakage, they are encouraged to consider the following broader principles and best practices, with a view to minimising any potential negative impacts and consequences on international commerce:

- **Be non-discriminatory and compatible with WTO rules**

Any measures to address carbon leakage should be compatible with international treaties and agreements, most notably with World Trade Organization (WTO) rules and non-discrimination principles, considering, in particular, provisions of the General Agreement on Tariffs and Trade (GATT).⁹ This concludes that measures should respect both the most-favoured-nation principle on equal treatment between imported products of different trading countries as well as the principle of national treatment, ensuring equal treatment between domestic and imported goods.

- **Ensure careful design to prevent distortions**

Any approaches to prevent carbon leakage should be **considered and designed carefully and proportionately** and should genuinely **prevent economic and competitive distortions** between regions and sectors. The design of any measures should also seek to close any potential loopholes to circumvent compliance with regulation.

Countries should undertake a risk assessment on the effect of a border carbon adjustment (BCA) on developing economies' exports and competitiveness in relation to the objective to reduce GHG emissions. Risks of carbon leakage will differ by industry. Policymakers will need to reflect on the industry mix of their territory in selecting and designing policy tools in this area. Any carbon leakage actions should be considered in the context of the broader carbon pricing policy in order to effectively achieve net reduction of GHG emissions and should include approaches to incentivise decarbonisation.

- **Support environmental and climate objectives**

Measures, such as BCAs, should seek to prevent leakage—an environmental objective that involves enabling and enhancing domestic climate ambition. Measures need to support increased ambition on climate mitigation and the achievement of a country's NDCs under the Paris Agreement. It is important that BCAs do not hinder global efforts on climate action but should promote increased collaboration and coordination. BCAs should therefore take into account and be compatible with national climate policies and pricing mechanisms, avoiding overlapping measures (e.g., double taxation) and advancing international cooperation on carbon pricing.

- **Require transparent and robust accounting**

BCAs require a robust monitoring, reporting and verification system (MRV) that should be transparent but at the same time pose minimal administrative and legal burdens for businesses providing clear guidelines on accounting and measurement standards. Using an internationally recognised MRV system optimises chances for international alignment and streamlines reporting for businesses. Relevant accommodations should also be provided for the effective implementation of the reporting requirements by all stakeholders.

⁹ The General Agreement on Tariffs and Trade is a multilateral legal framework designed to substantially reduce tariffs and other barriers to trade and eliminate discriminatory treatment in international commerce.

- **Encourage interactions between carbon mitigation approaches**

Any BCA should be designed in such a way so that it provides the possibility for corresponding transfers of allowances or can be linked with third country BCAs in an attempt to create cooperation with like-minded countries (for example “carbon clubs”). Another way to encourage linking is by **recognising equivalences**. Equivalent measures taken by countries, in particular by developing countries, to incentivise GHG emissions reductions should be taken into account and recognised to the extent that they reduce the risk of leakage. Furthermore, credits for carbon-equivalent (CO₂-e) costs already incurred by exporters should be considered and should not be based on the carbon price difference.

- **Reflect purpose-directed use of proceeds**

A BCA proposal should include provisions on the use of proceeds. A significant portion of the revenue should be used for the purpose of climate mitigation and adaptation purposes, especially in developing countries. Share of proceeds could also be allocated to support developing countries and their exporting industries to comply with the BCA regime.

- **Engage stakeholders and provide workable transition periods**

Meaningful and timely engagement, consultation and full transparency of the regime’s implementation and operation with foreign governments, trading partners and businesses is imperative to avoid any administrative complexity that would place additional burden on businesses. Effective stakeholder engagement will also be key to enable and structure workable transitional periods for all stakeholders.

- **Support vulnerable businesses, in particular, in emerging and developing markets**

To the extent possible, special considerations should be provided for micro-, small and medium-sized enterprises (MSMEs), in particular, in emerging and developing markets. For example, a staged approach for small enterprises below a certain export volume should be applied in order to help build needed capacities and capabilities for reporting and compliance. This should be coupled with sufficient capacity building and financial support to alleviate compliance and administrative costs.

B. Carbon linkage

The Paris Agreement recognises the importance of international cooperation and coordinated solutions at all levels in order to allow for higher climate ambition and action. Article 6 specifically seeks to assist countries and non-state actors to cost-effectively manage emissions reduction through global co-operation.

ICC Carbon Pricing Principles 2, 3 and 4 promote consistency between policies and advocate for reliable and predictable, clear and robust carbon pricing frameworks. ICC Carbon Principle 7 recognises that there is no “one-size-fits-all” single carbon pricing instrument. This applies equally to carbon pricing mechanisms pursuant to national and sub-national compliance regimes (often but not exclusively tax based), as well as international treaties (Paris Agreement, Article 6) and voluntary carbon market industry-based initiatives, which are subject to standards and/or private contracts. All share the **common objective to reduce global greenhouse gas emissions** through market mechanisms. Each is governed by a different legal system (domestic regulatory laws, public international law, private international law). Each may involve state and/or non-state actors.

In national and sub-national compliance, Article 6 and voluntary carbon credit mechanisms, there are opportunities for mutual learning and developing best practice principles, based on best available science. These should seek environmental integrity for legitimate carbon credit design and development, verification and use/claims, with the establishment of well-functioning, high-integrity

carbon markets for all stakeholders to benefit from potential voluntary and compliance mechanisms, whilst achieving **ICC Carbon Pricing Principle 1 to focus on GHG reduction as the prime target, including the prevention of GHG leakage.**

The **ICC Carbon Pricing Principles were promulgated to assist governments and policymakers** seeking to implement national, subnational, and supranational compliance systems. Important existing work and efforts are underway within the UNFCCC process for Article 6 and within the voluntary carbon markets. Countries should assess which tools to use as part of their national strategy and if/how they interact as this will differ based on local context and may evolve over time. The Integrity Council for the Voluntary Carbon Markets is seeking to establish guardrails to increase transparency and integrity in carbon credit design, development and verification¹⁰ and the Voluntary Carbon Market Integrity Initiative¹¹ seeks to provide guidance to corporates on using the guardrails in carbon claims (e.g., net zero representations). Similar principles of transparency and integrity apply to any rules for international cooperation developed under Article 6 of the Paris Agreement.

When developing, designing and implementing national carbon pricing approaches, building on ICC principles and other existing principles and guidance, ICC encourages governments to:

- **Work towards improving complementarities within domestic compliance mechanisms**
Linking domestic compliance carbon pricing mechanisms (ref Section IV below) is key to increasing greater international and national **coordination and alignment** of policy efforts, **reducing fragmentation**, overcoming existing complexities, and maintaining their relevance in the era of the Paris Accord. Linking can **improve cost effectiveness** by lowering the overall economic costs for certain sectors, **enhance price stability and predictability** as well as **reduce carbon leakage risks and competitive disadvantages**.

At the same time, increased coordination of carbon pricing mechanisms as well as economically and technically viable options for mitigation actions in different regions can also help **reduce complexity** of carbon pricing measures for cross-border production processes and supply lines by providing clear guidelines or rules on how cross-border systems interact with each other.

- **Recognise key design features common across mechanisms and frameworks**
There is a strong need to **coordinate compliance mechanisms and ensure compatibility of key design features across mechanisms and frameworks** to preserve, facilitate and accelerate the primary objective of global GHG emissions reduction.

Key common design considerations include:

1. current and future levels of ambition;
2. voluntary or mandatory nature of the system;
3. standards for environmental integrity;¹²
4. market stability features, e.g. price floor/ceilings or allowance reserves and direction of future ETS policy;
5. the type and stringency of an emissions cap;

10 ICVCM, (2023), 'Core Carbon Principles, Assessment Framework and Assessment Procedure' <https://icvcm.org/wp-content/uploads/2023/07/CCP-Book-R2-FINAL-26Jul23.pdf>

11 VCMI, (2023), 'Claims Code of Practice' <https://vcmintegrity.org/wp-content/uploads/2023/06/VCMI-Claims-Code-of-Practice.pdf>

12 We understand environmental integrity to mean that the use of carbon pricing mechanism and emissions trading does not result in higher global GHG emissions than if the NDC targets had been achieved only through domestic mitigation action, without international emissions trading.

6. the Price or Supply Adjustment Mechanisms (PSAMs);
7. the use and environmental integrity of offset credits;
8. the robustness of MRV systems;
9. potential for linking with further systems; and
10. capacity of regulators to manage risks of misconduct in the secondary market.

- **Understand differences and commonalities across different carbon pricing mechanism frameworks**

The three major carbon pricing mechanisms, (A) domestic compliance, (B) voluntary carbon markets and (C) international mechanisms, all share the same primary common objective to reduce GHG emissions. ICC highlights the importance of understanding differences and commonalities across carbon pricing mechanism frameworks, recognising that **each are at different levels of maturity. ICC supports the development and growth of each market as they take a very different approach to emissions management.**

- **Leverage operational features within carbon pricing mechanisms and across frameworks**

Where possible, governments should leverage any existing opportunities for increased coordination and co-operation to deliver tangible progress towards a functioning cross-border carbon market. **Full operationalisation of Article 6 of the Paris Agreement and, in particular, accounting rules and frameworks and robust transparency requirements will be key in this regard.** Similarly, development of the ICVCM Core Carbon Principles for voluntary carbon markets and industry and stakeholder governing bodies for buying and selling verified carbon credits also provides learnings for improving integrity and transparency.

- **Support international cooperation under the Paris Agreement**

Linking compliance systems and international cooperation, most importantly under Article 6 of the Paris Agreement, **can increase the benefits of carbon pricing and lead to higher climate ambition** by governments and businesses. The Paris Agreement’s bottom-up climate regime creates specific challenges for governance of international carbon markets, which continue to be part of the “crunch issues” heavily debated in the Article 6 negotiations.

Box 1: Immediate proposed next steps to set the foundation for greater coordination and alignment under Article 6:

- **At COP28, countries are urged to agree on critical outstanding elements to fully operationalise Article 6 of the Paris Agreement** without further delay and provide a workable platform for parties and businesses to use, while also setting foundations for a functioning, high-integrity cross-border carbon market.¹³

Business calls on governments to particularly build on already existing experiences under Article 6.2, focus on national implementation and find a compromise on the outstanding details of reporting requirements.

The Article 6.4 Supervisory Body must make steady progress in operationalising the 6.4 crediting mechanism so projects can begin to register, and investments can flow. A functioning Article 6.4 mechanism has the potential to provide a plug-and-play solution for countries that want to use market mechanisms but do not have the

¹³ IETA, (2023), ‘The Article 6 Opportunity for Canada: Blueprint to International Carbon Market Cooperation’ <https://www.ieta.org/resources/papers/the-article-6-opportunity-for-canada-blueprint-to-international-carbon-market-cooperation/>

technical capacity or political conditions to implement complex domestic legislation. In order to achieve broad participation in Article 6, in particular from developing countries, extensive capacity building support will be essential to strengthen institutional capacities to participate in these new markets.¹⁴

Equal treatment should also be given to a wide range of activities and technologies that reduce or remove emissions and practices and experiences that are market-tested, including standards and practices from the voluntary carbon markets should be considered.

- **It is essential that the detailed rules for Article 6.2 cooperation and the Article 6.4 mechanism both fulfil the “Rulebook” mandate for environmental integrity, transparent and robust accounting and contribute to emission reduction and implementation of countries’ NDCs.** Robust and transparent reporting, ambitious baseline-setting, additionality assessment, avoidance of emissions lock in, emissions leakage accounting, permanence, and the avoidance of all forms of double-counting are critical principles to take into consideration in this regard.

14 IETA, (2022), ‘How Governments Can Implement NDCs Cooperatively and Encourage Private Sector Investment’ <https://www.ieta.org/resources/papers/ieta-article-6-discussion-paper-how-governments-can-implement-ndcs-cooperatively-and-encourage-private-sector-investment/>

III. Carbon leakage

Carbon leakage is considered as a result of asymmetrical/fragmented carbon policies, price differences, sector coverage and the resulting carbon cost. The theory of carbon leakage refers to “the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints”.¹⁵

Carbon leakage reduces the efficiency of carbon pricing as it limits CO2 emission reductions. It could displace production and/or investment with consequent displacement of activities potentially producing higher emissions. If emissions are shifted to another jurisdiction with less stringent decarbonisation policies, carbon leakage can undermine a country’s unilateral efforts to reduce its emissions and the effectiveness of carbon pricing.¹⁶

As local or regional carbon pricing instruments are being put in place, there is a growing risk of shifting emissions outside the countries taking domestic mitigation action. Several countries or regions, which have led change on carbon pricing, have introduced or are planning to implement measures to mitigate the risk.

ICC recognises that the concern of carbon leakage is real and therefore considers it important to examine the issue in further detail, although there are some countries and stakeholders that question its existence^{17 18 19 20} (see Box 2).

Box 2: Existing studies on carbon leakage

Some reports have claimed that there is little or no evidence of displacement of production or that carbon leakage represents a risk in a small, but important subset of sectors.^{21 22}

A recent OECD study²³ has found that in 2021 carbon pricing developments continued to diverge across countries with prices rising further in countries that already had the highest net carbon prices in 2018 and another states that “the vast majority of [ex ante] studies predict that unilateral climate policy will result in some form of carbon leakage”.

15 European Commission, (2021), ‘Carbon Leakage’ Energy, Climate Change, Environment https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/free-allocation/carbon-leakage_en

16 Florian Misch, Philippe Wingender, (2021), ‘Revisiting Carbon Leakage’ <https://www.imf.org/en/Publications/WP/Issues/2021/08/06/Revisiting-Carbon-Leakage-462148>

17 Ibid.

18 Gabela & Freund, (2022), ‘Potential carbon leakage risk: A cross-sector cross-country assessment in the OECD area’ <https://ideas.repec.org/p/ags/pugtwp/333468.html>

19 Carbone, J. and N. Rivers, (2017), “The Impacts of Unilateral Climate Policy on Competitiveness: Evidence From Computable General Equilibrium Models”, Review of Environmental Economics and Policy, Vol. 11/1, pp. 24-42, <http://dx.doi.org/10.1093/reep/rew025>

20 OECD, (2020), ‘Climate Policy Leadership in an Interconnected World: What Role for Border Carbon Adjustments?’, <https://doi.org/10.1787/8008e7f4-en>

21 Carbon Market Watch, (2015), <https://carbonmarketwatch.org/publications/annual-report-2015/>

22 OECD Climate Policy Leadership in an Interconnected World: What Role for Border Carbon Adjustments (2020), pt 29: https://www.oecd-ilibrary.org/environment/climate-policy-leadership-in-an-interconnected-world_8008e7f4-en

23 OECD, (2022), ‘Pricing Greenhouse Gas Emissions: Turning Climate Targets into Climate Action’ <https://www.oecd.org/g20/topics/international-taxation/pricing-greenhouse-gas-emissions-turning-climate-targets-into-climate-action.htm>

The WTO 2022 World Trade Report²⁴ recently estimated carbon leakage. As shown by some empirical evidence, carbon leakage also differs across countries and can be substantial in some cases, mostly for small open economies.²⁵ The average leakage rate is found to be 25%, implying that a reduction of 100 tonnes of GHG emissions domestically would be accompanied by an increase of 25 tonnes of emissions abroad.

In addition to empirical studies, simulation studies have also assessed the risk of carbon leakage associated with carbon pricing. An analytical literature review of studies consisting mainly of computable general equilibrium analysis reports an average carbon leakage ratio estimated at around 14%.²⁶ More recently, carbon leakage rates for industrialised countries have been estimated to range between 5% and 30%.²⁷

According to the WTO Global Trade Model (GTM) simulation analysis, the estimated aggregate carbon leakage rates seem to be relatively limited and do not exceed 13%.²⁸ However, the magnitude of the estimated carbon leakage rates differs significantly by sector, with the chemical and emissions-intensive trade-exposed (EITE) sectors particularly exposed to carbon leakage.

A study of the French Association of Large Companies (2022)²⁹ highlights that more ambitious reductions included in the EU Carbon Neutrality Scenario are estimated to result in additional 14% carbon leakage compared with carbon leakage resulting from the baseline scenario over the 2025-2050 period, and that leakage is expected to be geographically dispersed, with the greatest concentration occurring in Russia (22% of production relocation), United States (11%), China (9%), and India (9%). The greatest exposure to leakage will occur in chemicals (35% of all leakage), metals (33%), cement (14%) and air transport (12%).

The conclusion can be drawn that concerns regarding the risk of carbon leakage are real, and governments continue to consider measures³⁰ or a mix of policies to address the risk—the recent introduction of the European Carbon Border Adjustment Mechanism (EU CBAM), being a clear case in point.

This ICC report recognises the growing concern around the risk of leakage and seeks to discuss considerations to assess approaches that address these risks, with a view to providing guidance for governments and policymakers to support the development of effective carbon pricing policies that allow countries to increase cooperation, that can ultimately lead to increased climate ambition.

24 WTO, (2022), World Trade Report, https://www.wto.org/english/res_e/publications_e/wtr22_e.htm

25 Florian Misch, Philippe Wingender, (2021), 'Revisiting Carbon Leakage' <https://www.imf.org/en/Publications/WP/Issues/2021/08/06/Revisiting-Carbon-Leakage-462148>

26 IMF, (2021), Revisiting Carbon Leakage <https://www.imf.org/en/Publications/WP/Issues/2021/08/06/Revisiting-Carbon-Leakage-462148>

27 Christoph Böhringer, et al., (2022), 'The incidence of Carbon Pricing: from input-output via microsimulation to General Equilibrium' <https://www.econstor.eu/bitstream/10419/264067/1/vfs-2022-pid-70008.pdf>

28 Eddy Bekkers, Gianmarco Cariola, (2022), 'Comparing different approaches to tackle the challenges of global carbon pricing' <https://www.wto-ilibrary.org/content/papers/10.30875/25189808-2022-10>

29 AFEP, (2022): 'Trade and Climate Change Quantitative Assessment of the Best Policy Tools to Achieve Climate Neutrality and Competitiveness' <https://afep.com/wp-content/uploads/2021/01/Trade-and-Climate-Change-Quantitative-Assessment-of-the-Best-Policy-Tools.pdf>

30 World Bank, (2017), 'Carbon Tax Guide: A Handbook for Policymakers' (Table 22, pg 107: Overview of Measures to Address Leakage and Distributional Risks) <https://openknowledge.worldbank.org/entities/publication/c31d9298-30bf-55fb-acad-ad0605b06e9c>

Considerations addressing carbon leakage

Significant work has been carried out by various organisations examining existing instruments and policy measures to address carbon leakage, with the intention to reflect more generally on effective mechanisms to address carbon leakage, and any resulting challenges these may pose.

Among these instruments and measures are:

- Free allowances under an ETS;
- Carbon tax reliefs;
- Border carbon adjustments (BCAs) through a carbon trading or tax instrument;
- Output-Based Pricing System (OBPS).

Some of these measures are more unilateral in nature—in the sense that they address the risk of carbon leakage by adjusting the position of the local contributor to carbon pricing—whilst others are more multilateral—in that they adjust the position of parties that are not contributing to carbon pricing.

In order to design and implement these measures in alignment with the ICC Carbon Pricing Principles, certain aspects and design features should be considered.

- **Several emerging and developing economies have challenged the validity or basis of carbon leakage, especially with respect to less unilateral measures such as the EU CBAM. Concerns have been raised regarding compliance with WTO trade rules**, trade implications and barriers (including higher import costs, compliance burden) and restricted market access for countries (both equal trading partners and developing countries) exporting to the countries considering BCA, which would be comparatively disadvantaged as a result of the imposed BCA and the need to recalibrate their systems and pricing.^{31 32}
- In its report,³³ UNCTAD **notes that the introduction of a BCA results in declines in exports in developing countries in favour of developed countries, which tend to have less carbon intensive production processes**. The report suggests that the European Union could consider CBAM flanking policies, including the use of revenue generated by the CBAM, to accelerate the diffusion and uptake of cleaner production technologies to developing country producers, which could be beneficial both in terms of greening the economy and fostering a more inclusive trading system.
- An effective carbon leakage mitigating instrument should preferably consider the impact of asymmetrical carbon pricing **on imports as well as exports**. For example, the current EU CBAM proposals do not provide relief for exports. When domestic products are exported, there is no relief or rebate given for the carbon price which has been incurred which means exports may be at a competitive disadvantage in comparison with competitor products in or from lower action countries.

31 See Joint Statement issued at the BRICS High-level Meeting on Climate Change (2022) http://brics2022.mfa.gov.cn/eng/hywj/ODMM/202205/t20220529_10694182.html

32 In March 2023 at the WTO Committee on Trade and Environment (CTE) meeting, China introduced a proposal to deepen multilateral discussions on the trade aspects and implications of environmental measures, suggesting starting with discussions on the European Union's Carbon Border Adjustment Mechanism (2023), India presented a paper on the increasing use of environmental measures, such as carbon border measures as protectionist non-tariff measures. See <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/CTE/W251.pdf&Open=True>

33 UNCTAD, (2021), A European Union Carbon Border Adjustment Mechanism: Implications for developing countries, United Nations Conference on Trade and Development https://unctad.org/system/files/official-document/osginf2021d2_en.pdf

As a result, this could deter exports. Relief from exports is particularly relevant in instances where trading partners have carbon prices and where the product will face a carbon price in the country of import. This ensures that the fair carbon price is not paid more than once for the same product. A carbon price for exports may still be relevant if/where the products are being exported to countries that do not have a carbon price—if the policy objective is to price carbon. The trade-off however will be eroded competitiveness as the EU products will cost more, underscoring the potential for carbon leakage.

- **Instruments addressing leakage need to consider the level of complexity and related compliance costs.** Instruments addressing leakage may seek to encourage trading partners to place a fair price on carbon emissions to support a global shift to more sustainable industry. However, in developing these instruments, governments should carefully consider the level of complexity and related compliance costs. For example, the EU CBAM will create a heavy administrative burden for traded products covered in the mechanism. Its implementation will require the burden of proof on importers, to i) prove the level of emissions from production and ii) if applicable, prove that a carbon price was paid in the country of origin. If the declaration of emissions and carbon pricing systems proves to be too complex or cumbersome for importers, the EU CBAM could in turn hinder trade flows between the EU and non-EU countries and restrict market access to the EU.
- **Instruments addressing carbon leakage may not be able to recognise the difference in coverage of carbon pricing for sectors or specific companies under a trading partner country's carbon pricing system.** Often, this consideration is a consequence of addressing complexity and compliance concerns as proxies may be required for carbon coverage on a national level (e.g., not considering subnational rules) in order to keep compliance and tracking/tracing manageable.

For example, if 100 different companies import fertilisers from China or Canada to the EU, each company would need to individually describe to the national authorities how the Chinese or Canadian ETS system relates to the EU ETS and how this impacts the relevant payments they would need to make. Similarly, a facility located in South America may need to measure and calculate the same emissions in multiple different ways under different calculation frameworks, likely resulting in different numbers—e.g. one for EU CBAM to import the product, one for the ISSB/TCFD external transparency reporting, one for domestic in country ETS and/or carbon tax, etc.

This builds the case for international cooperation to start coalescing around international standards for emissions measurement, accounting, and levels of assurance. Agreed upon methodology of measuring embedded carbon could potentially serve as a proxy for equivalence. It is welcome to note that the European Commission plans to develop secondary legislation before the end of the transitional period to design the rules and processes to take into account the effective carbon price paid abroad.

- **The question of equivalence or difference in pricing to compensate for leakage is another element for consideration that could pose certain challenges.** In instances where an exporting country has a lower carbon price, the question arises as to whether the price for the BCA, carbon tax credit or other carbon leakage mitigating instrument will be applied to the difference between the carbon price of the importing and exporting country. Or will considerations be given where the exporting country price could be considered sufficient in relation to the ability/limitations of that country to effect a higher carbon price, particularly in developing countries? In this respect, options are being considered to provide for an export levy on producers, as an equivalent on the export. Relatedly, questions have been raised as to whether other countries should be compelled to introduce a higher carbon price (e.g. for

allowance schemes) if they are not a high emitting country and contribute a relatively small percentage to global emissions.

- **Instruments addressing carbon leakage should consider and address the risk of fraud.**

The risk of regulatory circumvention exists, which could result in products with a significantly high carbon footprint being imported into the jurisdiction that established e.g., the BCA as low-carbon products. A number of European manufacturers have already brought to the attention of the European regulator that as a result of the introduction of CBAM, a loophole may arise that will encourage manufacturers from other countries to recycle products with a high carbon footprint and import them, therefore bypassing regulations.

- **Specifically for border carbon adjustments**, an IMF working paper³⁴ provides an overview on design choices for BCA and outlines the inherent fiscal incentive in any BCA for trading partners to impose some carbon pricing, noting that the incentive appears modest given the small shares of emissions in trade flows.

It further notes that whilst BCAs are initially introduced unilaterally, countries may subsequently coordinate to create border-free trading zones with a common external charge, which may ultimately lead to more formal and comprehensive arrangements for coordinating over carbon pricing.

It suggests that a BCA in combination with other incentives could promote participation in an international carbon price floor (ICPF) arrangement among large emitting countries, with the purpose to facilitate a scaling up of global carbon pricing (or equivalent measures) through coordinated action to address free-rider and competitiveness obstacles that hamper countries when they act unilaterally.

- **Specifically with respect to Output-Based Pricing Systems**, there is room for improvement with respect to optimising international alignment to enhance the effectiveness of the mechanism more broadly, and **particularly the need to further improve and strengthen the accounting and reporting framework over time and aligning it with the reporting, accounting and transparency provisions agreed under the UNFCCC and Paris Agreement.**

The creation of a backstop in a federal context provides clarity for economic actors operating across multiple jurisdictions of the long-term policy priority while providing flexibility for provincial approaches. However, this flexible approach could increase complexity and administrative burden for entities operating across several domestic systems, especially as these differ widely in terms of compliance costs, reporting requirements and other features. A list of additional literature/studies for consideration is included in Annex I.

ICC highlights the need for strengthened public-private sector collaboration as well as greater clarity and comprehensive guidance. In line with the ICC Carbon Pricing Principles, allowing for sufficient lead time to start implementation also needs to be considered in this respect. ICC recently contributed to a consultation specifically on the implementation and operationalisation of the European Commission's draft act for the application of Regulation (EU) 2023/956 regarding the EU CBAM.³⁵ ICC outlines existing challenges for businesses in implementing the Act, including entry into effect, a transitional phase, navigating uncertainty with limited visibility and lack of comprehensive guidance.

34 IMF, (2021), Working Paper: Border Carbon Adjustments: Rationale, Design and Impact, <https://www.imf.org/en/Publications/WP/Issues/2021/09/24/Border-Carbon-Adjustments-Rationale-Design-and-Impact-466176>

35 ICC, (2021), 'Recommendations to the European Commission on the implementation of the Carbon Border Adjustment Mechanism' <https://iccwbo.org/news-publications/policies-reports/icc-recommendations-to-the-european-commission-on-the-implementation-of-the-carbon-border-adjustment-mechanism/>

IV. Carbon linkage

National legal, regulatory and policy frameworks for carbon pricing market mechanisms should consider (i) linkage across national and sub-national compliance mechanisms to prevent GHG emissions leakage between countries and (ii) broader linkages between domestic compliance mechanisms, Article 6 mechanisms and the voluntary carbon markets, and (iii) broader climate, energy, trade and taxation policies. The overriding common objective is to reduce GHG emissions; the development of sustained and robust carbon markets maximises the effect of carbon pricing in achieving that objective.

ICC Carbon Pricing Principles 2, 3 and 4 promote consistency between policies and advocate for reliable and predictable, clear and robust carbon pricing frameworks. It is acknowledged that carbon markets are still developing as, according to the World Bank, only about 25% of emissions are currently priced globally. As a consequence, it is imperative that markets continue to grow, whether through compliance, voluntary, or Article 6 mechanisms.

ICC Carbon Pricing Principle 7 recognises that a “one-size-fits-all-approach” for all economic sectors and segments of society does not exist at this point and not all specific sectoral needs can be included under one single instrument. This is the same across national and sub-national compliance regimes (often but not exclusively tax based), international treaty regimes (Paris Agreement, Article 6) and voluntary carbon market industry-based regimes.

The ICC Carbon Pricing Principles assist governments and policymakers in implementing domestic legal, regulatory and policy frameworks for carbon pricing mechanisms. They apply to domestic frameworks for national, subnational, and supranational compliance mechanisms, and could be relevant to support the development and implementation of other systems.

Practical linkages exist between carbon pricing mechanisms, irrespective of origin, including but not limited to:

- linkage between two or more heterogeneous domestic compliance instruments, such as emissions trading schemes (ETSs), to expand carbon markets to offer participating regions and companies more cost-efficient options to reduce emissions and exchange compliance permits;³⁶
- linkage based on carbon border adjustment mechanisms for carbon leakage (Part 2 above);
- linkage between policies, regimes and maintaining values of high ambition countries;
- linkage of carbon credit generation, verification and use rules, standards and guidelines across carbon pricing mechanisms;
- linkage to permit efficient and effective transfer of verified carbon credits across borders and between group companies;
- linkages to support insetting and multinational organisation carbon sequestration or GHG reduction projects;
- linkage between carbon pricing mechanisms and broader national climate, economic, social and environmental policies as well as NDC plans;

³⁶ Linking can be done either directly or indirectly and can lead to price convergence, thus offering efficiency gains. In a direct linking, emission allowances in one system can be used in another. The direct linking can be bilateral (two-way link), when allowances of both schemes can be used in either systems in both directions, or unilaterally (one-way link) if this is only the case for one system and the flow of allowances only operates in one direction. In indirect linking, two or more systems are linked to a common third system, for example, if both ETSs are linked to the same offset crediting system such as the Clean Development Mechanism (CDM) or potentially the new UNFCCC 6.4 mechanism under the Paris Agreement. Several examples for successful linking exist. For example, in 2012, the European Commission and Australia agreed to start linking the newly introduced Australian carbon price and the EU ETS from 2015 and to achieve full linking by 2018.

The global climate change mitigation commitment architecture of the Paris Agreement is bottom-up, permitting and mandating each party under the Paris Agreement to design and implement its own mitigation strategy. It further enables countries and businesses to manage their emissions reductions through cooperation under Article 6. Countries can also develop their own national approach to carbon pricing mechanisms.

While there are different approaches, a carbon credit is a universally measurable unit, measured in tonnes of carbon dioxide-equivalence (CO₂e). It represents the reduction or removal of a single tonnes of carbon from a single atmosphere. The generation of a credit and its verification by a government or industry body permits it to be used to discharge mandatory compliance obligations, voluntary targets or sell to generate income as a transferable financial instrument.

Effective and smartly designed and implemented carbon pricing mechanisms that allow for increased coordination and cooperation have the potential to create economic and social benefits for countries, citizens, and corporates as, in addition to reducing greenhouse gas emissions, they have the ability to generate income that may be deployed to achieve broader climate-related economic, energy transition and social goals. They can make climate mitigation efforts more cost-effective and may allow governments and companies to adopt more ambitious climate targets.

Consideration of linkage, as set out above, can:

- Improve cost effectiveness and reduce the cost of action by reducing aggregate compliance costs (in a similar way that costs are reduced in a trade relationship) and can therefore facilitate administrative efficiency and lower administrative costs.³⁷
- Improve price stability and predictability;
- Reduce leakage concerns and competitive disadvantage, creating a level playing field for companies across the linked market, which now face the same carbon price.
- Increase the number of market participants. With more actors buying and selling permits, market depth and liquidity increase. A bigger carbon market is also better at absorbing shocks and is more resilient to manipulation, which could result from a buyer or seller power;
- Allow different jurisdictions to increase political momentum and attention for climate action by demonstrating their climate leadership at a global level.

Therefore, linkage, as explained above, should be increasingly considered by governments in developing or implementing effective carbon pricing mechanisms.

A. Linkage across national or subnational compliance mechanisms

- Linkage may align reduction percentages and reduction terms within the NDCs of countries seeking to collaborate to achieve the Paris Agreement target of limiting the global temperature increase to 1.5°C above pre-industrial levels.
- Linkage may enhance coordination and compatibility between carbon pricing mechanisms to preserve social and environmental integrity of allowances across countries.
- Linkage may improve compatibility of design features across systems by clearly aligning objectives, current and future levels of ambition, standards for environmental integrity, strategies for stabilising prices, and direction of future ETS policy.

³⁷ IETA, (2022), Article 6 Discussion Paper 'How Governments can Implement NDCs cooperatively and encourage private sector investment' https://k5x2e9z8.rocketcdn.me/wp-content/uploads/2023/09/IETA_DiscussionPaper_Article6_June2022.pdf

- In particular, certain design features require strict compatibility (e.g., voluntary or mandatory nature of system, type of cap, Price or Supply Adjustment Mechanisms, use and environmental integrity of offset credits, borrowing and banking), whereas others demand confidence in comparable outcomes (e.g., stringent ETS cap, robust MRV systems, capacity of regulators to manage risk of misconduct in secondary markets, administration of registry and tracking allowances, and ability and willingness to enforce)
- Linkage also arises in the context of alignment with international trade rules, to avoid creating trade barriers. For policymakers, linking also means a loss of regulatory flexibility and control on a regional level, emphasising the need for close coordination between linked systems.
- Timing of any linkage should also be considered, as well as governance and long-term management.
- Recognising the bottom-up architecture of the Paris Agreement commitments, governments retain the right to prioritise local political, economic, and societal factors against broader global economic, social and environmental interests.

B. Linkage between national or subnational compliance mechanisms and Paris Agreement Article 6

- Article 6 of the Paris Agreement, if implemented and operationalised effectively, is a key enabler for increased cooperation and higher climate ambition and action.
- Article 6 enables countries and businesses to cost-effectively manage greenhouse gas emission reductions through global cooperation.
- Fundamental rules for Article 6 are agreed but functional details are still to be defined and governments must work to ensure that new mechanisms deliver real and additional benefits to climate and society.
- Nevertheless, valuable learnings through the Article 6 rules negotiations may be applied to domestic carbon pricing compliance mechanisms and rules governing voluntary carbon markets.³⁸

Box 3: Operationalising Article 6: a key step to establishing a high-integrity cross-border carbon market

The conditions for cross-border emissions trading fundamentally changed when the Paris Agreement Article 6 Rulebook was adopted at COP26 in Glasgow in 2021. The rulebook sets out the conditions and rules for emissions trading between countries within the UN system under Article 6 of the Paris Agreement, more specifically for Article 6.2 (allowing for the international transfer of carbon credits between countries) and Article 6.4 (creating a central UNFCCC mechanism to trade credits from emissions reductions generated through specific projects).³⁹

Article 6 itself is not designed to create a global carbon price. However, if operationalised and implemented effectively, it has enormous potential to establish a functioning, high-integrity cross-border carbon market and to provide the foundational overarching international architecture for countries to increase cooperation on emissions trading.

38 VCMi (2023), 'Claims Code of Practice' <https://vcmin integrity.org/vcmi-claims-code-of-practice/>

39 ICC (2021b), Article 6 Business Brief <https://iccwbo.org/news-publications/policies-reports/article-6-business-brief/>

It can further assist in developing transparency around carbon pricing and allowing for a stronger and more coordinated approach to carbon pricing⁴⁰ and most importantly avoid potential unilateral and protectionist climate policy measures. Article 6 also has the potential to drive forward multilevel and multilateral collaboration between government and the private sector offering the chance to work together collectively to achieve our common goals. To achieve this, the private sector has a key role to play in translating Article 6 collaboration frameworks into real action.⁴¹

C. Linkage to voluntary carbon markets

- Voluntary carbon markets are an additional and important enabler for increased cooperation and higher climate ambition and action by non-state actors.
- Voluntary carbon markets enable businesses to generate greenhouse gas emission removal schemes and to inject additional carbon credits into the global system to achieve the overriding objective of greenhouse gas emission reduction.
- Voluntary carbon markets have undergone critical review for integrity both in terms of generation and verification of credits and claims by purchasers of credits to meet their own mandatory of voluntary net emissions reduction targets.
- These learnings are also still developing, but the identification of core carbon principles and other standards and core elements may be applied to domestic carbon pricing compliance mechanisms and rules governing voluntary carbon markets.⁴²
- Voluntary carbon market standards and principles aim to enhance integrity, credibility and overall confidence in carbon markets, also providing necessary safeguards where necessary and ensuring environmental and social co-benefits. These apply to design, development and verification of carbon credits, as well as to claims by purchasers. Standards applicable to claims seek to reduce the risk of greenwashing in GHG emission reduction using offsets.

D. Overriding considerations for any carbon pricing mechanisms and markets

Different forms of carbon pricing mechanisms have evolved and expanded dramatically since the 2015 Paris Agreement; national compliance mechanisms issuing carbon credits now reach well beyond states listed in the Kyoto Protocol Annex A. The Paris Agreement Article 6 has introduced a new global mechanism, and carbon offsets generated for voluntary carbon markets continue to develop. 2022 heralded the launch of several new national and subnational compliance mechanisms, with 73 now in operation, and expanded their scope to cover around 23% of global GHG emissions.⁴³

The primary underlying objective of all carbon pricing mechanisms and markets is to value the externality of carbon emissions in an effort to reduce global GHG emissions. The three broad types of carbon pricing segments that flow from carbon credits and offsets generated by carbon pricing

40 ICC (2021c), Carbon Pricing Principles <https://iccwbo.org/publication/icc-carbon-pricing-principles/>

41 Recent research has shown that cooperation through Article 6 has the potential to reduce the total cost of climate action by more than half and generate additional financing from \$300 billion per year in 2030 up to \$1 trillion per year in 2050. Re-investing these funds in new climate efforts, Article 6 could enable additional emission cuts and could contribute to the enhancement of ambition in countries' NDCs.

42 VMCI, (2023), op. cit.

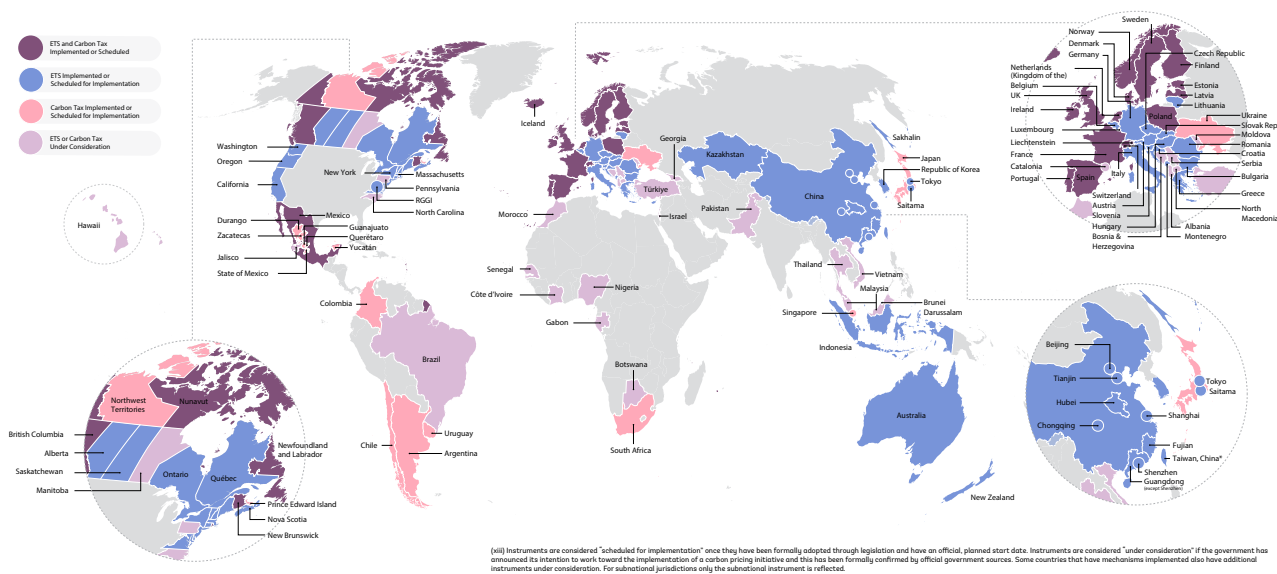
43 World Bank, (2023), 'State and Trends of Carbon Pricing' <https://openknowledge.worldbank.org/entities/publication/58f2a409-9bb7-4ee6-899d-be47835c838f>

mechanisms are: (A) national (or sub-national) compliance markets, (B) voluntary carbon markets and (C) international cooperation under Article 6.

Despite their different origin, scope, design, and governance, all three share one primary goal: **to reduce GHG emissions and address the market failure to price climate change**. They aim to do so by capturing the external costs of emitting GHG emissions, and ultimately helping governments and companies to achieve their climate goals.

Compliance markets: Despite economic turmoil and geopolitical instability of this past year, ETSs and carbon taxes have proven resilient. Several jurisdictions either delivered on existing plans for new ETSs or taxes, increased their ambition or announced further proposals for developing new initiatives in the coming years.

FIGURE 5
MAP OF CARBON TAXES AND ETSs^(xii)



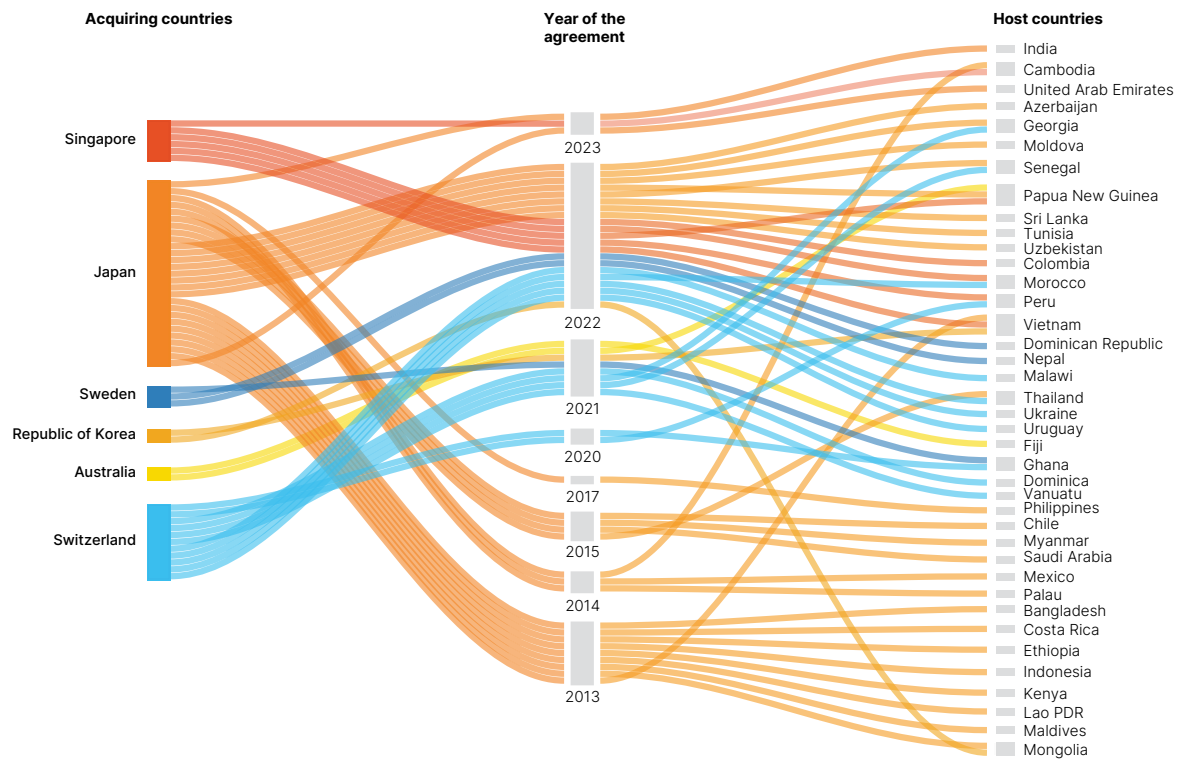
Source: World Bank, State and Trends of Carbon Pricing, 2023

Voluntary carbon markets: VCMs continued to expand⁴⁴ and there has been increased momentum to address issues that undermine the integrity of carbon credit markets, including efforts by the Integrity Council for the Voluntary Carbon Markets to establish guardrails to increase transparency and integrity and by the Voluntary Carbon Market Integrity Initiative to provide guidance to corporates. According to Ecosystem Marketplace, VCMs grew in value towards \$2 billion in 2021, quadrupling in market value from 2020.⁴⁵

International cooperation under Article 6: There are early signs of progress on the operationalisation of Article 6 of the Paris Agreement on cross-border emissions trading, with not only increased evidence of bilateral agreements but also examples of establishing implementation frameworks and infrastructure to facilitate international cooperation.

44 CSIS, (2023), Voluntary Carbon Markets: A Review of Global Initiatives and Evolving Models: <https://www.csis.org/analysis/voluntary-carbon-markets-review-global-initiatives-and-evolving-models>

45 Ecosystem Marketplace (2022), "The State of the Voluntary Carbon Markets 2022 Q3 Briefing", <https://www.ecosystemmarketplace.com/publications/state-of-the-voluntary-carbon-markets-2022/>



(xii) Reflects bilateral agreements that have been signed between national governments related to cooperation under Article 6 (as of April 1, 2023). The agreements have differing objectives and legal statuses. For Japan, bilateral agreements are intended to establish the Joint Crediting Mechanism, which includes activities that pre-date the Paris Agreement. For Australia, it includes Australia's partnerships with Fiji and Papua New Guinea announced under the Indo-Pacific Carbon Offsets Scheme.

Source: World Bank, State and Trends of Carbon Pricing, 2023

Carbon pricing mechanisms and markets lack any universal or coordinated approach on design, scope, integrity, governance, regulation or enforcement. Lack of consistency creates a challenge for effective accounting by governments and corporates and, ultimately, for scaling carbon markets to help reach the global goal to halve GHG emissions by 2030 and achieve net-zero emissions by 2050.

The existing **carbon markets landscape** is characterised by a series of different governance, design and methodology standards as well as different degrees of transparency and scales (see Annex II).

A single country may operate a regulated compliance market and, at the same time, permit voluntary market trading by corporates outside the compliance regulated sectors and participate in mitigation outcome trading activities under Article 6.2 and 6.4 of the Paris Agreement.

As to the international cooperation, rules to fully operationalise Article 6 of the Paris Agreement remain in discussion. It is difficult to predict the effect of an operationalised Article 6.2 carbon pricing mechanism and of an Article 6.4 global carbon market on existing mechanisms and markets. It is therefore important to continuously examine the development of these systems and assess their implications as the market continues to grow and evolve

Guiding principles for carbon markets

Each of the three broad types of carbon markets, and any credits and offsets generated within them, could be guided the ICC Carbon Pricing Principles.

Clear principles are key for policymakers when designing regional, national and supranational carbon pricing systems. They are equally key for negotiators involved in negotiating rules for international cooperation under Article 6 of the Paris Agreement, and for independent bodies when developing rules for high-integrity carbon credits.

In this regard, ICC has outlined the main existing principles, in particular: (1) the ICC Carbon Pricing Principles, specifically dedicated to the development of compliance markets, (2) the Core Carbon Principles developed by the Integrity Council for the Voluntary Carbon Market (ICVCM), and (3) the Article 6 Rulebook setting out the conditions and rules for emissions trading between countries within the UN system under Article 6 of the Paris Agreement, to determine key commonalities and differences.

The main similarities and differences are outlined in the table in Annex II.

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Annex I:

Existing instruments and measures to address carbon leakage

Border carbon adjustments

A border carbon adjustment (BCA) works by imposing a charge on specified imported goods according to their level of embedded carbon. Depending upon the design of the BCA, the definition of embedded carbon can cover direct and indirect emissions. A BCA therefore requires agreed systems of quantifying and verifying embedded carbon.

Whilst BCAs are being considered by a number of countries, the most developed BCA policy/measure/mechanism is the European Union Carbon Border Adjustment Mechanism (CBAM) which seeks to reduce the risk of carbon leakage and to level the field for European industries working towards decarbonisation of their production processes.

In July 2021, as part of the “Fit for 55” package, the Commission adopted its proposal for a regulation establishing a Carbon Border Adjustment Mechanism (CBAM)—a trade measure which seeks to address the risk of carbon leakage by imposing a levy on imports of certain GHG emissions intensive goods from outside the EU.⁴⁶ A political agreement was then reached in December 2022 by the European Parliament and the Council on the Commission’s proposal and the CBAM Regulation was finally signed on in May 2023. The CBAM itself entered into application on 1 October 2023 in its transitional phase, with the first reporting period for importers ending end of January 2024.

The EUCBAM is aimed at putting a fair price on the carbon emitted during the production of carbon intensive goods that are entering the EU—in the transitional phase this will only apply to imports of cement, iron and steel, aluminium, fertilisers, electricity and hydrogen, and to encourage less emissions intensive industrial production in non-EU countries. The gradual introduction of the CBAM is aligned with the phase-out of the allocation of free allowances under the EU Emissions Trading System (ETS) to support the decarbonisation of EU industry. By confirming that a price has been paid for the embedded carbon emissions generated in the production of certain goods imported into the EU, the CBAM will ensure the carbon price of imports is equivalent to the carbon price of domestic production.⁴⁷

The EU CBAM takes into account the carbon pricing policies that may exist in other countries, applying an adjustment on the import side for countries that already have their own carbon pricing. The objective is that emissions are priced, preferentially in the country of origin and, if not, upon arrival in the EU.

A CBAM transitional registry, as well as written guidance documents including a series of sector-specific factsheets and a step-by-step checklist, have been prepared by the Commission to help importers navigating the transitional phase and practically implementing the new rules.

As noted above, other countries are also considering the use of BCAs. In June 2023, the UK completed an open consultation specifically on addressing carbon leakage risk to support decarbonisation, including other mitigating policies, such as carbon clubs, mandatory product standards and demand side policies.

46 European Commission, (2021), ‘Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism’ <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52021PC0564>

47 European Commission, (2023), ‘Carbon Border Adjustment’, Taxation and Customs Union https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

The Government of Canada initiated public consultations in the fall of 2021 exploring the use of BCAs for a variety of fossil fuel and emissions-intensive trade-exposed (EITE) sectors, which account for more than 70% of Canada's export⁴⁸ (Niel Campbell et al., 2023). Input received through this consultation will assist the government in the next steps in the consideration of border carbon adjustments. The formal consultation has concluded, but a draft regime has not as yet been proposed.

US Senator Sheldon Whitehouse (D-RI) introduced a bill in early June 2022 called the "Clean Competition Act" which proposes a carbon border adjustment in the US to incentivise foreign producer decarbonisation. The plan was to establish a \$55 per ton price on carbon, with an increase of 5 percent above inflation each year. The bill is active but is not expected to pass.

Free allowances under an emissions trading system

Under an emissions trading system (ETS), the government sets the limit of emissions to be produced by covered industries—which are typically heavy emitting industries such as iron and steel, aluminum, cement, glass, and power plants. Emission allowances (emission permits) are then auctioned or distributed for free to most energy-intensive industries considered at risk of carbon leakage, in order to safeguard the competitiveness of these regulated industries where the carbon price could trigger the relocation of production. These permits or allowances can be traded between companies and other market participants. While the government therefore sets the maximum amount of CO₂ which can be produced, the market sets the price.

In the EU ETS, free allowance allocation is used. Under the revised EU ETS Directive, the system of free allocation will be prolonged for phase 4 of the EU ETS (2021-2030). Free allocation⁴⁹ will focus on sectors at the highest risk of relocating their production outside of the EU (European Commission, 2019). For less exposed sectors, free allocation is foreseen to be phased out after 2026 from a maximum of 30% to 0% at the end of phase 4 (2030). The list of sectors deemed to be at the risk of carbon leakage was updated in 2019 and will be valid for the period 2021-2030.⁵⁰

Carbon tax reliefs

A carbon tax can be applied to industry on the basis of volumetric fuel consumption or on a direct emission basis. The former method applies the tax to particular fuels depending upon their carbon content; the latter applies the tax to a particular business or installation based on its emissions. In either case a reduction in compliance obligations can be administered to support energy intensive trade exposed sectors (EITE) industries. This could consist of an exemption, a rebate of tax or a reduction.

Output-Based Pricing System

Canada provinces and territories have flexibility to develop their own carbon pricing systems as long as they meet the so called "Federal Carbon Pollution Pricing Benchmark"—a set of minimum national stringency criteria.⁵¹

48 Neil Campbell, A., Gordner, T. and Page, L. (2023) The EU's New Carbon Border Adjustment Mechanism in Action: Impacts on Canada and Beyond, Mcmillan International Trade Bulletin <https://mcmillan.ca/insights/publications/the-eus-new-carbon-border-adjustment-mechanism-in-action-impacts-on-canada-and-beyond/>

49 European Commission, (2021), 'Allocation to industrial installations' Energy, Climate Change Environment. https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/free-allocation/eu-emissions-industrial-installations_en

50 European Commission (2019), 'Delegated Decision supplementing Directive 2003/87/EC of the European Parliament and the Council concerning the determination of sectors and subsectors deemed at risk of carbon leakage for the period 2021 to 2030' <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D0708&from=EN>

51 Government of Canada, (2022), The federal carbon pollution pricing benchmark <https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/carbon-pollution-pricing-federal-benchmark-information.html>

The federal carbon pricing system applies as a “backstop” in provinces/territories that either request it or that design a system that fails to meet the minimum stringency requirements. A federal carbon pricing backstop provides a minimum level of ambition that applies in any province or territory that does not have a carbon pricing system that meets the benchmark criteria. A province may also choose to apply this rather than introduce its own rules.

Part of the Carbon Pollution Pricing Benchmark is a performance-based system for industry, known as the federal Output-Based Pricing System (OBPS). This system is designed to maintain the carbon price signal for industrial emitters to reduce their GHG emissions, while setting output-based emissions standards for various products based on the risk of carbon leakage and competitiveness impacts.

The federal OBPS applies to facilities in the emissions-intensive and trade-exposed industrial and electricity sectors that emit 50,000 tCO₂e annually or more. Smaller facilities with annual emissions 10,000 tCO₂e or more from sectors at risk of carbon leakage and adverse competitiveness impacts can apply to participate voluntarily (International Carbon Action Partnership, n.d). Several Canadian jurisdictions have also implemented their own OBPS.

Additional literature and studies for consideration

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Annex II: Comparison of core features of carbon market mechanisms

	National/sub-national compliance mechanisms	Voluntary carbon market mechanisms	International mechanisms, Paris Agreement, Article 6
Legal Basis	Domestic law, national or local government regulation	Private international law, contract	International law, Paris Agreement, Article 6
Definitions	Required by law to reduce emissions	Volunteers to offset emissions	The Paris Agreement's carbon trading clause
Motivations	Regulations (cap)	Pre-compliance (CSR)	Encourage cross-border carbon trading
Types	Specific sectors/methodologies	Scope much broader	Country-specific scope
Location	Regional/national	Global	G2G or G2B
Price	Convergence to compliance price target	Pre-compliance CSR	Price dependent on country's circumstances
Examples	EU ETS, Singapore carbon tax, Canada carbon pricing	VCMI, Verra	Switzerland-Ghana Article 6 trade
Regulator	National/local government regulator	Industry body (ICVCM?)	Approval & authorisation, validation, registration, monitoring, verification and issuance in accordance with the relevant requirements adopted by the Supervisory Body
Form	Penalty market-based emission allowances/permits subject to cap-and-trade schemes (ETS). Penalty static mechanisms (carbon tax). Subsidies/incentives	Voluntary carbon credit generated from activities or assets that reduce or remove emissions (e.g. nature-based solutions)	Compliance-based internationally transferred mitigation outcomes

	National/sub-national compliance mechanisms	Voluntary carbon market mechanisms	International mechanisms, Paris Agreement, Article 6
Registry	ETS regulatory registry (eg EU ETS Union Registry)	Industry body (Verra, Gold Standard?)	
Origin ICC Carbon Pricing Principle 2: Create a reliable, predictable overall framework:	Free allocation or auction by regulator	<p>Additionality: The greenhouse gas (GHG) emission reductions or removals from the mitigation activity shall be additional, i.e., they would not have occurred in the absence of the incentive created by carbon credit revenues.</p> <p>Permanence: The GHG emission reductions or removals from the mitigation activity shall be permanent or, where there is a risk of reversal, there shall be measures in place to address those risks. and compensate reversals.</p>	<p>ITMO: Authorised transfer for use: a) towards an NDC; b) for other international purpose.</p> <p>Real, verified, and additional.</p> <p>Activity: shall be designed to achieve mitigation of GHG emissions that is additional, including reducing emissions, increasing removals and mitigation co-benefits of adaptation actions and/or economic diversification plans (hereinafter collectively referred to as emission reductions), and not lead to an increase in global emissions</p> <p>Transition of clean development mechanism activities: CDM activities (projects and POAs) would transition to the Art 6.4 under certain deadlines</p>
Use ICC Carbon Pricing Principle 2: Create a reliable, predictable overall framework	Limited, defined industry sectors (e.g., energy generation or industry)	<p>VCMI Rules—ADD</p> <p>No double counting: The GHG emission reductions or removals from the mitigation activity shall not be double counted, i.e., they shall only be counted once towards achieving mitigation targets or goals</p>	<p>“Each participating Party shall ensure that its participation contributes to the implementation of its NDC and long-term.”</p> <p>“Each participating Party shall apply corresponding adjustments in a manner that ensures transparency, accuracy, completeness, comparability and consistency.”</p>

National/sub-national compliance mechanisms	Voluntary carbon market mechanisms	International mechanisms, Paris Agreement, Article 6
<p>Governance</p> <p>ICC Carbon Pricing Principle 2: Create a reliable, predictable overall framework</p> <p>ICC Carbon Pricing Principle 3: Promote consistency between climate, energy, trade and taxation policies</p> <p>ICC Carbon Pricing Principle 4: Create a clear and robust transparency framework</p>	<p>Effective governance: The carbon-crediting program shall have effective program governance to ensure transparency, accountability, continuous improvement and the overall quality of carbon credits.</p> <p>Tracking: The carbon-crediting program shall operate or make use of a registry to uniquely identify, record and track mitigation activities and carbon credits issued to ensure credits can be identified securely and unambiguously.</p> <p>Transparency: The carbon-crediting program shall provide comprehensive and transparent information on all credited mitigation activities. The information shall be publicly available in electronic format and shall be accessible to non-specialised audiences, to enable scrutiny of mitigation activities.</p> <p>Robust independent third-party validation and verification: The carbon-crediting program shall have program-level requirements for robust independent third-party validation and verification of mitigation activities.</p>	<p>Mechanism methodologies shall encourage ambition over time; encourage broad participation; be real, transparent, conservative, credible, below 'business as usual'; avoid leakage, where applicable; recognize suppressed demand; align to the long-term temperature goal of the Paris Agreement, contribute to the equitable sharing of mitigation benefits between the participating Parties; and, in respect of each participating Party, contribute to reducing emission levels in the host Party; and align with its NDC, if applicable, its long-term low GHG emission development strategy if it has submitted one and the long-term goals of the Paris Agreement.</p> <p>The request for transition by project participants has to take place before 2023; the approval by the Supervisory Board has to take place by 2025 and methodologies could be used for a certain period.</p>

National/sub-national compliance mechanisms	Voluntary carbon market mechanisms	International mechanisms, Paris Agreement, Article 6
<p>Effectiveness</p> <p>ICC Carbon Pricing Principle 1: Focus on GHG emissions reduction as prime target, including the prevention of GHG leakage</p>	<p>Robust quantification of emission reductions and removals: The GHG emission reductions or removals from the mitigation activity shall be robustly quantified, based on conservative approaches, completeness and sound scientific methods</p> <p>Contribution to net zero transition</p>	<p>Corresponding adjustments (CA): When an international transfer is authorized for these uses, it then requires that a corresponding adjustment be undertaken. Transfers that are not authorised could potentially be used for domestic purposes, results-based finance, or voluntary corporate targets.</p> <p>Delivery of overall mitigation in global emissions shall be enhanced through mandatory cancellation of Article 6.4 ERs that are also accounted for</p>
<p>Collateral Benefits</p> <p>ICC Carbon Pricing Principle 5: Maintain accessibility to and affordability of low-carbon and clean energy sources</p> <p>ICC Carbon Pricing Principle 8: Couple carbon pricing with climate change mitigation and adaptation</p>	<p>Sustainable development benefits and safeguards</p>	<p>Levy of share of proceeds for adaptation and administrative expenses</p> <p>“The share of proceeds to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation shall be comprised of a levy of 5 per cent of A6.4ERs at issuance”</p> <p>Share of proceeds (similar to Article 6.4 provisions) and overall mitigation of global emissions</p> <p>“Participating Parties and stakeholders using cooperative approaches are strongly encouraged to commit to contribute resources for adaptation, in particular through contributions to the Adaptation Fund. [...] and to take into account the delivery of overall mitigation in global emissions under the mechanism established by Article 6, paragraph 4”</p>

	National/sub-national compliance mechanisms	Voluntary carbon market mechanisms	International mechanisms, Paris Agreement, Article 6
<p>Cooperation Scope</p> <p>ICC Carbon Pricing Principle 6: Promote international linking of carbon pricing instruments</p> <p>ICC Carbon Pricing Principle 9: Ensure international cooperation for greater consistency globally</p>			<p>Guidance on cooperative approaches referred to in Article 6.2 low-emission development strategy, if it has submitted one, and the long-term goals of the Paris Agreement.</p>
<p>Consultation/collaboration</p> <p>ICC Carbon Pricing Principle 10: Develop mechanisms through inclusive and transparent consultation with business and other key stakeholders</p>			
<p>Flexibility</p> <p>ICC Carbon Pricing Principle 7: Recognise that there is no “one-size-fits-all” single instrument</p>			

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