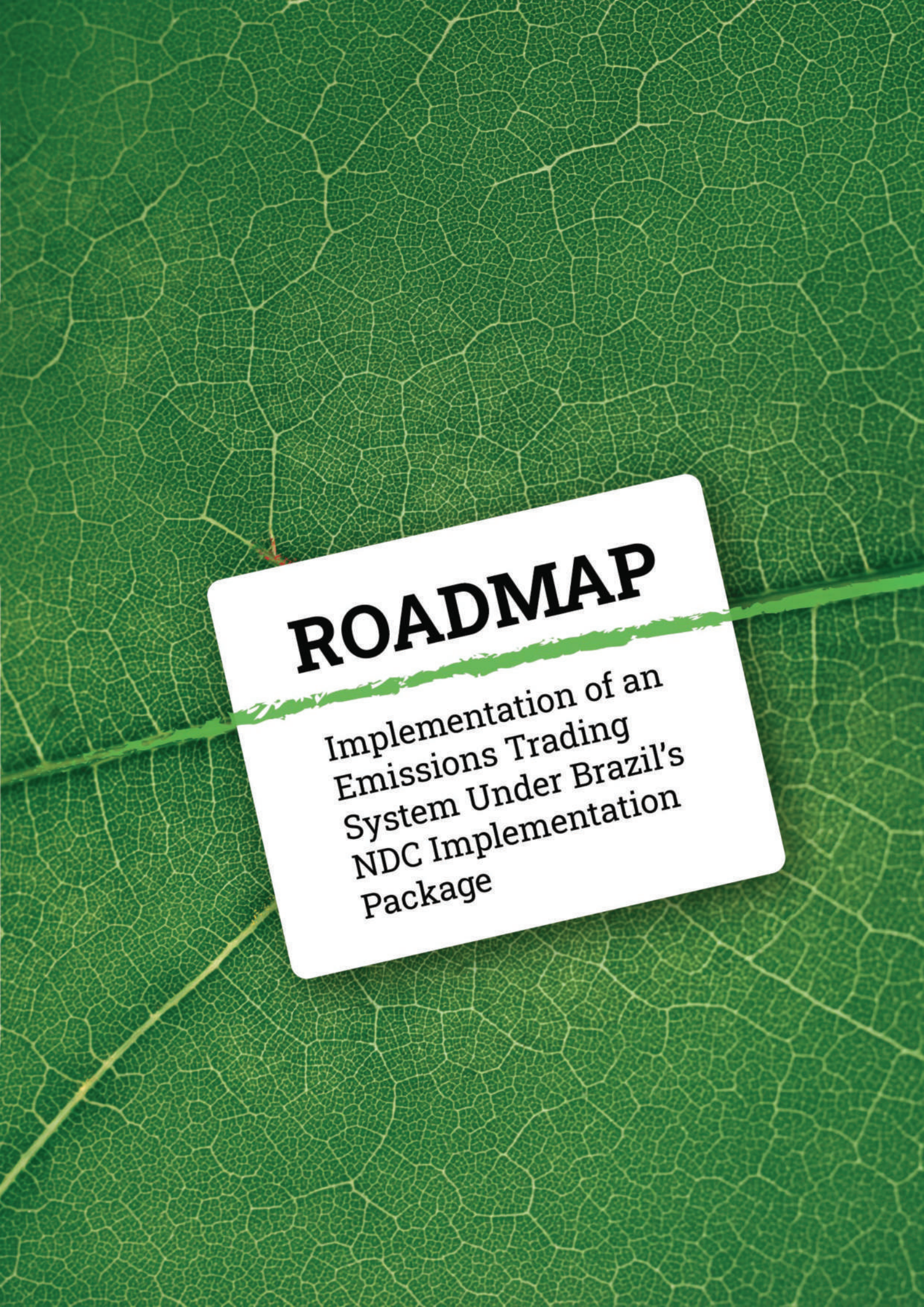

ROADMAP
Implementation of an Emissions Trading System Under Brazil's NDC Implementation Package

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Abbreviations and acronyms

CBAM	Carbon Border Adjustment Mechanism
CBEs	Brazilian Emissions Quota or SBCE allowances
CC	Brazil's Civil House
CCP	Core Carbon Principles
CDM	Clean Development Mechanism
CH_4	Methane
CIM	Interministerial Council on Climate Change
CRVEs	Certificates of Verified Emission Reduction or Removal
CO_2	Carbon dioxide
CONAREDD+	National REDD+ Commission
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CVM	Comissão de Valores Mobiliários
EEX	European Energy Exchange
EITE	Emissions Intensive Trade Exposed
ETP	Ecological Transformation Plan
ETS	Emissions Trading Sysem
EU	European Union
FGVces	Fundação Getulio Vargas
GHG	Greenhouse gas
GTT	Technical working group
HFC	Hydrofluorocarbon
IBAMA	Brazilian Institute of Environment and Renewable Resources
ICAP	International Carbon Action Partnership
ICE	Intercontinental Exchange
ICVCM	Integrity Council for the Voluntary Carbon Market
INMETRO	Instituto Nacional de Metrologia, Qualidade e Tecnologia
ITMOs	Internationally Transferred Mitigation Outcomes
LULUCF	Land use, land-use change and forestry
MAPA	Ministry of Agriculture and Livestock
MCTI	Ministry of Science, Technology and Innovation
MDIC	Ministry of Development, Industry, Trade and Services
MF	Ministry of Finance

MGI	Ministry of Management and Innovation in Public Services
MMA	Ministry of Environment and Climate Change
MME	Ministry of Mines and Energy
MPI	Ministry of Indigenous Peoples
MPO	Ministry of Planning and Budget
MRE	Ministry of Foreign Affairs
MRV	Monitoring, Reporting and Verification
NAP	National Allocation Plan
NDC	Nationally Determined Contribution
N_2O	Nitrous Oxide
PFCs	Perfluorochemicals
Plan ABC+	Sectoral Adaptation Plan for Low Carbon Agriculture for Sustainable Development
Plano Clima	Brazil's National Climate Change Plan
PMI	Partnership for Market Implementation
PMR	Partnership for Market Readiness
PNE 2050	Brazil's National Energy Plan
PNL	Brazil's National Logistics Plan
PNMC	Brazil's National Policy on Climate Change
PNR-GEE	Programa Nacional de Relato de Gases de Efeito Estufa
PPCDAm	Forest Code and the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon
PTAC	Permanent Technical Advisory Committee
REDD+	Reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
RenovaAgro	Sustainable Development Plan for Low Carbon Agriculture
RGGI	Regional Greenhouse Gas Initiative
RIA	Regulatory Impact Assessment
SBCE	Sistema Brasileiro de Comércio de Emissões de Gases de Efeito Estufa
SF_6	Sulfur Hexafluoride
SIRENE	Sistema de Registro Nacional de Emissões
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
WCI	Western Climate Initiative

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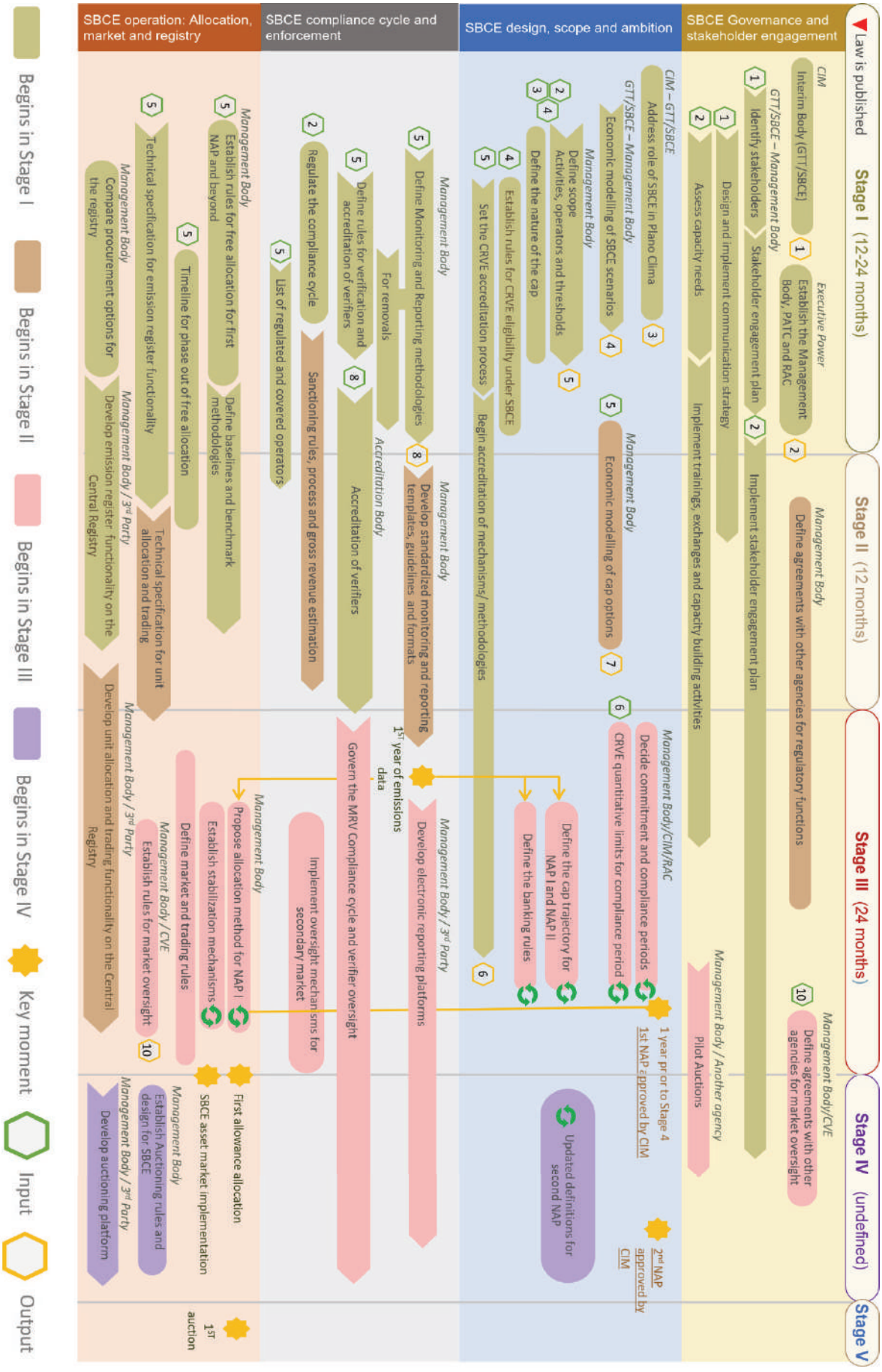
1. Executive Summary

Overview/context

The passage of the *Sistema Brasileiro de Comércio de Emissões de Gases de Efeito Estufa* (SBCE) Law is a significant milestone. The Brazilian Emissions Trading System Law sets the foundations for a comprehensive carbon pricing package that will help ensure Brazil meets its GHG emissions reduction targets set out in its NDC. The next task is implementing the SBCE. To expedite implementation and to ensure a successful carbon pricing regime, the Government of Brazil (GoB), with technical assistance through the World Bank's Partnership for Market Implementation program, has developed a SBCE Implementation Roadmap.

The Roadmap provides an overview of the steps required to implement the SBCE. It prioritizes activities during each stage of the implementation of the system and identify critical dependencies that will need to be considered. Importantly, the Roadmap highlights the effort required across the five stages of implementation described in the Law and across four thematic areas, described in the following visual roadmap figure, which shall be dynamically updated according to the priorities of the GTT SBCE/CIM (Temporary Technical Group) with the objective of preparing a proposal for regulation and implementation of the SBCE established by the resolution n. 4 of the Interministerial Committee on Climate Change on October 26th 2023), co-led by Ministry of Finance and Ministry of Environment and Climate Change.

Figure 1 - Visual Representation of the SBCE Roadmap



The figure outlines the sequence of key activities and milestones essential for the successful SBCE implementation. It visually represents the stages from the initial design to the final implementation, divided across the four thematic areas. Dependences between activities are depicted with numbers linking process outputs and inputs, showing the flow and reliance of certain activities on the completion of others. The milestones are marked with stars throughout the stages. These include critical moments established in the Law, like the publication of the National Allocation Plan (NAP), first allowance allocation, and the implementation of the SBCE asset market.

It also emphasizes that the successful implementation of later stages relies on the timely and proper completion of tasks in earlier stages. For instance, the design of cap trajectories, banking rules, and secondary market trading platforms depend on earlier definitions such as the scope of regulation, on the establishment of governance bodies and on MRV data collection. Each stage transition signifies moving from planning and rule-setting to operational aspects like market participation, auctioning, and monitoring, eventually leading to full implementation.

Thus, the figure highlights the interdependence involved in implementing the SBCE, showing the need for careful planning and coordination across different thematic areas to reach the final stages of execution. Its core features are elaborated below.

Implementation stages

The SBCE Law sets out five stages for implementation, strategically framed to ensure the SBCE is systematically and methodically implemented to deliver a high integrity carbon market.

- Stage I for issuing regulations (12-24 months). The priorities for this stage include first and foremost establishing the SBCE managing body and the institutional arrangements for its action (e.g. cooperation with other bodies). Other priorities include undertaking analysis to inform the thematic areas and the definition of SBCE's specific design details – such as the sectors/activities to be regulated and the inclusion thresholds, which will enable the final definition of regulated agents under the monitoring, reporting, and verification (MRV) and SBCE regulations -, and developing both the GHG MRV specific regulation and a stakeholder engagement plan, for which it will be important to define and involve the members of the technical advisory committee.
- Stage II to make the emissions reporting instruments operational within regulated entities (12 months). The priorities for this stage include to finalize the identification of regulated entities with compliance obligation starting in stage III, to develop core infrastructure elements – in particular the GHG MRV module of the SBCE Central Registry to be used in stage III -, to establish a governance framework for compliance and enforcement, to accredit GHG reports verifiers, and to conduct training and capacity building activities, in particular with regulated parties to allow for smooth operation under stage III.
- Stage III makes the obligation to submit monitoring plan and emissions reporting enforceable (24 months). Priorities for this stage include implementing a robust GHG MRV system, elaborating the first National Allocation Plan - importantly the SBCE cap trajectory under the first compliance period and its duration -, determining free allocation rules, and establishing market participation rules and oversight functions and mechanisms.

- Stage IV begins with the enactment of the first National Allocation Plan (NAP), with free distribution of emissions quotas and the development of the trading market. The first NAP will be valid for at least 12 months after its enactment, while its final duration will need to be defined in previous phases. This stage will include the first free allowance allocations, the establishment of the auction platform for stage V, the elaboration of the second NAP, and the continuous monitoring and revision of the system to address any issues and ensure appropriate operation of the system for its full implementation on stage V.
- Stage V is the full implementation of the SBCE at the end of the first NAP and includes the first auction of allowances.

Thematic areas

SBCE Governance, Stakeholder engagement and Knowledge Sharing

This thematic area focuses on building a strategic framework to ensure robust governance structures, effective market regulation, active involvement of stakeholders, and continuous learning. An early priority is establishing the governance bodies to deliver the elaboration of specific SBCE rules and procedures through subordinate regulation, as well as the oversight, coordination, and guidance necessary to ensure the effective implementation and operation of the SBCE, in particular the SBCE Management Body. Another priority is establishing an engagement plan and communication strategy, noting that undertaking honest, comprehensive and regular stakeholder engagement is fundamental to successful SBCE implementation and resilience, and cuts across all stages and thematic areas. For this, it will be important to establish the SBCE technical advisory committee and regulatory affairs chamber and involve them as early as possible.

SBCE Design, Scope, and Ambition

The thematic area of "Design, scope and ambition" comprises all activities related to the coverage and stringency of the SBCE, including the goals of the scheme, setting of caps and defining regulated entities. This area prioritizes analytics to help define the role and characteristics of the SBCE, providing clarity on the scope of coverage, that is, which sectors and activities will be covered by the SBCE, and to what quantity of GHG emissions this will amount to. This thematic area will provide analysis to inform the level of the cap (i.e. emission limit) and the rules for the usage of carbon credits within the SBCE (the so-called Certificates of Verified Emissions Reductions and Removals – CRVE), including accepted methodologies and limits. These are critical to understanding the overall coverage, stringency and ambition of the regulation.

SBCE Compliance Cycle and Enforcement

The thematic area of compliance and enforcement will clarify the obligations of regulated entities, in particular monitoring and reporting emissions, the verification process, and the

submissions of verified emissions reports and SBCE compliance reports. It also covers the sanctioning process for the case of non-compliance with SBCE obligations.

SBCE Operation: Unit Allocation, Market and Registry

The thematic area of allocating, trading, and tracking allowances will establish the rules and procedures for allocating, buying, selling, and tracking allowances to help ensure a robust, liquid and efficient market. This includes initial allocation methods and the process for transition from free allowance allocations to auctioning over time. This thematic area will consider the eligibility and rules for participating within the SBCE, infrastructure functionality requirements (e.g. trading platforms and registry systems, and the interoperability between platforms), and the appropriate levels of oversight. This will also investigate the potential role of price stabilization mechanisms.

The Partnership for Market Implementation: harnessing international experience for SBCE development

The Ministry of Finance (MoF) led the development of an initial SBCE Implementation Roadmap with technical assistance from World Bank's Partnership for Market Implementation (PMI) program and consultation across the key ministries of the GTT SBCE. The Roadmap provides a practical guide to help prioritize the critical activities needed to implement the SBCE. It is intended to reflect the current state of play and capture the shifting GoB's priorities, meaning it will be a "living document" that will be adjusted over time. This includes ensuring it reflects the PMI's technical assistance facilitated the delivery of advice and insights on key elements of ETS policy design, the sharing of experiences from other countries, and the identification of supporting infrastructure requirements (e.g. registry systems). The PMI has also supported an updated assessment of the macroeconomic impacts of carbon pricing in Brazil, which was originally undertaken as part of the Partnership for Market Readiness.

In recognition of the significant efforts required to implement the SBCE, the World Bank, through the PMI, is set to continue to assist Brazil, allowing the government to leverage international experience to help ensure a high integrity and efficient compliance market and to promote a seamless integration with carbon credit markets. This includes the potential to support the GoB across strategic themes, such as capacity building, stakeholder engagement, and information dissemination. It also provides the opportunity to support in-depth technical analyses to inform the fundamentals that underpin robust compliance and voluntary carbon markets. This is particularly critical during Stage I, which focuses on establishing specific SBCE regulations. The set of activities to be funded through future PMI support are being finalized to ensure the work program can meet the GoB's needs, enabling the robust and swift implementation of this cornerstone instrument for Brazil's climate policy. Framework presented by Law 15.042

Countries incorporate Emissions Trading Systems (ETS) into their legal frameworks using a variety of approaches. These methods balance the need for robust statutory foundations with the flexibility for implementation and adaptation by delegating design elements to subordinate normative instruments, such as directives or administrative regulations. Typically, these approaches fall on a spectrum: some countries integrate extensive design elements into formal statutory law, while others delegate most of the design and operational aspects to subordinate instruments.

The roadmap for ETS implementation in Brazil uses Law 15.042 (SBCE Law) as its foundational starting point. Given the inherent complexity and rigidity of legal reform, the roadmap identifies the key design elements included in the SBCE Law and provides design and implementation options that can be introduced through the regulation. The main decisions in the law are briefly presented below, followed by those that will be defined in subordinate instruments.

General provisions on SBCE Law

Phased implementation:

- The SBCE will be implemented in five stages (Art. 50). Stage I for issuing regulation (12-24 months). Stage II to make the emission reporting instruments operational (12 months). Stage III makes the obligation to submit monitoring plan and emissions reporting enforceable (24 months), Stage IV begins with the enactment of the first NAP, with free distribution of quotas and the development of the trading market, Stage V is the full implementation of the SBCE at the end of the first NAP.

General principles:

- Principles include gradual implementation, harmonization with other climate instruments, compatibility and articulation between SBCE and the NDCs, participation and cooperation between stakeholders, transparency, predictability and legal certainty, promoting competitiveness, fair and cost-effective GHG emissions mitigation, conservation of native vegetation and reservoirs, rights and autonomy of indigenous peoples and traditional peoples and communities (Art. 1 and Art. 2)

Legal nature of SBCE Assets

- Carbon credits are tradable, autonomous assets, legally defined as civil fruits in the case of forestry credits (except for those from jurisdictional programs), representing 1 tCO_2e of verified emissions reduction, removal, or capture, following approved methodologies (Art. 2, VII).
- CBEs and CRVEs are only recognized within SBCE through the act of registration (Art. 10, Sole Paragraph).
- CBEs, CRVEs and carbon credits traded on the financial and capital markets are classified as securities, subject to the regime of Law no. 6385 of 7 December 1976 (Art. 14)

Legal Provisions on design, scope and ambition

Scope of the SBCE:

- The SBCE is established to regulate GHG emissions, reductions and removals in Brazil (Art. 1).
- The Law defines key terms such as sources, activities, installations, and operators under the SBCE (Art. 2).
- Agricultural production, and its associated assets, infrastructure and rural properties are excluded from obligations under the SBCE (Art. 1 §2). Indirect emissions resulting from the production of agricultural inputs will not be covered by obligations either. (Art. 1 §3).
- The Law sets a minimum inclusion thresholds of 10,000 tCO2e for monitoring and reporting obligations (Art. 30, I).
- The Law sets a minimum inclusion thresholds of 25,000 tCO2e for obligations to surrender CBEs corresponding to their emissions at the end of each commitment period (or sooner if the Management Body decides) (Art. 30, II).
- The Law includes the possibility to increase the thresholds by an act of the Management Body (Art. 30 §1)
- The threshold for reporting and compliance under the SBCE will not be applicable to the treatment and disposing of solid waste and liquid effluents in an environmentally appropriate manner, if they can demonstrate the adoption of technologies to neutralize their emissions (Art. 30 §3)

SBCE cap-setting and commitment periods defined in National Allocation Plans (NAPs)

- The Law requires that emission caps be aligned with PNMC targets (Art. 5, IV).
- The Law requires the NAPs to establish maximum emissions limits per commitment period (Art. 21, I).
- The Law mandates that NAPs must estimate emission cap trajectories for two future commitment periods (Art. 21, IV).
- The Law requires NAP approval at least 12 months before its validity period begins (Art. 21, §1, II).
- The Law defines compliance periods, which may be equal to or shorter than commitment periods (Art. 34).

Banking (Art. 11 II)

- Use of allowances across different commitment periods will be defined by the SBCE regulations and authorized by the NAP.

Use of CRVEs for compliance (Art. 10, 12 and Chapter IV, Chapter II, Section III, Subsection I)

- The Law establishes that CRVEs are permissible for offsetting compliance obligations (Art. 12).

- The Law prohibits the direct conversion of voluntary market carbon credits into CRVEs unless recognized under an accredited methodology that recognizes the effective reduction of GHG emissions or removals (Art. 42).
- The Law assigns responsibility to the Management Body for setting requirements and procedures for accrediting and de-accrediting CRVE methodologies (Art. 8, XVII).
- The Law defines accreditation criteria for CRVE methodologies, emphasizing credibility, environmental integrity, and safeguards against double counting (Art. 25).
- The Law specifies that CRVEs must be verified by an independent entity and registered in the SBCE Central Registry (Art. 44)
- The Law requires that accreditation of methodologies consider alignment with international treaties (Art. 25, §2).
- The Law grants the Management Body authority to define CRVE limits for compliance under the SBCE (Art. 8, XXIV).

Legal provisions on compliance and enforcement

Obligations of regulated entities:

- Operators above the 10,000 tCO2e threshold are required to submit a monitoring plan for each commitment period and obtain the approval of the Management Body as well as to submit annual reports on GHG emissions and removals in accordance with the monitoring plan (Art. 29, 31 and 32).
- The reporting of GHG emissions and removals will be submitted by the operator to a conformity assessment process, conducted by an accredited inspection body (Art. 32, sole paragraph). The data from the reports will be entered into the SBCE registry (Art. 33).
- Operators above the 25,000 tCO2e thresholds will be subject to the obligations above and will also have the obligation to surrender SBCE assets that in a quantity equivalent to its emissions in the respective period (Art. 34).
- Operators with obligations to surrender assets will submit an annual report on the periodic reconciliation of obligations to the SBCE Management Body (Art. 34, Sole paragraph).
- The Law conditions the applicability of the obligations above, to activities for which there are consolidates measurement, reporting and verification methodologies defined by the Management Body (Art 30, §2)
- Entities involved in asset trading must comply with regulations governing the issuance, transfer, and cancellation of compliance units (CBEs and CRVEs) (Art. 10, 11)

Legal provisions on the allocation, trading and tracking of allowances

Allowance allocation

- CBEs will be distributed either free of charge or for consideration through auctions or other administrative instruments, as determined by the SBCE Management Body (Art. 11, §1)
- The NAPs will determine the distribution of allowances, including methods for free allocation or auctioning (Art. 21).

- The first NAP will feature free allocation only (Art. 50).
- The progressive introduction of auctioning for CBEs will follow the implementation phases of the SBCE (Art. 50, §3)
- The NAP may establish different allocation methodologies based on technological development, marginal abatement costs, historical efficiency gains, and other parameters (Art. 21, §3)

Asset ownership and trading

- Asset creation and ownership linked to the asset's registration in the SBCE Central Registry (Art. 10).
- The NAP will establish the criteria for transactions of net removals of GHG emissions for each commitment period (Art. 21, VI)
- The Law establishes the ownership framework for carbon credits, including federal, state, municipal, and private rights (Art. 43).
- Trading in financial and capital markets is possible, subject to the jurisdiction of the Securities Commission (Chapter II, Section III, Subsection II).
- The Law establishes the SBCE Central Registry functions, principles, and governance (Art. 23 and 24).

Price control and stability measures defined in the regulation and the National Allocation Plans

- The SBCE Management Body will define and implement price stabilization mechanisms for CBEs to manage price volatility in the market (Art. 2, XVII, Art. 8, XVI, Art. 21, V)
- The SBCE Management Body may consider mechanisms to promote international competitiveness, such as border adjustment measures (Art. 21, §2, Art. 8, XXVI)
- Each NAP will establish the management and operation of the price stabilization mechanisms for the assets under the SBCE (Art. 21, V)

Legal provisions on governance, stakeholder engagement, and knowledge development

- The SBCE Law specifies governance structures, including the Management Body and the Interministerial Committee on Climate Change (CIM) (Art. 6 to 9)
- The governance framework also includes the Permanent Technical Advisory Committee and the Regulatory Affairs Committee, which provide technical and regulatory oversight.

Interministerial Committee on Climate Change (CIM)

- The CIM is the decision-making body of the SBCE, responsible for defining high-level policy directions (Art. 7)
- It establishes general guidelines for the SBCE, ensuring alignment with national climate objectives. (Art. 7, I)
- It approves the National Allocation Plan (NAP), defining emissions caps and allocation strategies (Art. 7, II).

- It has the authority to create technical groups to provide specialized input and recommendations on SBCE improvements (Art. 7, III).
- It approves the annual plan for fund allocation, determining the use of revenues collected from auctions and penalties (Art. 7, IV).
- Regulations will define the consultation mechanisms between CIM and the Permanent Technical Advisory Committee and Regulatory Affairs Committee (Art. 7, last para.).

Management Body

- The Management Body is the executive body of the SBCE, responsible for normative, regulatory, executive, sanctioning, and appeals powers (Art. 8).
- It regulates the SBCE asset market and ensures compliance with CIM's guidelines (Art. 8, I).
- It defines monitoring methodologies and reporting and verification procedures for emissions, reductions, and removals (Art. 8, II, VI, VII).
- It determines which activities, facilities, sources, and gases will be regulated under the SBCE for each commitment period (Art. 8, III).
- It sets emissions thresholds that define which operators must comply with SBCE obligations (Art. 8, IV, V; Art. 30).
- It implements price stabilization mechanisms for compliance units (CBEs) to manage market volatility (Art. XVI).
- It receives and evaluates monitoring plans, GHG emissions and removals reports, and reports of reconciliation of obligations (Art. 8, XIII, XIV, XV).
- It oversees the issuance, auctioning, and distribution of CBEs and regulates the use of CRVEs (Verified Emissions Reductions Certificates) and the establishment and management of the Central Registry (Art.8, IX, X, XI, XXII, XIII, XVII, XVIII, XIX, XXIV).
- It establishes rules and processes for linking the SBCE with ETS and international organizations (Art 8. XXI)
- It enforces penalties for non-compliance, including fines and trading restrictions, and acts as appeal stance (Art. 8, XXII, XXIII).

Permanent Technical Advisory Committee

- The Permanent Technical Advisory Committee serves as an advisory body to the SBCE, offering expert insights to improve the system (Art. 9)
- It provides recommendations on: Accreditation and de-accreditation methodologies for CRVEs; Technical criteria for the National Allocation Plan; Scientific and policy guidance on emissions reductions and removals; The annual resource allocation plan, ensuring funds are used effectively.
- The committee includes representatives from the Union, States, and Federal District, sectoral organizations, academia, and civil society (Art. 9 §1).
- It houses the Regulatory Affairs Committee, a specialized group focused on regulatory coherence. (Art. 9 §2).

Regulatory Affairs Committee

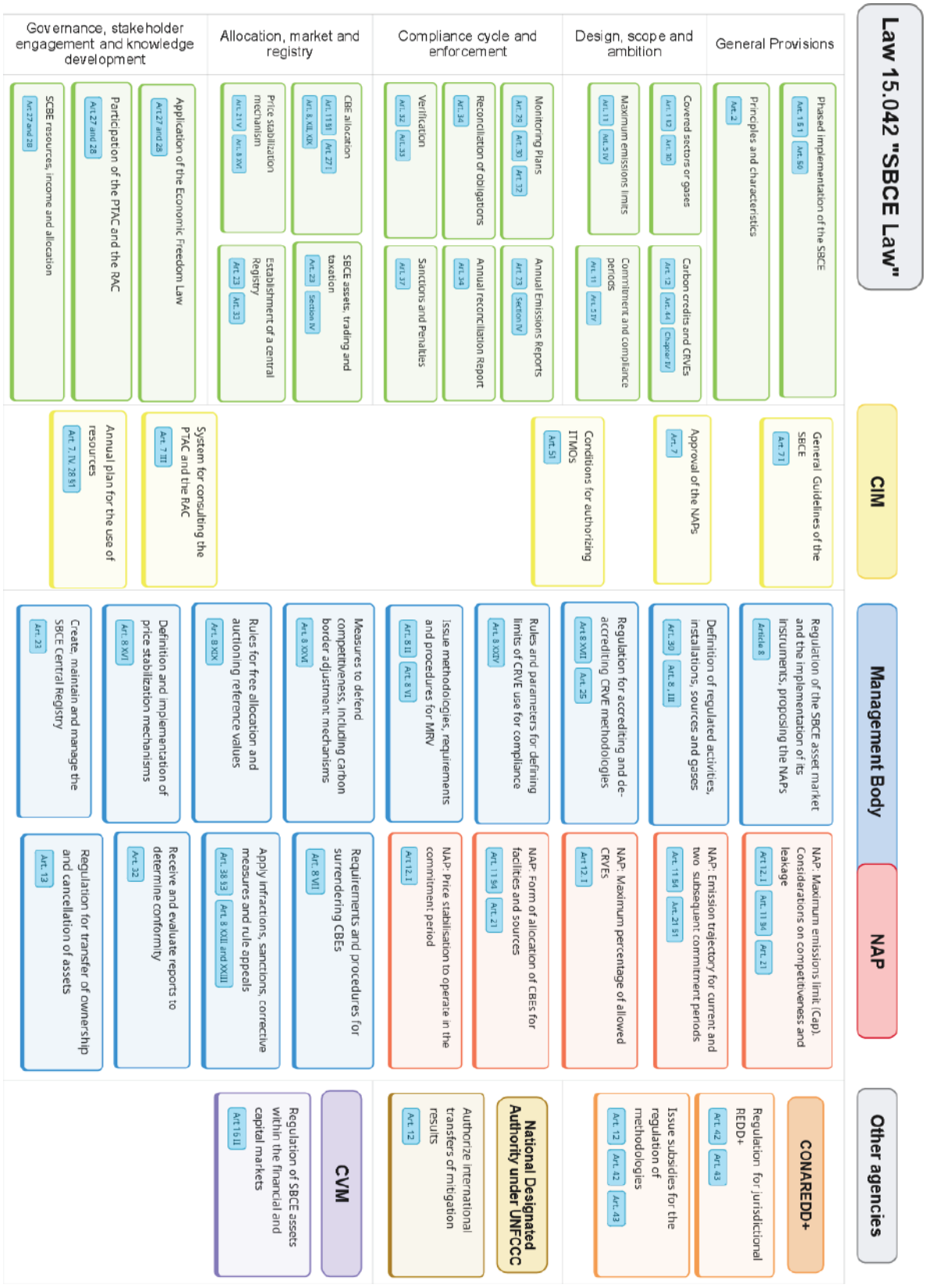
- The Regulatory Affairs Committee is composed of representatives from the regulated sectors. (Art. 9 §2).

- It must be formally consulted before the issuance of regulations concerning monitoring, reporting, and verification (MRV) requirements, reconciliation of obligations for regulated operators, accreditation methodologies for emissions reduction projects, among others. (Art. 9 §3).

*Erro! Fonte de referência não encontrada.**2*** provides a visual representation of the key elements of the SBCE Law and the regulatory framework for the SBCE. The figure is color-coded to differentiate between the aspects already decided in the law and those that will be regulated through subordinate instruments by various governing bodies. While the figure is comprehensive, it is not exhaustive of the different elements that are mentioned in the Law.

- **Green elements:** These are aspects of the SBCE that are directly included in the law, as mentioned above.
- **Yellow elements:** These represent subordinate instruments to be issued by the CIM.
- **Blue elements:** These represent the secondary regulation and executive functions of the Management Body
- **Red elements:** These show the technical provisions to be included in the National Allocation Plans (NAPs).
- **Purple elements:** These represent subordinate instruments to be issued by the Securities and Exchange Commission (CVM)
- **Orange elements:** These represent subordinate instruments to be issued by the National Commission for REDD+
- **Gold elements:** These represent the acts by the National Designated Authority under the UNFCCC

Figure 2 - Mapping SBCE Law and its subordinate instruments



Source: Own elaboration.

2. SBCE governance, stakeholder engagement, and knowledge development

Section Summary

The success of SBCE governance depends on clear legal definitions, strategic sequencing, inter-agency coordination, and resource allocation. Timely implementation of governance structures ensures regulatory certainty, while proactive engagement enhances public trust and market confidence. Adequate financial and technical resources must be mobilized to support governance functions, stakeholder participation, and capacity-building efforts. Transparent communication remains essential to securing buy-in from market participants and ensuring smooth adoption of SBCE regulations.

Building Block 1: Establishment of the Governance Framework – Priority Activities

- **Ensuring CIM has clear faculties and processes for the SBCE**: The Interministerial Committee on Climate Change (CIM) provides high-level policy direction on the SBCE implementation and ensures policy alignment with Brazil's broader climate goals. The Executive Branch will provide the Operational Rules for the Governing Bodies, this should define the processes and functions of the CIM and its decision-making authority under the SBCE.
- **Establish the SBCE Management Body**: The Management Body is responsible for regulation, market oversight, compliance enforcement, and the administration of the SBCE market. Establishing this body necessitates the definition of its placement on the public administration, the Executive Branch will provide the body's organic, administrative, budgetary and functional composition.
- **Establish an interim body:** Until the Management Body is fully operational, an interim body should oversee the foundational policy analysis, institutional development and planification of regulatory activities, ensuring a smooth transition and continuity in decision-making.

Building Block 2: Establishment of the Advisory Bodies – Priority Activities

- Determine the institutional affiliation of the advisory bodies and identify and appoint members of Permanent Technical Advisory Committee and the Regulatory Affairs Chamber, defining their scope of work, and the processes for incorporating their recommendations into policy and regulatory decisions is a key aspect on the first stage of implementation.

Building Block 3: Stakeholder engagement – Priority Activities

- **Mapping stakeholders and their profiles** should begin with early identification of potential regulated entities, carbon crediting project developers and generators, as well as protected communities and public bodies from the three levels of government. This activity should build on stakeholder engagement efforts by the CIM, and international organizations.
- **Assessment of best practices for engagement.** This should follow experiences from global emissions trading systems and previous regulatory processes, ensuring that stakeholder input refines market design and implementation strategies.
- **Establishing a stakeholder engagement plan** will facilitate the use of the different channels: formal consultation mechanisms, public-private roundtables, and targeted technical discussions for informed policy development and regulatory alignment.

Building Block 4: Communication Strategy – Priority Activities

- **Developing key communication materials**, launching an official SBCE information portal, organizing awareness campaigns, and disseminating stakeholder guidance documents will increase engagement and improve understanding of the SBCE.

Building Block 5: Knowledge Development– Priority Activities

- **Conduct capacity baseline assessments for capacity-building readiness**. This is critical to equipping stakeholders with the expertise needed to operate within the SBCE. Initial efforts should focus on conducting baseline assessments of knowledge gaps on government agencies and key stakeholders.
- **Implement capacity building activities focused on technical development of the GTT/SBCE, other governance agencies, and prepare for training the trainers.**

Figure 3 - SBCE governance, stakeholder engagement, and knowledge development - Activities identified on the thematic area



BB1. Establishment of the governance framework

The aim of this building block is to present the main activities required to establish and operate the bodies that will govern the SBCE. The Law sets out governance roles for two main bodies in respect of the SBCE, and it includes a list of functions expected for them, as well as the elements that require further regulation. The following points outline these elements, detail the content to be considered, highlight the main concerns, and discuss which public agency should lead the establishment of these bodies and the most suitable time to implement them.

Governance.Framework.1 - Define the role and functions of the CIM

The Comitê Interministerial sobre Mudança do Clima (CIM), is a permanent collegiate body with the primary function of monitoring and promoting the implementation of actions related to the PNMC within the federal government.[1] The CIM possess the legal status of a superior body, subject to the Federal Executive Power (Art. 6, sol. par.).[2] The composition of the Committee includes 22 Ministers of State with voting rights and six representatives without voting rights from the social, scientific and interfederative coordination chambers.[3] The CIM's activities are divided between political, strategic/executive and technical functions through dedicated chambers.

- The Plenário do CIM (Plenary of the Interministerial Committee on Climate Change) is the highest decision-making body of the CIM. It is responsible for discussing, deliberating, and approving key climate policies, strategies, and resolutions. The plenary holds regular meetings twice a year (semi-annually) and extraordinary meetings when needed.
- The Subcomitê-Executivo is the key technical and decision-support body within the CIM. It's responsible for coordinating policies and supporting decision-making on climate strategies. It oversees Brazil's NDC process, harmonizes national and subnational climate actions, and ensures alignment with international commitments like the UNFCCC. The Subcommittee also monitors and evaluates climate policies, facilitates inter-ministerial coordination, and can create technical working groups.
- The Grupos Técnicos Temporários (GTTs) were established by Decree No. 11.550 of June 5, 2023. GTTs act as technical advisory groups within the governance structure of the CIM, ensuring the effective implementation of climate policies across thematic areas.

    - GTT/SBCE: Created under the Subcomitê-Executivo to develop the regulatory framework and implementation plan for the Sistema Brasileiro de Comércio de Emissões (SBCE). The GTT/SBCE is composed of 15 ministries and government agencies, with

[1] Presidência da República, 2023

[2] According to the Brazilian legal doctrine, *superior bodies are those that hold the power of direction, control, decision-making, and command over matters within their specific competence, but they are always subject to subordination and hierarchical control by a higher authority. They do not enjoy administrative or financial autonomy. Their functional freedom is limited to planning and technical solutions within their area of competence, with responsibility for execution generally entrusted to their subordinate bodies*. H. Meirelles, "Brazilian Administrative Law (Direito Administrativo Brasileiro)", 2006, p. 71.

[3] Presidência da República, 2024

each entity designating one titular (primary representative) and one alternate representative.

SBCE Law

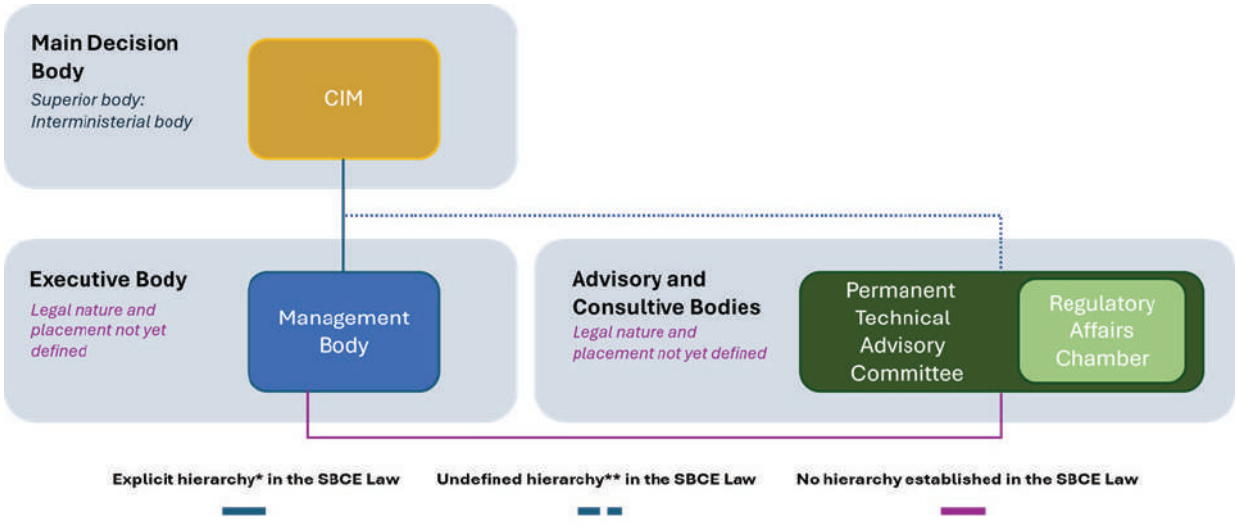
The Law establishes:

- The governance of the SBCE consists of the Interministerial Committee on Climate Change (CIM), the Managing Body, and the Permanent Technical Advisory Committee (Art. 6).
- An Act of the Federal Executive Branch will establish the operating rules for these governance bodies (Art. 6, Final Paragraph).
    - The CIM is the decision-making body of the SBCE, responsible for defining high-level policy directions (Art. 7)It establishes general guidelines for the SBCE, ensuring alignment with national climate objectives.
    - It approves the National Allocation Plan (NAP), defining emissions caps and allocation strategies.
    - It has the authority to create technical groups to provide specialized input and recommendations on SBCE improvements.
    - It approves the annual plan for fund allocation, determining the use of revenues collected from auctions and penalties.
- Regulations define the consultation mechanisms between CIM and the Permanent Technical Advisory Committee and Regulatory Affairs Committee (Art. 7, final paragraph)

Policy considerations

The CIM, as established by law, is the highest body in the governance of the SBCE. Its functions within the governance framework align with its broader role in climate policy formulation, coordination, and oversight. Below is a mapping of the SBCE governance bodies and the hierarchy relations established by the Law:

Figure 4 - Hierarchy between SBCE bodies



* Hierarchy is explicit in that the CIM can issue binding instructions to the Management Body, has authority to review and approve decisions, and can limit the body's autonomy.
*Hierarchy exists in that the CIM has power to exercise coordination functions, directing how the bodies work together, but further regulation is needed to determine the level of autonomy of the Advisory Bodies.

Given that policy development is an iterative and dynamic process, the CIM's decision-making and strategic functions ensure that the SBCE remains effective, politically viable, and aligned with Brazil's broader climate commitments:

- **Overall policy direction for the SBCE**: The CIM is set to establish the SBCE Guidelines, providing additional normative content to the dispositions of the Law. It aligns the SBCE with Brazil's PNMC, ensuring consistency with international climate obligations.
- **Political legitimacy**: The CIM's role in the SBCE governance framework is inherently political, as it integrates multiple government sectors and balances economic, environmental, and industrial interests. Consultation mechanisms between CIM, the Permanent Technical Advisory Committee, and the Regulatory Affairs Committee ensure that technical, regulatory, and market considerations are incorporated into decision-making
- **Policy Implementation & Regulation**: The CIM does not directly enforce or regulate SBCE operations; instead, it shapes the market framework by approving the NAP (emissions caps, allocation mechanisms, compliance obligations, etc.), and the annual plan for SBCE revenue allocation.
- **Policy evaluation**: As a governance institution, the CIM plays a role in evaluating the effectiveness of the SBCE. Assessing its long-term policy coherence, and ensuring that emissions caps, compliance obligations, and pricing mechanisms support Brazil's climate goals.

The following sub-activities have been identified:

1. **Institutional framework:** The Act of the Executive Branch establishing the operating rules for the governance bodies, is expected to define CIM's competences, decision-making processes, and **coordination mechanisms within the SBCE governance bodies.**
2. **An initial mapping of functions and processes, including:**
    - **Issuance of** strategic-level guidelines and principles **(Directrizes Gerais)** for the regulatory and executive functions of the Management Body.
    - **Review and approval process for the NAP**: Including robust consultation mechanisms, clear criteria for evaluating decisions related to regulated entities, such as allocation methods, emissions caps, sectoral approaches, competitiveness measures, and the use of CRVEs for compliance within a commitment period, and defined timelines for approval to ensure market predictability.
    - **System Review:** CIM's role in overseeing the SBCE to ensure alignment with national climate goals. This includes establishing how CIM reviews reports on SBCE effectiveness and compliance trends, creating mechanisms to raise concerns if implementation deviates from national targets, and developing structured feedback loops between CIM and the Management Body.
    - **Fund Allocation Plan:** Develop clear guidelines for the review and approval of the annual SBCE revenue and fund allocation plan. Identify criteria for approval, embedding transparency and accountability mechanisms into fund management, along with procedures for monitoring and evaluating the impact of expenditures.

Timeline considerations

This activity is expected to be undertaken during the first Stage of the implementation process, as the CIM will be responsible for defining the general guidelines of the SBCE (Art. 7, I), which are essential for its implementation.

Responsible agency

The Executive Branch, responsible for issuing the Operating Rules for the governance bodies (Art.6, Sol. Para) and the CIM, for issuing acts establishing processes and coordination with the SBCE Management Bodies.

Governance.Framework.2 – Define the placement of the Management Body

The Management Body serves as the operational and regulatory body of the SBCE, translating high-level CIM policies into enforceable market rules. To ensure its effectiveness, political decisions must first be made regarding its institutional placement. The Law, in its Article 8, provides a detailed list of functions delegated to the Management Body and some guidance on its implementation, however, it is the faculty of the Executive Branch to determine under which ministry the Body shall be placed.

SBCE Law

The Law establishes:

- The governance of the SBCE consists of the Interministerial Committee on Climate Change (CIM), the Managing Body, and the Permanent Technical Advisory Committee (Art. 6).
- An Act of the Federal Executive Branch will establish the operating rules for these governance bodies (Art. 6, Sole Paragraph).

The law does not specify the process for creating and implementing the Management Body (Art. 6, Sole Paragraph).

Policy considerations

The legal nature of the Management Body and the definition of its organic nature is expected to be defined early in the implementation process. [4] There is no single model for ETS authorities in international practice; each is shaped by the jurisdiction's legal framework, political context, and administrative capacity. Nevertheless, several potential options can be considered at this stage:

- **Option A:** Distribution of the Management Body's functions between different ministries, taking advantage of current structures to carry out more tasks; and
- **Option B:** Tasking (or creating) a unit within a ministry to act as the competent authority.

4 The regulatory norm should be based on the rules governing the decision-making process of regulatory agencies, set forth at the Regulatory Agencies Law (Art. 8, par. 4).

- **Option C:** Create an independent, autonomous unit to carry out executive functions. While rare, some ETSs do assign key roles to independent entities, though legal feasibility for the Management Body remains uncertain.
- **Consideration A:** Some jurisdictions retain most of the executive and regulatory functions, but outsource key tasks to independent, non-government entities or private sector providers.

The decision on which ministry or authority will house the Management Body is expected to be made early in the implementation process. A clear placement will ensure that the Body's regulatory and enforcement functions are institutionally secured. The table below includes several international experiences for the creation of ETS governance bodies.

Timeline considerations

This activity is expected to be undertaken in the early stages of the first phase of the implementation process (Stage I), as the Management Body will have regulatory functions that will determine essential matters for the structuring and implementation of the SBCE.

Responsible agency

The Management Body's legal nature and the position in the institutional framework will be defined by an act of by the Executive Branch.

Table 1 - Policy choices and options Governance.Framework.2

Activity	Policy Options	Jurisdiction	Description

Governance.Framework.1 - Placement of the Management Body	**Option A.** Distribution of the Management Body' s functions among two or more minis-	**Republic of Korea**	• Initially, the Ministry of Environment was responsible for managing all aspects of the Korea Emissions Trading Scheme (K-ETS).[5]
			• In June 2016, the Ministry of Strategy and Finance assumed responsibility for the overall system operation and support of the country's carbon market. Subsequently, specific responsibilities were distributed among four sectoral ministries, each overseeing a particular emissions area:[6]
			  • Ministry of Economy and Finance: chairs the Allocation Committee
			  • Korea Exchange (KRX): operates the trading and auctioning platform
			  • Greenhouse Gas Inventory and Research Centre (GIR): handles the registry and technical implementation
			  • International Carbon Reduction Council (ministry-level body): promotes GHG reduction projects.[7]

[5] ICAP, 2024b

[6] Asian Development Bank, 2018.

[7] ICAP, 2024b.

Activity	Policy Options	Jurisdiction	Description
		New Zealand	• In 2007, the New Zealand government established an Emissions Trading Group to design and implement the NZ ETS. The group was based at the Treasury and led by a Ministry for the Environment (MfE) manager, with oversight from both MfE and Treasury chief executives. The group included officials seconded from key ministries and agencies:[8] • Ministry for the Environment: provided leadership and climate policy expertise • Treasury: hosted the group and supported economic and financial analysis • Ministries of Economic Development, Transport, and Agriculture and Forestry: contributed sector-specific knowledge This structure enabled close collaboration across departments and rapid alignment of technical design with political decision-making, leading to the passage of ETS legislation in 2008.
	Option B. Placement of the Management Body within the federal body equivalent to Ministry	Germany	• The German Emissions Trading Authority (DEHSt) is located at the German Environment Agency (UBA), being responsible for the ETS implementation, and for the registry and receiving of emission reports.[9]
		Austria	• Austria's National Emissions Certificate Trading System (NEHG 2022) involves several key institutions:[10] • Austrian Federal Ministry for Finance (BMF): Establishes the regulatory framework for the emissions trading system. • Office for National Emissions Trading (AnEH): A department within the Customs Authority Austria responsible for implementing procedures related to national emissions trading and the Carbon Border Adjustment Mechanism (CBAM). • Umweltbundesamt GmbH (Environment Agency Austria): Handles the technical implementation of national registries required for EU emissions trading and the Kyoto Protocol, including managing the Austrian Emissions Trading Registry.
		Türkiye	• The Directorate of Climate Change (DoCC) is the ETS implementation body in Türkiye, being located under the Ministry of Environment, Urbanization, and Climate Change (MoEUCC).[11]
		China	• China's national Emissions Trading System (ETS) operates under a multi-level governance structure involving several key institutions:[12] • Ministry of Ecology and Environment (MEE): Acts as the national competent authority responsible for setting regulations, overseeing the system, and coordinating with other national regulators. • Provincial-level MEE Subsidiaries: Oversee the implementation of the ETS at the provincial level, including identifying covered entities, organizing monitoring, reporting, and verification (MRV), hiring verifiers, calculating allowances, managing provincial registry accounts, and overseeing compliance. • China Carbon Emissions Registration and Clearing Co., Ltd.: Operates the China Emission Allowance (CEA) registry and clearing platform.

[8] ICAP, PMR, 2021
[9] ICAP, 2024a, p. 49.
[10] ICAP, 2024a, p. 31.
[11] ICAP, 2024a, p. 66.
[12] ICAP, 2024a, p. 170

Activity	Policy Options	Jurisdiction	Description

		California	• The California Air Resources Board (CARB) is the lead agency responsible for administering California's Cap-and-Trade Program under the Global Warming Solutions Act (AB 32).[13]
			  • CARB operates within the California Environmental Protection Agency (CalEPA) and serves as the program's competent authority.
			• Specific responsibilities are distributed across key institutions:
			  • CARB: designs, implements, and enforces the Cap-and-Trade Program, including allowance allocation, compliance, and market oversight
			  • CalEPA: provides overarching environmental policy direction and oversight for CARB
			• California Governor's Office: appoints CARB board members and provides executive leadership on climate policy

	Option C. Management Body outsources	RGGI	• Regional Greenhouse Gas Initiative (RGGI) – U.S. is managed by RGGI, Inc., a non-profit organization created by participating U.S. states.[14] • RGGI, Inc. has a degree of operational independence, established to provide technical and administrative support for the program, including allowance tracking, emissions data analysis, and auction operations. • State environmental agencies: retain legal and regulatory authority over the implementation and enforcement of the cap-and-trade regulations within their jurisdictions
	Consideration A: Specific tasks are outsourced to independent,	California	• Western Climate Initiative, Inc. (WCI, Inc.): provides technical and administrative support for the joint carbon market with Québec, including the operation of the compliance tracking system and auction platform.

Governance.Framework.3 - Establish the Management Body

The Management Body is the executive authority of the SBCE. Unlike the CIM, which sets high-level policy guidelines, the Management Body is responsible for the regulation, enforcement, and operational implementation of the SBCE. Its broad executive powers include normative, regulatory, executive, sanctioning, and appeals functions.

[13] ICAP, 2024a, p. 84.
[14] ICAP, 2024a, p. 134.

SBCE Law

The Law sets out that:

- The Management Body of the SBCE has both regulatory and executive functions, which must be carried out in accordance with the directives of the Higher Governing Body (Art. 8).
- Its regulatory functions include defining monitoring methodologies and the presentation of information on GHG emissions, reductions, and removals. Identifying the activities, installations, sources, and gases to be regulated for each commitment period. Establishing annual GHG emission thresholds for the submission of monitoring plans and reports. Defining the requirements and procedures for MRV of emissions from regulated sources and installations. Setting the criteria for accreditation and de-accreditation of GHG Emission Reduction Certification Methodologies. Submitting the National Allocation Plan (NAP) proposal and the annual plan for SBCE resource allocation to the CIM for approval (Art. 8).
- Its executive functions include implementing the NAP during each commitment period. Creating, maintaining, and managing the SBCE Central Registry. Conducting CBE auctions and managing the auction platform. Determining violations and applying sanctions for non-compliance with SBCE rules. Carrying out other operational tasks as outlined in the Law (Art. 8)

Policy considerations

The Management Body has broad regulatory and normative faculties: Issuing rules, methodologies, and enforcement mechanisms for SBCE participants in line with the SBCE Guidelines. It also has executive functions for day-to-day operations, enforcement, and stability of the SBCE. These functions ensure that regulations are effectively implemented, and the market infrastructure operates adequately.

Before establishing the Management Body, the following elements are expected to be clarified:

a. The establishment of the Management Body requires the definition of its institutional structure and entails several key elements to operationalize its functions.: Identifying the Management Body's organizational structure, informed by international best practices, assessing resource and staffing needs. For these definitions and arrangements, the Management Body will need knowledge and capacity on issues such as the implementation of the NAP and the instruments of the asset market of the SBCE and the price stabilization mechanisms for CBEs; evaluation of monitoring plans, reports on GHG emissions and removals, and periodic reconciliation of obligations; maintenance and management of the Central Registry and the auction platform; and enforcement of measures, application of sanctions, and judgement of appeals.[15] Table I above provides international examples of possible structures and subdivisions inside ETS governance systems of different jurisdictions, considering the distribution of roles to different departments.

b. The staffing process and the means for establishing an office for the Management Body, including decisions on: [16]

- The most appropriate geographical location for the Body's office.
- The most adequate hiring process.
- Necessary budget.

[15] The list consists in a mere recommendation on how to gather the functions based on the similarity of their nature.

[16] Whether political representatives, public employees, specialized private consultants, among other alternatives.

- Possible reassignment of public servants from other bodies.
- The required professional expertise for fulfilling both regulatory and executive functions.

c. The allocation of regulatory and executive functions within the organizational structure of the Management Body, by assessing international experiences of having at least two distinct divisions or departments, with one focused on regulatory functions and the other on executive functions. This separation aims to prevent potential conflicts of interest and safeguarding the integrity of decision-making processes, reducing the risk of undue influence in rulemaking or implementation. International experiences show that separating policy and regulatory functions—such as fiscal policy vs tax collection or aviation policy vs regulation—helps to ensure transparency and independence in governance. These international examples highlight the importance of "walls" or clear structural boundaries within institutions to promote independence and transparency. Assessing inter-ministerial coordination mechanisms for SBCE policy decision-making. Establishing structured information flow between institutions, including CONAREDD+, responsible for jurisdictional "REDD+ market approach" and non-market approaches, the Designated National Authority (DNA) responsible for the authorization of the international transfer of mitigation results under the Paris Agreement in line with the conditions established by CIM, and other federal agencies, such as the CVM, must be defined.

d. In addition to establishing the institutional structure, planning the normative framework is required to enable the Management Body to exercise its regulatory functions. This includes Identifying the minimum instruments and decisions needed to habilitate the Management Body to begin exercising its regulatory functions (e.g., foundational statute, budget allocation, appointment procedures); mapping all legal instruments that the Body must issue to effectively implement and operate the SBCE, including regulatory, institutional, procedural, and market-related instruments. Identifying legal gaps and interdependencies (e.g., which instruments require enabling legislation or coordination with other authorities), developing an implementation timeline with deadlines for the drafting, consultation, approval, and entry into force of each instrument, in line with the SBCE legal framework.

e. Analysis of the adequate resource allocation needs and budgeting for finance, personnel, technology, and infrastructure necessary for establishing the Management Body, considering that, over time, it can be supported by SBCE revenues.

f. Proposal of internal governance rules: The Management Body would need to develop decision-making processes, transparency and accountability mechanisms and hiring and staffing policies. As well as implement safeguards against regulatory capture.

g. Proposal of public consultation processes for regulatory decisions: The Management Body's normative and executive functions are conditioned to different consulting processes under the Law. These would need to be formalized for their implementation.

h. Capacity-building and long-term institutional strengthening: The mapping of capacity needs, on **Erro! Fonte de referência não encontrada.**, should allow to prepare a capacity plan for the staff on carbon markets and enforcement. Actively working on a benchmark against international carbon market regulators to adopt best practices.

Timeline considerations

This activity is expected to be undertaken early on the first Stage of the implementation process, as the Management Body will have regulatory functions that will determine essential matters for the structuring and implementation of the SBCE.

Responsible agency

According to the Federal Constitution, the establishment, organization, and operational guidelines of a body within the Public Administration can be determined either by federal law or decree, contingent upon its legal classification, and upon submission of a proposal by the President of the Republic.

Governance.Framework.4 - Establish interim implementation arrangements

Given the concentration and complexity of the competencies assigned to the Management Body, it is advisable to mandate a transition body.

Policy considerations

It is recommended that an interim body conducts the studies and analyses necessary to establish the priority definitions for the creation and functioning of the Management Body. The main purpose of the working group would be to present:

- Recommendations on the priority definitions for the structuring and creation of the Management Body.
- Recommendations for setting the operational rules of the SBCE, understood as the regulatory functions mentioned above; and
- Recommendations for setting the functioning rules of the Management Body, understood as the executive functions mentioned above.

For the development of recommendations on the operational rules of the SBCE and the functioning rules of the Management Body, the interim body must conduct studies and analyses of technical literature and information, including national data, international benchmarking, and previous experiences from other national public policies, in order to define the most suitable rules for the successful functioning of the Management Body and the SBCE as a whole.

The interim body will be tasked with preparing the necessary groundwork for the Management Body's normative and executive functions, as established by the Law. This preparatory role will include scoping activities to identify best practices and proposing a regulatory roadmap to guide the development and implementation of the required legal and institutional framework. By doing so, the interim body will help accelerate the transition to full regulatory capacity while ensuring continuity in rulemaking and implementation efforts.

To effectively fulfil this role, the interim body should be structured and situated in a way that facilitates the execution of these preparatory activities. It could be housed within a Ministry participating in the GTT/SBCE and composed of civil servants from ministries and federal entities already engaged in the technical and legal groundwork for the SBCE. The team should include multidisciplinary experts, including specialists in legislative drafting, to support the development of operational rules. This may involve recruiting new public officials, contracting private consultancies, or drawing on public agents from different federal bodies according to their expertise and sectoral knowledge. The proposed governance structure aims to unify and coordinate the activities and studies currently being conducted under various leaderships and

ministries. This approach seeks to expedite and streamline the establishment of the Management Body and, subsequently, the SBCE.

Timeline considerations

This activity is expected to be undertaken as early as possible, preferably at the beginning of the first Stage of the implementation process (Stage I), as the Management Body will have regulatory functions that will determine essential matters for the structuring and implementation of the SBCE.

Responsible agency

Proposals to establish an interim body within a Ministry enacted by an executive branch ordinance

Summary Table 1 - Creation of the governance bodies

Building Block 1: Establishment of the governance framework					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Governance.Framework.1 - Define the role and functions of the CIM	• Act of the Executive Branch establishing the organisational rules for the governance bodies. • CIM-SBCE Governance Resolution defining its role and procedures	Executive Branch / CIM	Stage I	NA	NA
Governance.Framework.2 – Define the placement of the Management Body	• Decision under which ministry or federal body the Management Body will be placed	Ministries and other federal bodies involved in the SBCE implementation process	Stage I	Option A: Distribution of functions among two or more ministries and/or federal bodies	• Korea • New Zealand
				Option B. Placement of the Management Body within the federal body equivalent to Ministry	• Austria • California • China • Germany • Türkiye
				Option C. Management Body outsources some of the executive functions to an independent agency or private entity	• RGGI
				Consideration A: Specific tasks are outsourced to independent, non-government entities or private sector providers.	• California

Building Block 1: Establishment of the governance framework					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Governance.Framework.3 - Establish the Management Body	• Organizational design and structure of the Management Body • Develop internal organizational rules • Determining the resource allocation needs and budgeting • Define capacity building and training activities	Executive Branch / CIM	Stage I	NA	NA
Governance.Framework.4 - Establish interim implementation arrangements	• Conduct studies to define priorities for establishing the Management Body and operational rules for the SBCE. • Facilitate regulatory execution and legal protection against conflicts of interest.	Executive Branch / CIM	Stage I	NA	NA

BB2. Establishment of the advisory bodies

Governance.Advisory.1 - Establish the Permanent Technical Advisory Committee

The Permanent Technical Advisory Committee will serve as the SBCE consultative body.

SBCE Law

The Law sets out that:

- The Permanent Technical Advisory Committee serves as a consultative body for both the CIM and the Management Body (Art. 9).

- Its role is to support decision-making by providing technical and scientific input on specific issues, including:

    - Criteria for accreditation and de-accreditation of methodologies for generating CRVEs.
    - Preparation of the National Allocation Plan (NAP) proposal.
    - Technical guidance for the annual resource application plan.
    - Other relevant issues submitted to it

- The Committee's composition includes representatives from the Union, States, Federal District, sectoral entities, academia, and civil society.
- An Act of the Federal Executive Branch will establish the operating rules for the governance bodies (Art. 6, Sole Paragraph).

Policy considerations

The Permanent Technical Advisory Committee will be comprised of representatives from the Federal and State Governments, entities representing the regulated sectors, academia, and civil society that are notably knowledgeable on the subject (Art. 9, sol. par.). The law does not specify the placement of the Permanent Technical Advisory Committee on the public administration, and it requires regulation to determine its conformation, including the number of its members, proportional representation, or selection process. According to the Law, a regulatory act will define the consultation system for the Permanent Technical Advisory Committee and the Regulatory Affairs Chamber. The operating rules for the governance bodies must include, or mandate the development of the Committee's operating rules, and it should concern the following matters:

a. The Committee's placement on the public administration

b. the Committee's composition

c. the consultation process by the Interministerial Committee on Climate Change and the Management Body (Art. 7 par. 3; Art. 9, last par.).

Timeline considerations

This activity needs to be undertaken parallel to the creation of the Management Body, since the Permanent Technical Advisory Committee will assist the Body on the execution of its regulatory functions, such as the establishment of rules and procedures for the accreditation and de-accreditation of methodologies for generating CRVEs.

Responsible agency

According to the Brazilian Federal Constitution, the creation of a body within the Public Administration, as well as its organization and operating rules, can be established through federal law or decree, depending on its legal nature, based on a proposal from the President of the Republic or the ministry or ministries under which the SBCE governance system will be placed. Since the Law does not indicate which public agency would be responsible for the creation of the Permanent Technical Advisory Committee and given that it is a consultative body of the SBCE as a whole, it may also be created by an act from either the Interministerial Committee on Climate Change or the Management Body. Another possibility would be its creation through an act from CIM. The selection of the responsible agency will be a politically driven decision.

Table 2 - Policy choices and options Governance.Advisory.1

Activity	Policy Options	Jurisdiction	Description
Governance.Advisory.1 - Establish the Permanent Technical Advisory Committee	**Option A:** Established by the Interministerial Committee on Climate Change	**Mexico**	• The Climate Change Council (*Consejo de Cambio Climático*) is a permanent consultancy body to the Intersecretary Climate Change Commission, which is responsible for the implementation of climate policies, having its organization, structure, and functioning regulated by the Commission's Internal Statute (Art. 56 of the General Law on Climate Change). • The Council is composed of a minimum of 15 representatives from civil society, private actors, and academia, with recognized expertise on climate change. • The Council's functions include giving recommendations to the Intersecretary Climate Change Commission to draft assessments and adopt policies, actions, and emissions reduction targets, which will be considered for ETS's purposes, as well as to promote social participation.
		Chile	• The Scientific Advisory Committee for Climate Change (*Comité Científico Asesor para el Cambio Climático*) is an advisory committee to the Ministry of Environment on scientific issues related to the design and implementation of climate management instruments, which shall be regulated through a Decree from the Ministry of Science, Technology, Knowledgement, and Innovation, endorsed by the Ministry of Environment (Art. 19 of the Climate Change Law). • The Committee is composed of 11 members with at least 10 years of experience with climate change issues, who must be academics or researchers from superior education institutions with at least 4 years of accreditation, or from research centers working in science fields. • The Committee's functions include the analysis of scientific aspects related to climate change management, proposing assessments and answering to the Ministry of Environment consultations, and guiding the research and observation guidelines for collecting and analyzing climate data. The Committee must be heard, for example, when establishing emissions standards for the regulated sector in the national ETS.
	A 3 Option B: Established directly by the Federal Executive Power	**Colombia**	• The National Council on Climate Change (*Consejo Nacional de Cambio Climatico*) is a permanent consulting body to the Climate Change Intersectoral Commission (CICC), regulated by the National Government (Art. 5 of Law No. 1931/2018). The CICC is responsible for the adoption of emissions reductions guidelines and targets for each regulated sector in the national ETS. • The Council is composed of representatives from trade unions, NGOs working on climate change issues, academia, development international organizations, and congressmen. • The Council's functions include recommending to the Climate Change Intersectoral Commission the necessary actions to coordinate climate change management among productive sectors, academia, and social organizations, and providing the Commission technical support about climate change issues.
		New Zealand	• The Climate Change Commission is an independent and expert entity that provides advice to the Government on mitigating climate change and adapting to the effects of climate change and monitors and reviews the Government's progress toward its emission reduction and adaptation goals. The Commission is nominated by a nominating committee established by the Minister.

Activity	Policy Options	Jurisdiction	Description
			• The Commission is responsible for providing official annual advice on New Zealand ETS settings.[17] • The Commission is composed of a Chairperson, a Deputy Chairperson, and no fewer than 3, and no more than 7, other members. Collectively, the Commission members must understand climate change mitigation and adaptation, experience working in or with local and central government, technical and professional skills, experience, and expertise in, and an understanding of innovative approaches relevant to the environmental, ecological, social, economic, and distributional effects of climate change. • The Commission's functions include advising the Minister to enable the preparation of emissions budgets, advising the Minister about the number of emissions that may be banked or borrowed, and recommending the Minister about limits and price control settings for units, and about decreased or increased phase-out rates.

Governance.Advisory.2 - Establish the Regulatory Affairs Chamber

The Regulatory Affairs Chamber will serve as a space for engagement among the regulated sectors regarding the SBCE and the regulation established by the Management Body.

SBCE Law

- The Regulatory Affairs Chamber is a consultative body within the Permanent Technical Advisory Committee, composed of representatives from regulated sectors (Art. 9, §2).
- It provides formal consultation process with regulated sectors prior to the execution of normative functions of the Management Body matters (Art. 9, §3).
- The Chamber must be formally consulted before the issuance of rules related to most of the Management Body's regulation, including:
    - Accreditation and de-accreditation of methodologies for generating CRVEs.
    - Monitoring methodologies.
    - Requirements for the periodic reconciliation of obligations.
- It may also be consulted on other regulatory matters at the discretion of the Management Body (Art. 9, §3).

Policy considerations

Further regulation will be issued on the Chamber's operating rules, and it should concern the following matters:

a. The Chamber's composition and number of members

[17] ICAP, 2024a, p. 203.

b. The selection process of its members

c. The consultation process required by the CIM and the Management Body

The Law does not provide details regarding the structure and functions of the Regulatory Affairs Chamber. Therefore, the following basic steps are recommended for its creation:

a. Determining its legal nature, based on its functions and composition.

b. Based on its hierarchical position and legal nature, determining the most appropriate legal instrument for its creation and implementation.

In line with the principle of gradual implementation of the SBCE, the composition of the Regulatory Affairs Chamber should evolve over time, reflecting the progressive inclusion of sectors under the system. Initially, the Chamber would consist of representatives from the first sectors subject to regulation. As the SBCE's coverage expands, representation within the Chamber would be updated accordingly to ensure balanced and inclusive sectoral participation.

Given this phased approach, the Regulatory Affairs Chamber should be established once the initial sectors to be regulated are formally identified. In the meantime, the Permanent Technical Advisory Committee could be created by CIM in advance, potentially in parallel with the establishment of the interim structure tasked with developing key elements of the SBCE, including decisions on sectoral coverage (subject to further consideration).

The extent of influence that the Regulatory Affairs Chamber will have on the decision-making processes of the SBCE. Given its consultative role, its interventions do not have binding effects. However, further clarification will be provided by the regulation on the specific nature of its advisory input, as well as the stages at which its recommendations should be sought in the regulatory process.

Timeline considerations

The establishment of the Regulatory Affairs Chamber is expected to proceed after the establishment of the Permanent Technical Advisory Committee, as the Chamber will play a key role in supporting the execution of its regulatory and executive functions.

Responsible agency

According to Article 9, paragraph 2, the Regulatory Affairs Chamber is part of the Permanent Technical Advisory Committee, which functions as an advisory body within the SBCE's governance structure. The Act that establishes the organisational rules for the governance bodies, developed by the Executive Branch should define the Chamber's operating rules, or at least mandate their development to a different authority.

Table 3 - Policy choices and options Governance.Advisory.2

Activity	Policy Options	Jurisdiction	Description

Governance.Advisory.2 - Establish the Regulatory Affairs Chamber	**Option A:** Regulatory Affairs Chamber composed by public and private sectors representatives.	**Mexico**[18]	• The Mexican ETS Consultancy Committee on the Emissions Trading System (*Comité Consultivo del Sistema de Comercio de Emisiones* - COCOSCE), established by the ETS Initial Program Agreement[19], is formal technical forum for consultation, orientation, social participation, and advice for the Pilot ETS, created by the Secretary of Environment and Natural Resources.
			• The Committee is composed not only by government representatives (ministries of Finance, Environment and Natural Resources, Energy, and Economy), but also by representatives from:
			  • The Confederation of Industrial Chambers
			  • The Coordinating Business Council
			  • Representatives from regulated sectors
			  • Financial institutions associations

		Germany[20]	• The Emissions Trading Working Group (AGE) in Germany, established in 2000, continues to serve as a collaborative platform for stakeholders—including industry representatives, government officials, and environmental NGOs—to discuss and shape emissions trading policies. Operating under the Chatham House Rule, AGE fosters open dialogue on emissions trading and its interactions with other climate policy instruments. • In recent years, AGE has actively engaged in discussions surrounding Germany's transition from its national ETS to the EU-wide ETS 2, set to commence on January 1, 2027. This transition involves aligning national policies with the broader EU framework to ensure a cohesive approach to emissions reduction across sectors such as buildings and road transport. Additionally, AGE addresses the implications of the Carbon Border Adjustment Mechanism (CBAM), which aims to prevent carbon leakage by adjusting the cost of imports based on their carbon content, thereby maintaining fair competition for EU industries.

[18] ICAP, 2024c.

[19] Secretaría de Gobernación, 2019

[20] ICAP PMR, 2021;

Summary Table 2 - Creation of the governance bodies

Building Block 2: Establishment of the advisory bodies					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Governance.Advisory.1 - Establish the Permanent Technical Advisory Committee	• Creation of further regulation on the Committee's composition and consultation process. • Political decisions concerning the number of members that will compose the Committee and the proportion of representatives for each represented sector. • Definition of the agency responsible for the establishment of the Committee	Executive Branch	Stage I	Option A: Established by the CIM	• Mexico • Chile
				Option B: Established directly by the Federal Executive Power	• Colombia • New Zealand
Governance.Advisory.2 - Establish the Regulatory Affairs Chamber	• Matters that should be decided prior to the implementation of the Body • Further regulation on the Body's operating rule • Definition of the extent of influence that the Chamber will have on the decision-making processes of the SBCE.	Executive Branch	Stage I	Option A: Regulatory Affairs Chamber composed by public and private sectors representatives.	• Mexico • Germany

BB3. Stakeholder engagement and communication strategy

Effective engagement should begin early and be maintained throughout the SBCE's lifecycle to ensure informed decision-making, transparency, and inclusiveness. Core principles include timely interaction to prevent consultation fatigue, transparent processes with clear goals and timelines, inclusiveness to incorporate diverse views, and accountability through public records and feedback. Tailored strategies are needed for different stakeholders, regulated entities, government bodies, and civil society, to build understanding, trust, and support.

Governance.Engagement.1 - Identify and profile stakeholders

Plans for engaging stakeholders start with identifying key individuals and organizations. These include potentially covered operators, agencies in charge of planning, regulating or implementing public policies in the covered sectors, credit project generators and developers, firms indirectly affected by the ETS (consumers, manufacturers, suppliers), market service providers

(verifiers, auditors, credit project developers and certifiers of carbon credit projects or programs, financial intermediaries, etc.), civil and scientific organizations, indigenous and traditional communities, and media channels.

SBCE Law

The Law identifies specific stakeholders, including government institutions, the private sector, civil society, indigenous populations, trade unions, the scientific community, credit developers and generators, accredited inspection bodies and accreditation entities, among others.

Policy considerations

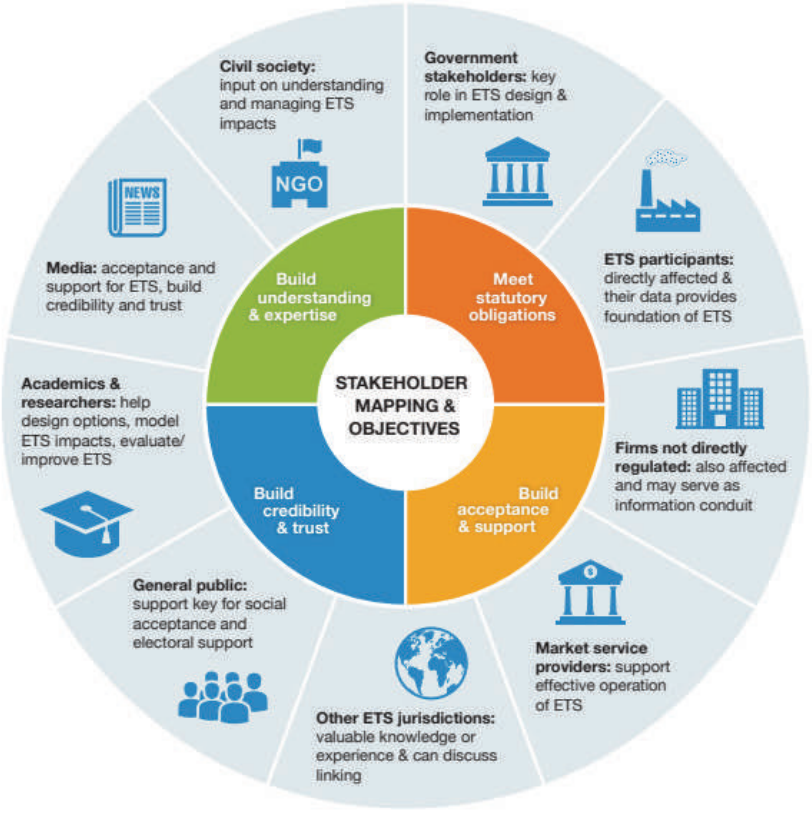
The SBCE Law emphasises stakeholder involvement, including broad terms such as "private sector," "scientific community," and "civil society". An initial activity will be to provide definition to these concepts in the SBCE framework. Additionally, regulated entities, operators subject to the SBCE regulation, will remain undefined until the SBCE scope, emissions thresholds and MRV methodologies are formally established (Art. 30, 32). Similarly, both CRVE project developers and project generators will be qualified as such, only when methodologies are accredited by the Management Body, Given this dependency, it is recommended to begin identifying potential regulated entities, particularly large emitters, as well as other groups impacted by the Law, such as carbon credit project developers and generators, and other key stakeholders in anticipation of future obligations.

Beyond the stakeholders explicitly recognized in the SBCE Law, it is important to consider the federal and state authorities, as well as other public institutions. The international best practice recommends including early engagement with the judiciary to assess potential legal and constitutional risks associated with SBCE implementation. Communities, trade unions, political groups, and individuals who may be adversely impacted by SBCE should be identified to ensure an inclusive and transparent regulatory process, especially in early stages when the Regulatory Affairs Chambers has not been formally established. Accreditation bodies, operating auditors under accredited inspection bodies, and financial intermediaries that may facilitate market transactions, will be key for the development of MRV and market regulation. Furthermore, engagement with international agencies that have implemented emissions trading systems will be essential to incorporate best practices and align Brazil's SBCE with global carbon markets. Figure 5 shows recommended stakeholder mapping and objectives for each group.

A comprehensive stakeholder mapping exercise should focus on:

- Identifying their roles in SBCE implementation and assessing potential impacts on them.
- Evaluating their awareness of SBCE, CRVEs, and broader climate policies.
- Understanding their concerns, priorities, and expectations from the government.
- Defining how they wish to engage with SBCE, whether through participation in decision-making, policy consultation, or regulatory updates.
- Assessing their current relationship with government entities and their willingness to collaborate with other stakeholders in the process.
- Once identified and profiled, a better understanding of how stakeholders will be affected can be obtained from modelling or other quantitative analyses, such as cost-benefit analysis.

Figure 5 - ETS stakeholders and key considerations in stakeholder mapping



Source: PMR and ICAP. Emissions Trading in Practice: A Handbook on Design and implementation (2nd Edition). 2021

Carbon pricing stakeholder mapping and engagement has already been explored in past initiatives, such as the 2020 PMR Brazil Project, which involved broad engagement with government, the private sector, academia, and civil society.[21] Additionally, Brazil's National Plan on Climate Change 2024–2035 (Plano Clima) includes a component dedicated to stakeholder mapping and public participation in mitigation policy.[22] Coordination with the CIM Executive Secretariat is recommended to align SBCE-related stakeholder engagement efforts.

Stakeholder identification will be a permanent and structured process, integrated into the ongoing review and evolution of the SBCE. As the system progresses through different phases, new actors will emerge, requiring continuous assessment and engagement to ensure regulatory alignment and market efficiency. Best practices keep this permanent process stable, institutionalized, and periodically reviewed to adapt to policy developments, market dynamics, and technological advancements, particularly in areas such as issuance of MRV methodologies, changing threshold for compliance obligations, and market participation.

Timeline considerations

- Stakeholder identification is expected to occur in two key steps. First, an initial identification phase to begin as soon as possible to inform the early design elements of the SBCE.

[21] PMR, 2020.
[22] IDB, 2024

This phase first phase will focus on mapping potential regulated entities, potentially impacted communities, political groups and institutions.

- Once this foundational mapping is completed, a permanent and institutionalized stakeholder identification process could be established as part of the ongoing review and governance of the SBCE.

Responsible agency

Considering the ongoing work of the Executive Secretariat of the CIM in developing Plano Clima, a coordinated approach between the technical working groups would be valuable. This collaboration will ensure that stakeholder identification efforts are effectively aligned, avoiding duplication and enhancing policy coherence across climate governance initiatives. However, in the long term, the Management Body will oversee the institutionalization of this process, ensuring that stakeholder engagement remains a core function of the SBCE's governance structure.

Governance.Engegament.2 - Develop a stakeholder engagement plan

Stakeholder engagement stimulates dialogue and exchange between policymakers and stakeholders, anticipating their position towards policy definitions and identifying policy solutions. It is important to define engagement methods that cater to the stakeholder profiles and their specific role in shaping the SBCE design and implementation. Engagement with different profiles and for different purposes should be clearly delineated, as a broad forum with heterogeneous stakeholders and not clearly defined objectives might create frustrations and waste opportunities to gain useful input and solve regulatory challenges together.

SBCE Law

The Law sets out that:

- Public entities play a key role in facilitating and coordinating engagement processes within the SBCE governance framework. These engagements are conducted through the CIM, the Management Body, and the Permanent Technical Advisory Committee (PTAC), ensuring a structured approach to stakeholder participation (Art. 6).
- The Regulatory Affairs Chamber, composed of representatives from regulated sectors, serve as a formal consultation space for regulatory interventions (Art. 9, §2-3).
- The Law also establishes key moments for engagement, particularly during the drafting and before the issuance of regulatory acts. The Management Body must conduct formal consultations with the Regulatory Affairs Chamber regarding specific regulatory matters, such as monitoring methodologies, periodic reconciliation of obligations, and accreditation of CRVE methodologies (Art. 8, §3, Art.9).
- Additionally, broader public consultations are required for major regulatory decisions, ensuring transparency and alignment with the Regulatory Impact Assessment framework under the Economic Freedom Law ((Law 13.874, Art. 5).

Policy considerations

A structured stakeholder engagement plan is necessary to ensure meaningful participation, transparency, and policy alignment. While the plan must comply with legal consultation requirements, it should also incorporate international best practices for effective stakeholder dialogue. Stakeholder engagement should be tailored to the level of influence stakeholders have in decision-making. The International Association for Public Participation (IAP2) identifies five key engagement levels, each suitable for different stages of policy development:[23]

- **Inform**: Providing clear and accessible information to stakeholders about the SBCE, including policy objectives, market structure, and compliance obligations. The European Union's ETS regularly publishes green and white papers to ensure transparency in policy proposals.
- **Consult**: Gathering feedback on draft regulations, technical methodologies, and governance structures.
- **Involve**: Engaging stakeholders directly in technical discussions to ensure their perspectives are considered throughout the design process. New Zealand's ETS organizes multi-stakeholder workshops to refine market design.
- **Collaborate**: Partnering with stakeholders in joint decision-making processes for policy refinement.
- **Empower**: Delegating key decisions to stakeholders where appropriate, ensuring public accountability and legitimacy.

Engagement is expected to take place at each stage of SBCE development, ensuring stakeholders provide input, receive clear information, and participate in decision-making. Engagement should be structured to accommodate diverse perspectives, fostering a safe and respectful space for discussions. The Management Body is responsible for establishing a permanent, institutionalized engagement process, ensuring continuous stakeholder consultation as SBCE regulations and market mechanisms evolve.

- **Required outreach for regulatory issuance**: The Management Body's normative functions are subject to consultation requirements:

    - Before issuing any new regulation, the Management Body must carry out Regulatory Impact Assessments (RIAs) in accordance with Federal Law No. 13,848/2019 and Federal Decree No. 10,411/2020. An RIA is a systematic process for evaluating the potential positive and negative impacts of proposed or existing policies, including their effectiveness in achieving intended outcomes. As an administrative procedure, it can employ a variety of methods, with the level of sophistication and analytical depth depending on the complexity of the issues, available resources, and specific legal requirements related to administrative and economic impacts. For more on how to develop an RIA for ETSs, see *Governance of Emissions Trading Systems*, PMR, 2022 .Besides the RIA requirement, the Management Body must also engage in public consultations before it issues regulation on MRV, the periodic reconciliation of obligations, and the proposal of the NAP.

[23] IAP2 2014, and PMR 2021

- It must also hold formal consultations with the SBCE's Regulatory Affairs Chamber, during the drafting and prior to the publication of most of its rules

- **Formalize private and public sectors engagement through the consulting bodies**: Define interaction procedures between CIM, the Permanent Technical Advisory Committee, and the Regulatory Affairs Committee, ensuring that:

  - Industry input is advisory, not decision-making.
  - Scientific evidence and climate commitments are considered.
  - Consultation processes are fully documented and public to increase transparency.

- **Other channels for private sector engagement:** Formal or mandatory engagement can be supplemented with effective engagement channels, depending on the stakeholder group and its characteristics.

  - **Pre-Proposal outreach**: A series of public webinars can introduce SBCE objectives and benefits, followed by an open Q&A process. This has been successfully implemented in Mexico, Colombia, California, the UK, and New York Stat (See Table 30, California).
  - **Permanent engagement:** Apart from the consultation during regulatory development, the Management Body could establish engagement channels with regulated sectors and stakeholders to engage in SBCE discussions.
  - **Public-private roundtables**: These enable targeted discussions on technical and sectoral issues. Sessions should be conducted before, throughout and after the rulemaking process, ensuring that early drafts benefit from stakeholder input and that issued regulations are adequately understood, mitigate risk of misinformation and find needs for further clarification and communication. New York State's 2023 emissions program successfully applied this model, holding industry-specific webinars and equity-focused roundtables. [24]

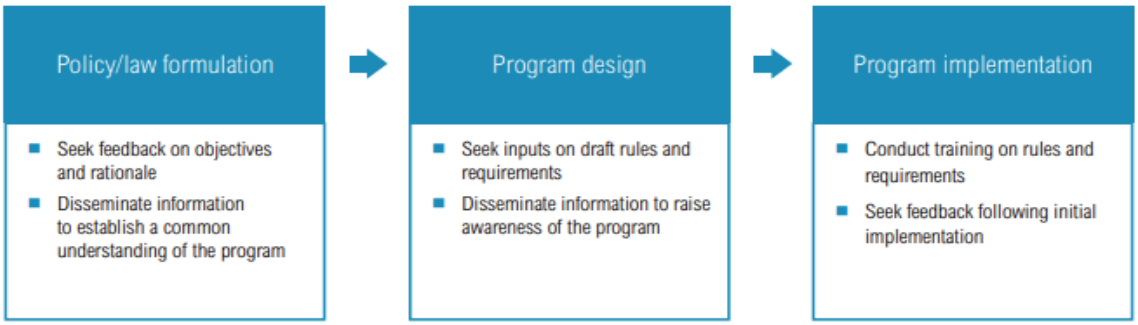
- Advisory and Consulting Bodies under the SBCE Law:

  - **Permanent Technical Advisory Committee (PTAC):** This committee is responsible for providing technical and scientific input to the SBCE governance bodies. Ensuring that PTAC members have relevant expertise will strengthen its ability to support regulatory decisions and system implementation (Art. 9, §1)
  - **The Regulatory Affairs Chamber**, which operates within the PTAC, has a more specialized role. Composed of representatives from regulated sectors it is responsible for reviewing and providing input on specific regulatory matters before their formal adoption. These include the accreditation and de-accreditation of methodologies for generating CRVEs, monitoring methodologies, and periodic reconciliation requirements. While the Chamber focuses primarily on regulatory processes, its insights could also contribute to broader strategic considerations. Ensuring that its consultative role is clearly defined and appropriately integrated within the PTAC's broader advisory framework will be essential for maintaining balanced and effective governance.

[24] New York State, 2024

- **Public agency engagement:** Engagement with CIM ministries should be coordinated through the SBCE Working Group (GTT/SBCE) to ensure timely and efficient communication with relevant agencies throughout policymaking. Additional meetings with state governments, the judiciary, and agencies outside CIM may be beneficial for specialized technical and sectoral discussions.

Figure 6 - Focus of stakeholder engagement during each stage of the program



Source: WRI and World Bank Group: Guide for Designing Mandatory Greenhouse Gas Reporting Programs. 2015

The stakeholder engagement process will enable stakeholders to influence policy design from the outset, thereby reducing political and legal risks, a few considerations are provided below: [25]

- **Regular documentation and legal stability**: Maintaining detailed records of decisions during the rulemaking and executive processes ensures a strong foundation for future reviews and legal challenges. This has been key for California's legal strategy in cases where the cap-and-trade program has been challenged in the courts. California has been able to transparently demonstrate how each regulatory decision was taken in consideration of stakeholder's concerns. Continuous monitoring of political and legal risks allows for early engagement and negotiation. [26]
- **Economic and social impact considerations:** Stakeholder engagement should consider concerns about competitiveness and distributional effects. Economic modelling should assess how carbon pricing impacts businesses, employment, and household costs (e.g., electricity, fuel, and heating). These findings should be clearly communicated to stakeholders as part of the RIA process.
- **Engagement with non-state actors and protected groups:** The Management Body must assess the approach to engage with non-state actors, including local communities and indigenous populations and local communities. The Local Communities and Indigenous Peoples Platform (LCIPP), established in 2015 under the UNFCCC, strengthens indigenous and local knowledge on climate action, facilitates experience sharing on mitigation and adaptation, and enhances their engagement in the UNFCCC process, serving as a valuable resource for establishing interactions with LCIPPs.
- **Just transition considerations:** The Management Body must assess the magnitude of adverse impacts to vulnerable groups, and initiate engagement when necessary. Discussions

[25] PMI, 2020
[26] PMI, ICAP 2020

should be open to bottom-up solutions, including social welfare measures and complementary policies that support low-carbon alternatives. A just transition perspective would look to address the distributional impacts on household expenditure. As well as encompass broader social implications of the low-carbon transition. This includes implementing retraining programs for workers from former carbon-intensive industries, ensuring that climate mitigation and adaptation solutions receive adequate climate finance, and guaranteeing that investments benefit and protect the most vulnerable groups in society.

- **Transparency and accountability:** The decision-making process should be clearly communicated, ensuring stakeholders understand how their input is used. Engagement efforts should be formally documented and evaluated for effectiveness.
- **Respect and Trust**: The SBCE should value stakeholder knowledge and concerns, fostering trust while maintaining regulatory independence.

As with other Building Blocks, it is recommended to refer to international practices, as shown in Table 4, to incorporate effective stakeholder engagement strategies from other jurisdictions, ensuring the plan benefits from global best practices. In China, the Ministry of Ecology and Environment regularly invited stakeholders from other ETSs to discuss the design of a national ETS, making related lessons more effective.[27]

Timeline considerations

The definition an engagement strategy is expected to be undertaken on Stage I, as the engagement process will inform the design and implementation of the SBCE.

Responsible agency

The Management Body, or its interim body is expected to establish the stakeholder engagement plan and define the channels and methods for engagement with different stakeholder profiles.

[27] PMI, 2021a

Table 4 - Policy choices and options Governance.Engagement.2

Activity	Policy Options	Jurisdiction	Description[28]
Governance.Engagement.2: Developing a stakeholder engagement plan	**Option A**: Stakeholder engagement from the lead-up to introducing ETS	Mexico	• Stakeholder engagement in the development of Mexico's ETS began in 2016, with SEMARNAT involving key industries through informal meetings and a working group, turning initial criticism into private-sector support by 2018. • The process included commissioning studies on technical ETS aspects and conducting capacity-building activities, which were crucial for aligning best practices with the national context and maintaining institutional memory. • Continuous dialogue and collaboration led to the establishment of a consultative committee in 2020, ensuring ongoing support and recommendations for the ETS as part of Mexico's climate policy.
		California (WCI)	• Regular Public Meetings (2009-2012): Over 40 public meetings were held to ensure transparency and public involvement in the design of the Cap-and-Trade Program. • Market Advisory Committee (MAC) (2007): Composed of experts with experience in other ETSs like the EU ETS, this committee advised on creating a market-based mechanism for reducing greenhouse gases.29 • Economic and Allocation Advisory Committee (EAAC) (2009): Formed to give recommendations on allowance value and distribution, this committee included 16 experts in economics, finance, and policy, divided into subcommittees addressing various related issues.30 • Emissions Market Assessment Committee (EMAC): Tasked with identifying market issues, this committee worked on price containment reserves, information sharing, resource shuffling, and linking with Québec, holding both public and confidential meetings. • Market Simulation Group (2012): Established to identify concerns through simulation analysis, focusing on risks of market disruption and manipulation. Their findings were presented publicly and opened for stakeholder comments.
		Tokyo	• Stakeholder Meetings (July 2007 - January 2008): Held by the Tokyo Metropolitan government with over 200 attendees, including business groups, companies, environmental NGOs, and government officials, to address public concerns and build trust. • Engagement Process: Utilized various formats like expert panels, thematic meetings, and public forums across different phases to ensure comprehensive stakeholder involvement and feedback.

[28] PMI, 2020

[29] See California Market Advisory Committee (2007) for a description of the role of Market Advisory Committee (MAC) and the committee's findings

[30] See Economic and Allocation Advisory Committee (2010) for the full report of EAAC's recommendations to CARB.

Activity	Policy Options	Jurisdiction	Description[28]
	Option B: Intergovernmental coordination and task force	New Zealand	• Intragovernmental Collaboration: Formation of the Emissions Trading Group with officials from multiple ministries facilitated effective design and implementation. • Leadership and Oversight: The project was led by a manager from the Ministry for the Environment (MfE) with joint oversight by the Treasury and MfE chiefs, ensuring cross-departmental coordination. • Focused Meetings: MfE-led sprints facilitated quick decision-making on less contentious issues and provided a forum for tackling complex topics like emissions targets and methane incorporation

	Option C: Documenting decision-making and stakeholder engagement to mitigate legal and political risks	California	• Throughout California's extensive planning, learning, and outreach efforts, each decision was carefully documented and why it was reached, providing a strong foundation for defending the Cap-and-Trade Program against legal challenges. Additionally, CARB followed through with plaintiffs and associations to find common ground and reach compromises:
			  • Initial Scoping Plan (2009): Court upheld CARB's authority. Post-ruling: 35% of revenue benefits low-income communities, involving them in decisions.
			  • Offsets (2012): Legality upheld by courts. Post-ruling: Engaged marginalized communities to address concerns and communicate benefits.
			  • Auctioning Allowances (2013): Court affirmed CARB's authority, rejecting tax claims. Post-ruling: Included businesses and communities in discussions.
			  • Linking with Québec (2019): Court ruled in California's favor. Post-ruling: Continued inclusive decision-making with Québec and stakeholders.

Summary Table 3 - Stakeholder engagement

Building Block 3: Stakeholder engagement					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options/ Considerations**	**International examples**
Governance. Engagement.1 - Identify and profile stakeholders	• Stakeholder identification and profiles • Establish a permanent process for stakeholder identification	Interim Body/ Management Body	Stage I	NA	NA
Governance. Engagement.2 - Develop a stakeholder engagement plan	• Defined roles of the advisory and consulting bodies established in the Law of Law • Report on stakeholder engagement international best practices • Stakeholder Engagement Plan for each Stage of the SBCE design and implementation process • Establish channels for stakeholder engagement	Interim Body/ Management Body	Stage I	A2 Option A: Stakeholder engagement from the lead-up to an ETS	• Mexico • California • Tokyo
				A2 Option B: Intergovernmental coordination and task force	• New Zealand
				A2 Option C: Stakeholder engagement to mitigate legal and political risks	• California

BB4. Communication strategy

Governance.Communication.1 - Develop and implement communication strategy

Communication strategies focus on disseminating information and building support for the SBCE implementation in Brazil. The PMR *Guide to Communicating Carbon Pricing* offers a structured approach to crafting effective communication strategies for carbon pricing policies. It emphasizes early preparation, audience identification, robust research, and message design tailored to audience values. The Guide highlights eight key steps[31]:

1. **Early Preparation:** Integrate communication planning with policy design from the start.
2. **Audience Identification**: Segment audiences into government policymakers, priority stakeholders, and the general public, further dividing them by attitudes and demographics.

[31] PMR, 2018

3. **Research**: Utilize both quantitative and qualitative research to understand audience attitudes and values.
4. **Message Design**: Align messages with audience values, focusing on positive narratives around fairness, common sense, and clean energy.
5. **Explanation:** Use simple language to explain carbon pricing, focusing on its benefits rather than technical details.
6. **Trusted Communicators**: Employ trusted individuals outside the government to enhance credibility and engagement.
7. **Policy Integration**: Ensure communication strategies align with policy design and involve broad stakeholder consultation.
8. **Campaign Design**: Follow a step-by-step approach, maintaining consistency, simplicity, and anticipating opposition.

SBCE Law

The Law emphasizes transparency as one of the SBCE principles, including making emissions data, credit transactions, and compliance reports publicly accessible to ensure accountability and foster trust among stakeholders (Art. 4). A communication strategy should incorporate this principle to effectively engage and inform the public.

Policy considerations

The Management Body should develop and execute a communication strategy to raise awareness of carbon pricing and markets, drawing on international best practices to address stakeholder concerns and gain acceptance. Transparency is crucial to build trust in the implementing institutions.

To achieve these goals, communication should be tailored to specific sectors and stakeholders, highlighting both benefits and obligations, and should be receptive to feedback. Narratives must resonate with stakeholders' values throughout the stages of carbon pricing, including design, implementation, and review. The methods for delivering the narratives could involve a variety of methods such as general dissemination: through events, workshops, and seminars to educate the public about the benefits and mechanics of the SBCE. It is recommended to commission consultation reports to identify community leaders, environmental organizations, and industry associations to disseminate information and to understand audience perspectives and develop targeted communication strategies. Between 2019 and 2020 the PMR Colombia project provided technical assistance to the Colombian Government to develop ETS branding alternatives, creating audiovisual materials, and delivering training to policymakers on how to communicate the fundamentals of an ETS.[32]

Timeline considerations

The communication approach should be informed by the capacity-building assessment discussed in *Building Block 5.5 BB5. Knowledge development* . The communication program should start early, well before the introduction of the final rulemaking for the SBCE.

[32] PMR Colombia, 2020

Summary Table 4 - Stakeholder engagement

Building Block 4: Stakeholder engagement					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options/ Considerations**	**International examples**
Governance. Communication.1 - Develop and implement a communication strategy	Communication strategy to raise awareness and buy-in of carbon pricing and markets	Management Body	Stage I	NA	Colombia

BB5. Knowledge development

This building block focusses on the knowledge development needed in the public and private sectors to support the effective operation of the SBCE. It is related to the stakeholder engagement building block but has a narrower focus on those involved in the operation of the system and market.

Governance.Knowledge.1 - Identify capacity needs and prepare a capacity building plan

Knowledge sharing and capacity building efforts should reflect the distinct roles and responsibilities of different actors within the SBCE:

- Private Sector (Regulated Entities and Market Participants): These actors need to understand their legal obligations under the system and how to comply with them, including reporting, verification, and potentially trading allowances or credits. They will also need the capacity to internalize emissions pricing into decision-making, such as investment planning and risk assessment.
- Public Sector (Government Agencies and Oversight Bodies): These actors require the technical and institutional capacity to regulate, operate, and evaluate the SBCE. This includes policy planning, system oversight, enforcement, data analysis, and overall governance of the emissions trading system.

Knowledge development is expected to evolve alongside the stages of system implementation and should be designed as a continuous and adaptive process.

Policy considerations

The process the Brazilian government has undertaken to develop the Law has built up a significant bank of knowledge in both the private and public sectors as well as from the civil society. This builds on international support through the Partnership for Market Readiness, and

capacity building work supported by countries. Targeted capacity assessments and planning are required to tailor capacity-building efforts to the distinct needs of public and private actors:

For the Public Sector:

- There is a need to map and assess the institutional roles of key agencies, particularly the Management Body and ministries involved in the Interministerial Committee on Climate Change.
- Gaps include limited experience with emissions trading, insufficient interagency coordination policy enforcement, and unclear technical capacities for monitoring and enforcement.

For the Private Sector:

- While some regulated entities have experience with emissions accounting, there is inconsistent knowledge of bottom-down mandatory MRV protocols, compliance cycles, and credit use.
- Awareness of how the SBCE will affect operations, reporting, and strategic planning is still limited, especially among small and medium-sized emitters.

Knowledge development should focus on four central objectives:

1. Ensuring that those organizations with legal obligations under the system understand and are able to comply with those obligations
2. Ensuring that those organizations with an essential role in the operation of the system understand and can deliver on those functions.
3. Ensuring organizations have the knowledge they need to deliver on the objectives of the system, for example regulated entities incorporating emissions pricing into investment decisions.
4. Ensuring regulated entities, civil society and public officials have sufficient knowledge to engage with the regulation process.

Delivering these objectives should be supported by a knowledge development strategy, which prioritizes activities throughout the implementation stages of the SBCE. For each development stage of the SBCE, the strategy should consider the knowledge development needs of the following groups:

- Government agencies involved in the development, implementation and operation of the SBCE. This should focus on the Management Body, given its range of responsibilities
- Regulated entities
- Other involved entities; for example, verifiers, producers and developers of credit projects, or trading exchanges

Developing the strategy has six main steps. For each implementation stage of the SBCE, the strategy should:

1. Leverage on the engagement described in *Building Block 5.4 BB3. Stakeholder engagement and communication* strategy *Activity 1. Identify and profile stakeholders*, to conduct a detailed assessment of capacity needs among the three main groups set out above, across

the four objectives. This assessment should evaluate their current level of preparedness for ETS implementation and identify the additional resources and actions required to establish the necessary capacity for successful operation.

2. Identify the highest priority knowledge development needs, alongside those with a lower priority.
3. Identify the most appropriate options to undertake the knowledge development (see options below).
4. Estimate the resource requirements of each option to produce a prioritized list of activities and their resource requirements. This should consider both financial and human resources required to deliver knowledge development activities.
5. Assess the prioritized list of activities against the available resources to provide a recommendation of the activities to deliver in each implementation stage.
6. Implement the knowledge development strategy.

Timeline considerations

Identifying capacity needs and the implementation of modes should begin in Stage I.

Responsible agency

The Management Body, with the support of the GTT/SBCE, should identify capacity needs and prepare a knowledge development plan for both the public and private sectors.

Governance.Knowledge.2 - Deliver capacity building plan: Public Sector

Policy considerations

Early priorities for knowledge development could include:

1. Capacity building procurement to provide a "train-the-trainers" approach to SBCE bodies and Ministries involved in the Interministerial Committee on Climate Change.
2. Hosting inter-agency workshops during Stage I to foster a shared understanding of the regulatory design, system development roadmap, and key roles and responsibilities.
3. Hosting emission trading simulation tools, allowing state actors to participate in a fictitious process of designing or participating in an ETS, enhancing the learning experience and exploring realistic scenarios of policy applications in the different stages of implementation. Design aspects, such as scope, the use of credits to offset obligations and methods for allocation can be simulated for Stage I and II. Auctioning simulation and use of revenues can be included in later stages.
4. Supporting technical staff in emissions monitoring, compliance enforcement, and allowance tracking through targeted training modules.
5. Workshops across government during Stage I to ensure a shared understanding of the regulatory timeline and activities required.

Knowledge development modes range from in-person activities undertaken in small groups, to large public events and information that is made available to the public. Delivery modes for the public sector include:

- **In-person training:** Workshops and seminars focused on regulation, enforcement, and governance.
- **Certification courses:** Targeted at system administrators and technical specialists.

Peer exchange: Study tours or technical exchanges with ETS regulatory bodies in other jurisdictions.The most appropriate mode will depend on the specific circumstances and should be assessed through the development of the strategy.

Timeline considerations

Knowledge development is expected to begin in Stage I, aligned with the early stages of SBCE design and interministerial coordination.

Responsible agency

The Management Body should identify capacity needs and implement the resources needed for capacity-building.

Governance.Knowledge.3 - Deliver capacity building plan: Private Sector and other involved actors

Policy considerations

The success of the SBCE hinges on the readiness of a diverse set of non-governmental actors, who play complementary roles in ensuring system functionality, integrity, and environmental effectiveness. These include:

- Regulated entities, which must comply with SBCE obligations such as monitoring, reporting, verification (MRV), surrendering CBE's and managing their emissions.
- Other involved actors, including third-party verifiers, credit project developers, accreditation bodies, consultants who provide essential technical and market services.

Each group has unique capacity-building needs and levels of preparedness. A targeted, phased approach to knowledge development is essential to ensure compliance, quality assurance, and market efficiency. While early awareness of the SBCE exists among certain private sector stakeholders, detailed knowledge of system requirements and operational procedures remains limited. Gaps vary by actor type:

Regulated entities:

- Many lack familiarity with market-based regulation, emissions reporting protocols, compliance cycle requirements, asset trading or credit use.
- Smaller and mid-sized firms may not have internal systems or personnel ready to manage carbon obligations and may not have information on abatement options.
- Sector-specific nuances (e.g., in energy-intensive industries) may need to be addressed in training materials.

Other involved actors:

- Verifiers and accreditation bodies have limited experience with SBCE-specific standards and procedures.
- Credit developers require clarity on methodologies, approval processes, and the interface between the voluntary and compliance markets.

Recommendations for regulated entities:

- Develop clear and accessible guidelines on SBCE compliance obligations, especially MRV and emissions reporting.
- Delivery of specific training workshops tailored to the emissions profiles and operational realities of key industries (see BB13. Supporting documents for MRV)
- Launch interactive webinars and help desks to address technical questions and promote ongoing support.
- Host emission trading simulation tools, allowing non-state actors to participate in a fictitious process of participating in an ETS, enhancing the learning experience and exploring realistic scenarios of policy applications and decision making without real life risks.
- Establish a centralized knowledge hub with templates, FAQs, and sector-specific compliance tools.

For other (non-state) actors:

- Publish accreditation guidelines and provide hands-on training for third-party verifiers, focusing on audit procedures, reporting formats, and quality assurance.
- Facilitate technical workshops for credit project developers to support the design, registration, and issuance of mitigation outcomes under the SBCE.
- Engage market service providers in consultations and training to ensure alignment with regulatory infrastructure and data-sharing protocols.
- Support professional development initiatives, including the potential creation of a certification pathway for verifiers and project auditors.

Timeline considerations

- Stage I: Begin with foundational outreach, ETS simulations and general training for regulated entities and verifiers, especially in sectors likely to be included in the early SBCE phases.
- Stage II: Expand to specialized technical training and support for project developers, market facilitators, and second tier regulated entities.
- Ongoing: Continue updating materials and offering refresher sessions as the regulatory framework evolves.

Responsible agency

The Management Body should identify capacity needs and implement the resources needed for capacity-building.

Summary Table 5 - Knowledge development in the private and public sectors

Building Block 5: Knowledge development in the private and public sectors					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options/ Considerations**	**International examples**
Governance.Knowledge.1 - Identify capacity needs and prepare a capacity building plan	• Detailed assessment of capacity needs of the stakeholders and public agencies • Prioritized list of activities and their resource requirements. This should consider both financial and human resources required to deliver knowledge development activities.	Management Body	Stage I onwards	NA	NA
Governance.Knowledge.2 - Deliver capacity needs and prepare a capacity building plan – Public sector	• Knowledge development modes design and implementation delivered by priority criteria	Management Body	Stage I onwards	NA	NA
Governance.Knowledge.3 - Deliver capacity needs and prepare a capacity building plan – Private sector and other actors	• Knowledge development modes design and implementation delivered by priority criteria	Management Body	Stage I onwards	NA	NA

3. SBCE design, scope, and ambition

Section Summary

The effectiveness of the SBCE depends on its strategic integration within Brazil's PNMC, ensuring that carbon pricing aligns with the broader policy framework. Economic modelling and impact assessments should guide the SBCE's design and implementation to achieve cost-effective emissions reductions while fostering economic growth and social welfare.

High-level decisions will shape the fundamental structure of the SBCE. First, determining the sectors and gases to be covered, along with the placement of the reporting regulation across the sector's value chain. These decisions will not only define the list of regulated entities—and, consequently, the MRV regulatory agenda—but also influence the distribution of mitigation efforts between covered and non-covered sectors. Second, setting the ambition of the cap, both initially and over time, will influence allowance distribution and provide a long-term economic signal for low carbon growth. Third, defining the length of compliance and commitment periods will impact the compliance cycle, the stability of incentives, and the timing of policy reviews. Finally, decisions regarding the use of carbon credits within the emissions trading system, particularly the type and quantity permitted, should balance compliance flexibility with environmental integrity, ensuring that emissions reductions within the system remain a priority.

Building Block 6: Policy Analysis and SBCE in a Coherent Policy Mix – Priority Activities

- **The SBCE positioned within Plano Clima.** Ensuring alignment with national mitigation strategies and international commitments. The CIM's Executive Chamber, it's GTT/SBCE and the Management Body should ensure that the system is part of the scope and objectives of Plano Clima.
- **Economic modelling will assess the impact of different SBCE design scenarios.** Regulatory Impact Assessments (RIA) should be conducted to evaluate cost-benefit implications, competitiveness effects, and potential economic disruptions. This process should consider previous modelling work and be sure to include just transition principles.
- **The SBCE designed to complement existing climate policies.** Overlaps or conflicts with existing carbon pricing initiatives, energy policies, and sectoral regulations should be analysed before implementation. This will help avoid regulatory inefficiencies and market distortions.

Building Block 7: Scope and Regulated Entities – Priority Activities

- **Clearly defined sectors, sources, gases, and installations covered by the.** This will provide a pathway for regulatory activity, as well as clarity and predictability for reporting and surrendering obligations to the operators. Early definition is crucial to enable the

development of the necessary MRV (Monitoring, Reporting, and Verification) systems and infrastructure. Establishing scope in Stage I will provide the regulatory certainty needed for stakeholders to prepare for reporting and compliance obligations. Sectoral stakeholders and relevant government agencies should be involved in this definition process.

- **The implementation of SBCE obligations will be phased in progressively but mapped long-term.** Prioritizing sectors with established emissions monitoring systems will enable gradual integration while maintaining regulatory stability. The Management Body should oversee this process, ensuring a predictable transition for affected industries.

Building Block 8: Commitment and Compliance Periods – Priority Activities

- **Commitment periods defined to provide market certainty.** Establishing the duration of the National Allocation Plans (NAPs) will affect long-term investment planning and policy stability. The CIM and Management Body should determine these periods in alignment with Brazil's climate targets.
- **Compliance cycles will include clear reporting, verification, and enforcement requirements.** Regulated entities should have transparent obligations for emissions reporting and reconciliation of allowances. The Management Body should ensure consistency with the compliance cycles of international MRV (Monitoring, Reporting, and Verification) practices, while considering the resources needed for their implementation.

Building Block 9: Cap Setting – Priority Activities

- **A transparent and science-based methodology for setting emissions caps.** Caps should align with Brazil's decarbonization objectives while allowing for economic flexibility. Stakeholder consultation and regular reviews will be key to maintaining environmental integrity and feasibility.
- **The SBCE's initial will likely be defined during Stage III to meet regulatory deadlines.** Although emissions data may still be evolving, the first National Allocation Plan (NAP) must be approved 12 months before its validity period at the start of Stage IV. This means that cap-setting decisions must be finalized within the first year of Stage III, primarily using a top-down approach based on national statistics.
- **Rules for banking allowances across commitment periods will provide market certainty and clarity.** Allowing the carryover of allowances should be balanced to prevent market distortions while encouraging early emissions reductions. The Management Body should establish these rules with input from financial regulators and consider a conservative approach for the first NAP, while the system is consolidated.
- **A process for regular adjustments of the SBCE will be established, based on emissions data and market conditions.** Periodic reviews will ensure that the cap reflects technological advancements, economic trends, and policy developments. The Management Body should establish this process with guidance from sectoral regulators.

Building Block 10: Integration of CRVEs to the SBCE – Priority Activities

- **Accreditation criteria for CRVEs will guarantee compliance with the SBCE Law**. Certified Reduction and Verified Emission (CRVE) units must meet environmental integrity standards to be recognized under the SBCE. The Management Body will oversee the accreditation process to align with international best practice and to include the assessment of credit certifiers and programs.
- **Quantitative limits on CRVEs will follow cost-effective analysis and technical criteria to maintain market integrity**. To prevent excessive reliance on offsets, the Management Body is expected to set rules for determining the percentage of compliance obligations that can be met using CRVEs.
- **A robust enforcement framework and liability provisions to regulate CRVE usage**. Monitoring, liability rules, and penalties for non-compliance are expected to be established to maintain credibility and prevent market manipulation.

Figure 7 - SBCE design, scope, and ambition - Activities identified on the thematic area

SBCE design, scope and ambition			Timeline			
			Stage I	Stage II	Stage III	Stage IV
BB6. Policy analysis and SBCE in a coherent policy mix	Design.Analysis.1	Address the role of the SBCE as part of the development of Plano Clima				
	Design.Analysis.2	Prepare economic modelling of various SBCE scenarios and Regulatory Impact Assessment				
	Design.Analysis.3	Identify and analyze SBCE potential interactions with new and existing policies				
BB7. Scope and regulated entities	Design.Scope.1	Define activities, sources and installations in scope of the SBCE				
	Design.Scope.2	Define gases in scope of the SBCE				
	Design.Scope.3	Define inclusion thresholds and regulated entities				
	Design.Scope.4	Define phase-in of activities, sources and installations in the SBCE				
BB8. Commitment periods and compliance periods	Design.Periods.1	Define commitment period				
	Design.Periods.2	Define compliance period				
BB9. Cap setting	Design.Cap.1	Define the cap trajectory				
	Design.Cap.2	Define the banking rules				
BB10. Integration of CRVEs to the SBCE	Design.CRVEs.1	Establish the criteria for accrediting methodologies for generating CRVEs				
	Design.CRVEs.2	Define the quantitative limits of CRVEs under the SBCE				
	Design.CRVEs.3	Establish enforcement and liability frameworks				

BB6. Policy analysis and SBCE in a coherent policy mix

Design.Analysis.1 - Address the role of the SBCE as part of the development of Plano Clima

The objectives and priorities of the SBCE will contribute to Brazil's climate commitments as part of the broader climate framework.

SBCE Law

As defined in the SBCE Law, the purpose of the SBCE is to fulfil the PNMC and the commitments made under the UNFCCC (Art 3 and Art 4, II). Accordingly, emission caps on the commitment periods are to be in line with the targets set in the PNMC (Art 5, IV).

Policy considerations

The Law establishes the needed alignment with the PNMC, early definitions will include how the SBCE will contribute to achieving Brazil's climate policy objectives as part of the greater climate framework.

The CIM is currently developing the National Climate Change Plan (Plano Clima) for 2024-2035 as an operationalization of/implementation plan for the PNMC (Law no. 12.187), updated in 2024 to align with Brazil's enhanced NDC and the ETP. Plano Clima will include national and sectoral mitigation strategies, aiming to establish specific goals, objectives, and actions to meet targets for 2030 and 2035. The plan is expected to outline the role of the SBCE in the decarbonization pathways of various sectors. It will determine whether the SBCE will act as a primary mitigation strategy for certain sectors or as a supportive mechanism for existing mitigation policies.

Furthermore, the SBCE is identified as a central implementation instrument within the ETP, which seeks to restructure Brazil's economy toward sustainability by aligning regulatory, financial, and technological mechanisms to support the transition. The alignment of SBCE design and operation with ETP priorities, such as technological innovation, just transition, and sectoral productivity, will be essential to ensure coherence and maximize the instrument's impact.

Timeline considerations

This activity is expected o be undertaken as early as possible, as it will inform the definition of other design elements and characteristics of the instrument and should inform the process of defining Plano Clima.

Responsible agency

Considering the role that CIM has on developing Plano Clima, this Roadmap considers it the authority responsible in determining the role of the SBCE.

Design.Analysis.2 - Prepare economic modelling of various SBCE scenarios and Regulatory Impact Assessment

The SBCE design must be supported by quantitative analysis of the economic and environmental impacts of different design options. The analysis should also assess the impact of the SBCE on economic and industrial policy, ensuring that the carbon price provides a consistent set of incentives for the development of the economy. A quantitative analysis should assess the impact of the SBCE on vulnerable businesses and communities as basis for potential support measures.

SBCE Law

The Law of Law establishes that the SBCE will promote the competitiveness of the Brazilian economy; promote sustainable development and climate equity; ensure the conservation and strengthening of native vegetation reservoirs and carbon sinks; and respect the rights and autonomy of the indigenous and traditional peoples and communities.

All regulatory acts by the Management Body must comply with Art. 5 of Law 13.874, the Economic Freedom Act in Brazil, which mandates a Regulatory Impact Analysis (RIA) for all economic activity regulations (Art. 8), to assess the reasonability of the social and economic impacts of the regulation.[33]

Policy considerations

Comprehensive economic modelling, either in general, sectoral or partial equilibrium models, of the establishment of the SBCE in potentially covered sectors is essential. Quantitative analyses should evaluate the potential impacts of various SBCE scenarios, including different sets of covered sectors and inclusion thresholds, aligned caps to decarbonization trajectories, allocation methods, the use of offsets, and market stability mechanisms. These analyses must consider how the SBCE might affect household disposable income due to increased costs in impacted sectors, such as electricity and fuel for transport. Additionally, it is crucial to examine how carbon pricing could affect businesses, determining whether industry competitiveness might be compromised potentially leading to broader societal impacts. The results from these analyses can inform the design of the SBCE to mitigate negative effects. Presenting these findings through the RIA process to stakeholders and the public can enhance transparency and public buy-in.

The 2020 PMR Brazil Project analysed alternative climate policy instruments to identify the policy package that would generate the most favourable socioeconomic impacts while achieving the NDC. This was accomplished through an Impact Assessment comprising economic modelling and an RIA. Work was developed in 2024, under the PMI's Just in Time work, to update the modelling assumptions and reflect the latest emissions trajectories, economic conditions, and definitions prescribed by the Law. This work will be critical for the SBCE implementation assessments. Additionally, according to interviews conducted for the Roadmap, the Executive Secretariat of the CIM will carry out an economic and social impact assessment of the National Mitigation Strategy of the Plano Clima that should consider the updated analysis of the 2020 PMR Brazil project modelled scenarios.

[33] LEI Nº 13.874, 2019

International best practices recommend the development of an economy-wide modelling and RIA of various SBCE scenarios. The PMR Brazil 2020 modelling work, and the recent update from the PMI Just in time project, will serve as a reference and starting point. This analysis assesses the scenarios' impact on key macroeconomic variables and provide inputs for SBCE design characteristics. Additionally, a cost-benefit analysis will be conducted in accordance with Law 13.874 and regulatory improvement guidelines.

Timeline considerations

This activity needs to be undertaken as early as possible, as this will inform decisions on a range of other elements and characteristics of the instrument and should inform the process of defining Plano Clima. Other specific sectoral economic analysis should be developed in Stage II.

Responsible agency

Considering the role that the CIM has on developing Plano Clima, this Roadmap considers it the authority responsible for the policy analysis. In the initial stages, while the governance framework for the Management Body is established, the interim body and the Grupo de Natureza Técnica Temporária SBCE (GTT/SBCE) would be the best option for coordinating the modelling work.

Design.Analysis.3 - Identify and analyze SBCE potential interaction with new and existing policies

The SBCE must be strategically positioned within a broader policy and legal framework, considering its relationship with other sector policies to enhance its effectiveness and manage policy interactions. These sector policies will have an influence on the effectiveness of the SBCE, including the level of emissions reductions, the allowance price, and the system's distributional impacts. The PMI and others classify the cross-policy interactions as 'complementary' when the effectiveness of the ETS is improved, 'overlapping' when other policies duplicate the incentive that should be provided by the market, and 'countervailing' when the policies counteract or minimize the effect of the ETS. Additionally, policy interactions should address the possibility of unexpected effects in the covered sectors.[34]

SBCE Law

Among the principles set up by the Law, the legislator mentions the compatibility and articulation between the SBCE and the instruments available to achieve the objectives and targets of the PNMC. Furthermore, the governance framework set forth by the Law involves an interministerial body, the CIM, in charge of aligning sectoral climate and development strategies. Provision of the Law explicitly refer to coordinated faculties between the Management Body, CONAREDD+ and the Nationally Designated Authority under the UNFCCC (Art. 12, 13, 43). Transitional Provisions (Chapter V) adopt reforms to Law no. 12.187, the Forest Code and Law no. 6385 'Regulations of Interest to Foreign Investors' and to align with SBCE implementation.

[34] PMR, ICAP, 2021

Policy considerations

The SBCE will coexist with both existing and new companion policies introduced by Plano Clima or in areas beyond climate policy like energy, industrial and social policies. Understanding how these policies interact with the SBCE is crucial for defining its design characteristics. This understanding will ensure compatibility with the current policy mix and help identify areas where existing "legacy policies", certain of which were implemented before new mitigation commitments were made, may need modification. To evaluate these interactions, the PMR's guide *Carbon pricing assessment and decision-making: a guide to adopting a carbon price* recommends identifying and classifying policies within sectors potentially covered by the SBCE.[35] Careful consideration of these interactions should be incorporated into policy design and reform efforts.

Once these interactions are identified, a technical note could assess the impacts of complementary policies on ETS effectiveness and their implications for design features. This assessment should consider how positive interactions could reduce transaction and economic costs, informing the impact analysis developed as part of *Design.Analysis.2 - Prepare economic modelling of various SBCE scenarios and Regulatory Impact Assessment*. For overlapping policies, a technical note should evaluate their objectives beyond those duplicative of the SBCE and explore different pathways to improve policy interactions. Finally, countervailing policies should be assessed within broader policy strategy, considering potential pathways for reform through a policy alignment roadmap.[36]

The activity includes the development of a policy alignment roadmap. Considering the impact of policy interactions should be part of the RIA and inform the considerations for SBCE design.

Timeline considerations

This activity is expected to be undertaken in Stage I, as these will inform the definition of other design elements and characteristics of the instrument and should inform the process of defining Plano Clima.

Responsible agency

Considering the role that the CIM has on developing Plano Clima, this Roadmap considers it the authority responsible in determining the interactions of the SBCE with new and existing policies. Policy Analysis will continue to play an important role throughout the development of the SBCE. In the initial stages, while the governance framework for the Management Body is established, the Grupo de Natureza Técnica Temporária SBCE (GTT/SBCE) would be the best option for coordinating the modelling work.

[35] PMR 2, 2021. The guide provides templates to identify and detail potential policy interactions.
[36] UNDP, 2021

Summary Table 6 - Policy Analysis and SBCE in a coherent policy mix

Building Block 6: Policy Analysis and SBCE in a coherent policy mix					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Design.Analysis.1 - Address the role of the SBCE as part of the development of Plano Clima	• Proposed framework for SBCE implementation as part of the National Mitigation Strategy within Plano Clima	CIM and GTT/SBCE – Management Body	Stage I	NA	NA
Design.Analysis.2 - Prepare economic modelling of various SBCE scenarios and Regulatory Impact Assessment	• A versatile modelling tool that can be adjusted to suit various policy requirements. • Technical report analyzing the performance of various SBCE scenarios under different design characteristics. • Cost-benefit analysis in accordance with Law 13.874.	CIM and GTT/SBCE – Management Body	Stage I, Stage II	NA	NA
Design.Analysis.3 - Identify and analyze SBCE potential interaction with new and existing policies	• Technical note identifying potential policy interactions, and assessment of the impacts of complementary policies on the SBCE effectiveness. • Reform and alignment roadmap for counteracting and overlapping policies	CIM and GTT/SBCE – Management Body	Stage I, Stage II	NA	NA

BB7. Scope and regulated entities

Design.Scope.1 - Identify activities, sources and installations in scope of the SBCE

This activity seeks to define the activities and sources which will face obligations under the SBCE. Broadly this will define the emissions and removals captured by the scheme, as well as the extent to which it will be able to incentivize reductions in emissions in the Brazilian economy. Decisions on the scope of the SBCE have direct implications for the ability of the system to deliver reductions in emissions in line with expectations set out in the Plano Clima.

SBCE Law

The Law sets out:

- The law defines key terms:

- A source is defined as a process or activity, owned by an operator, which produces greenhouse gases, aerosols, or their precursors (Art. 2)
- An activity is any action, transformation process or operation that emits greenhouse gases (Art. 2)
- An installation is a physical property or area where one or more stationary sources associated with emissions of greenhouse gases are located (Art. 2)
- An operator is the regulated agent in the SBCE. An operator owns an installation or source associated with some greenhouse gas emitting activity (Art. 2). The regulated entity owns the emitting installation or source. This suggests that the Law refers only to direct emissions, ruling out upstream or downstream regulation.
- A Certificate of Verified Emissions Reduction or Removal (CRVE) is a fungible, tradable asset representing the reduction or removal of 1 tCO2e of greenhouse gases, verified through an accredited methodology and registered under the SBCE (Art. 2, III; Art. 12).
- Internationally Transferred Mitigation Outcomes (ITMOs) refer to mitigation results transferred between countries under Article 6 of the Paris Agreement, subject to prior authorization by the national authority and corresponding adjustments (Art. 2, XXXIV; Art. 12, II; Art. 51).

- Agricultural production, and its associated assets, infrastructure and rural properties are excluded from obligations under the SBCE (Art. 1 §2). Indirect emissions resulting from the production of agricultural inputs will not be covered by obligations either. (Art. 1 §3).
- The Management Body must define the activities, installation, sources and gases to be regulated under the SBCE for each commitment period (Art. 8).
- Where removals by regulated entities exceed their emissions, these may be issued as CRVEs according to regulations (Art. 1). Verified removals must undergo a registration process under the SBCE before being issued as CRVEs (Art. 1, §5).
- Installations and sources with emissions above 10,000 tCO2e are subject to Measurement, Reporting, and Verification (MRV) obligations, and those above 25,000 tCO2e are subject to surrender obligations under the SBCE (Art. 31 I and II).[37] The Management Body can increase these thresholds (Art. 21, §1).
- Thresholds are based on gross rather than net emissions, meaning removals are not deducted when determining whether an installation is covered (Art. 8, item IV). However, net emissions may be used for compliance reconciliation (Art. 5, item III).
- The obligations under the SBCE, including MRV and surrender requirements, will only apply to activities for which consolidated measurement, reporting, and verification methodologies exist (Art. 30, §2). The Management Body must define these methodologies before regulating an activity, ensuring that emissions are accurately measured and verified. The methodologies must consider the specific characteristics of each activity type, preventing the regulation of sectors where MRV standards are not yet developed.

Policy considerations

The Law provides a framework for scope and regulated entities of the SBCE and leaves flexibility for significant portions of the policy to evolve over time through changes over successive NAPs to the sources, activities and installations in scope of the system. Further flexibility is

[37] An entity emitting 100ktCO_2e and removing 95ktCO_2e, for example, would be subject to both monitoring and reporting obligations, even if its surrender obligations consider the removals volume.

afforded through the adjustment of the inclusion thresholds (discussed under *Design.Scope.3 - Define inclusion thresholds and regulated* entities*)*.

Another degree of flexibility provided by the Law is the inclusion of sources next to installations. This could refer to mobile emitters like aeroplanes and road transport vehicles, or stationary sources of emissions like landfills. There is a trade-off between the flexibility given by the Law and the robustness and success of the SBCE. Providing regulatory certainty to participants will be essential to the success of the SBCE. Clarity on which parties will face obligations under the scheme, when they will face obligations and confidence that those obligations will remain in place over the long term supports those parties to make investments to reduce emissions and respond to the incentives provided by the scheme. The choice of source and installation as the regulated point is crucial and varies by ETS aim and sector emission profile and should be decided carefully.

Decisions on the emissions installations, sources or activities to include in the scheme will need to balance regulatory efficiency (which will tend towards a more limited scope) against the reach of the scheme and its ability to incentivize reductions in emissions with the least cost of abatement. It is useful to consider the economy by sector when addressing these questions as this helps understanding the regulatory needs and abilities of the regulated entities.

Decisions on the sectoral scope of a scheme should consider factors in seven main areas:

1. **Emission levels.** High-emission sectors covering a high share of the emissions of a jurisdiction are often prioritized in the scope design, as a significant proportion of emissions from a jurisdiction can be captured through the inclusion of two or three sectors. This typically leads to schemes covering power generation and industry, including sectors such as steel, cement and aluminium. Potential for GHG emissions reduction is another important variable. Sectors for which cost-effective emissions reductions are already available can deliver quick and economically effective emissions reductions. This cost heterogeneity can also reduce the compliance costs for sectors where it is more difficult to abate emissions through the trading of allowances. In the longer term, emissions pricing can incentivize the development and deployment of new low carbon technologies.
2. **Economic impact.** It is also important to consider economic impact, including international competitiveness and a sector's role in the national economy. Impacts on international competitiveness can be mitigated through free allocation. Inclusion in an ETS can also help manage taxation on the carbon content of exports through border carbon adjustment mechanisms like the EU CBAM.
3. **Data availability and modelling**. Accurate and reliable emissions data are essential for an ETS to determine obligations, allocations and caps. Sectors with the capacity to collect and report robust emissions data are simpler to regulate. For the SBCE, this also plays a regulatory dimension, as the SBCE Law prescribes that the obligations under the SBCE, including MRV and surrender requirements, will only apply to activities for which consolidated MRV methodologies exist, so the pace in which these methodologies are issued will determine the inclusion of sectors under the SBCE. The initial decisions about the sectors that will be covered may require some assessment of the data which will be available once the MRV system is in place. The cost associated with MRV is also an important factor. For example, sectors whose primary source of emissions is burning fossil fuels can rely on emissions factors and maintain accurate reporting. At the other end of the scale, waste incineration can require flue gas sampling and isotope analysis to accurately measure fossil CO_2 emissions. Such analysis is costly and complex.

4. **Administrative capacity and concentration.** Larger sectors with fewer, larger emitters require less resources and result in lower costs to manage than sectors with many small emitters (as can be the case with agriculture and transport, if regulated at point source).
5. **Market function.** While a small number of participants can be good for administrative efficiency, emissions markets need a sufficient number of participants to promote gains from trade and allow for effective price discovery.
6. **Transition risk.** It can be beneficial to include sectors with a high transition risk as carbon pricing can help managing short-term or immediate risks including new carbon border adjustment mechanisms, and long-term risks driven by changes in global markets and patterns of demand.
7. **Political economy.** Finally political economy always has a bearing on decisions relating to scope and coverage. Some sectors are more politically sensitive than others, and inclusion could risk support of the system as a whole. Revenue use is a relevant consideration here, as schemes with a high degree of transparency on where funds generated by the ETS are allocated generally enjoy better public support.

We recommend a range of options for the scope of the system be produced, from targeted, limited scope to broader. Options can inform advice to policymakers and help inform decisions on thresholds (explored further in *Design.Scope.3 - Define inclusion thresholds and regulated* entities, below).

Brazil is a special case as approximately two thirds of emissions can be attributed to agriculture and LULUCF and only around a third to energy consumption and industrial processes, as shown in Annex 1. Nevertheless, an ETS does not necessarily need to cover a major share of emissions of a jurisdiction, provided there are sufficient participants to support a well-functioning market. Ideally the assessment above would lead to a recommended option or range of options for the sectoral coverage of the SBCE.

Timeline considerations

Decisions on scope and coverage are prioritized in the initial development of the scheme. Clear definition of these elements provides for efficient development of the MRV system, as well as follow-on decisions on cap setting, allocation of free allowances and offset limits.

An alternative would be to decide on the final SBCE scope when full MRV data are available. This approach would delay the decision on the SBCE scope to at least the middle of Stage 3, three to four years after the Law passes and coinciding with the release of the first NAP. It would take an implicit decision to start the MRV Stage with a full scope, covering all entities above the inclusion threshold of 10,000 tCO2e. This would provide more data to inform decisions on scope, but it would reduce regulatory certainty for participants and significantly complicate decisions on cap setting and unit supply.

Responsible agency

Management Body

Table 5 - Policy choices and options Design.Scope.1

Activity	Policy Options	Jurisdiction	Description[38]
Design.Scope.1 Identify activities and emissions sources in scope of the SBCE	**Option A**: Limited sectoral scope	• China national • RGGI • Indonesia EVCTS • Mexican ETS • Canada OBPS • UK ETS • Switzerland ETS	• Power sector • Power sector • Power sector • Power and industry • Power and industry • Power, industry and domestic aviation • Power, industry and domestic aviation
	Option B: Broad sectoral scope	• New Zealand ETS • Republic of Korea ETS • Chinese pilots • German national ETS	• Power, industry, buildings, transport, maritime, domestic aviation, waste, forestry • Power, industry, buildings, transport, maritime, domestic aviation, and waste • Power, industry, buildings, transport, maritime, domestic aviation • Power, industry, buildings, transport, waste (fuel suppliers)

Design.Scope.2 - Identify gases in scope of the SBCE

This activity seeks to define the gases in scope of the SBCE.

SBCE Law

The Law sets out:

- The Management Body must define the activities, installation, sources and gases to be regulated under the SBCE for each commitment period (Art. 8).
- Emissions of carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons can be covered by the scheme (Art. 2). Additional gases may be included based on the UN Framework Convention on Climate Change (Art. 2, XIII)

Policy considerations

The Law provides for the gases included in the scope of the scheme to be decided for each commitment period. Deciding the gases to be included at the outset of the scheme would provide the maximum regulatory certainty to participants. We recommend this approach is adopted in Brazil.

Decisions on the gases to include in the scheme will seek to balance simplicity of the scheme and MRV requirements (which could tend towards the scheme capturing CO_2 only) and the coverage of the scheme, which would tend towards the inclusion of more gases.

The assessment of gases to include in the scheme should consider:

[38] ICAP, 2024c

1. **Emissions levels.** The gases which represent the highest proportion of the emissions from the sectors in scope of the scheme should be prioritized. Internationally there are example of schemes which focus on the energy sector applying obligations to CO_2 only.
2. **Sectoral scope.** Not all sectors emit all gases. Certain gases are only emitted in specific industrial process. As agriculture has been excluded, there may be a case for the SBCE not covering methane.
3. **MRV requirements and costs.** Like the assessment of the sectors for inclusion in the scheme, an assessment should be made of the resources required to undertake MRV on each gas. This assessment should seek to maximize the quantity of emissions captured by the scheme, while minimizing MRV costs to participants.

Timeline considerations

It is recommended that decisions on gases are prioritized alongside those on the sectors within the scope of the scheme and made as early as possible in the initial development of the scheme.

Responsible agency

Management Body.

Table 6 - Policy choices and options Design.Scope.2

Activity	Policy Options	Jurisdiction	Description[39]
Design. Scope.2 Identify the gases in scope of the SBCE	**Option A:** Limited GHG scope	• RGGI • China national • Mexican ETS	• CO_2 • CO_2 • CO_2
	Option B: Broad GHG scope	• UK ETS • European Union ETS • Canada OBPS • New Zealand ETS	• CO_2, N_2O, PFCs • CO_2, HFCs, N_2O, PFCs, SF_6 • CO_2, CH_4, N_2O, SF_6, HFCs, PFCs • CO_2, CH_4, N_2O, SF_6, HFCs, PFCs

Design.Scope.3 - Define inclusion thresholds and regulated entities

This activity seeks to define the thresholds applied to sources of emissions, above which operators face obligations to report emissions or reconcile obligations under the SBCE.

SBCE Law

The Law sets out that:

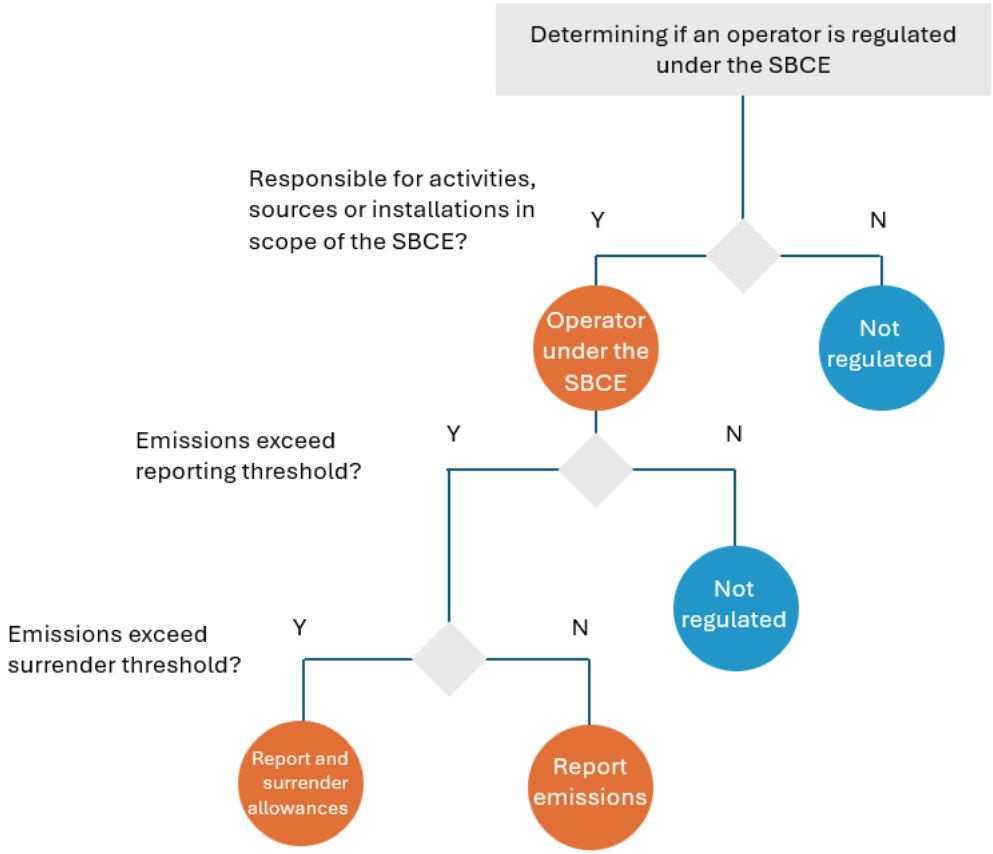
- An operator is the regulated entity in the SBCE. An operator owns one (or several) installation(s) or source(s) associated with some greenhouse gas emitting activity (Art. 2).

[39] ICAP, 2024c

- Operators responsible for installations and sources emitting over 10,000 tCO2 per year must submit a monitoring plan for consideration by the management body, report on their emissions and removals as per the monitoring plan, and meet other obligations as formalized by the Management Body (Art. 30).
- Operators responsible for installations and sources emitting over 25,000 tCO2 per year are subject to the additional obligation to periodically reconcile obligations, meaning they must surrender CBEs or other eligible assets to cover their emissions (Art. 30)
- The Management Body can increase these thresholds through regulation (Art. 30)
- Forestry assets (e.g. in the context of the pulp and paper sector) could fall within their scope of obligation and reporting, with potential generation of CRVEs where removals exceed emissions. This has implications both for scope and for provisions for liability and permanence. (Article 1 §5)

These provisions indicate that the following decision tree would apply in identifying those operators regulated under the SBCE.

Figure 8 - Decision tree for identifying operators regulated under the SBCE



Source: SBCE Law

Policy considerations

Design.Scope.1 in this building block should define the activities, installations and sources in scope of the scheme. We recommend an assessment of the entities which would be regulated under the scheme considering these definitions.

The final variable to define is the thresholds to be applied when determining if regulated entities are required to report emissions and surrender allowances.

An initial assessment of the interpretation of the term operator should be made. This should assess how legal structures which bring together multiple businesses (for example a conglomerate) should be treated.

Options for threshold levels should be developed and assessed against:

- The number of entities captured under the option. Is this high or low? Does it present an administrative challenge?
- How are operators defined based on direct or indirect control of emissions sources?
- The quantity of emissions captured under the option. Is this in line with the objectives of the system?
- The main characteristics of the entities captured under the option. How to define sources and installations under an operator? What is their administrative capacity? Do they have existing experience in MRV? Is MRV difficult for the entities in question?

Timeline considerations

The entities regulated under the scheme will need to begin measuring emissions data during Stage III. This will require them to develop monitoring plans during Stage II.

To meet this timeline, the regulated entities will need to be defined at the end of Stage I, or latest early in Stage II so that they have time to prepare for monitoring in Stage II.

Responsible agency

Management Body

Table 7 - Policy choices and options Design.Scope.3

Activity	Policy Options	Jurisdiction	Description[40]
Design.Scope.3. Define inclusion thresholds and regulated entities	**Option A: Single threshold**	China national ETS	• Captures 2,000 companies in the power sector with annual emissions over 26,000 tCO_2.
		Mexico	• Captures installations in the power and industry sectors with annual direct emissions from stationary sources of at least 100,000 tCO_2. • Captured approximately 295 entities in 2023.
		RGGI	• Most RGGI states cover power sector installations with capacity equal or greater than 25 MW. • Captured 195 entities in 2023.
	Option B: Multiple thresholds	European Union	• Various thresholds. Power stations with over 20 MW rated thermal input, various thresholds across industry, commercial aircraft operators with annual emissions in excess of 10,000 tCO_2. • Captured 8,640 installations and 390 aircraft operators in 2022.
		New Zealand	• Various thresholds applied across forestry, stationary energy, industrial processing, liquid fossil fuels, waste and synthetic greenhouse gases. • There were 4,114 registered participants in 2023.

Design.Scope.4 - Define phase-in of activities, sources and installations

This activity seeks to define when the activities, sources and installations within the scope of the scheme will begin to face obligations to report emissions and removals and surrender allowances.

SBCE Law

The Law sets out:

- The Management Body must define the activities, installations, sources and gases to be regulated under the SBCE for each commitment period (Art. 8).

[40] ICAP, 2024c

- The National Allocation Plan shall have a gradual approach between consecutive commitment periods, ensuring predictability for operators. (Art. 21).
- Obligations to report emissions, removals, and to surrender allowances will only apply to activities for which consolidated MRV methodologies exist. The Management Body must establish these methodologies before imposing compliance obligations, considering the specific characteristics of each activity type (Art. 30, §2).

Policy considerations

The Law allows for the scope of the SBCE to be adjusted gradually over time, including the option to introduce obligations incrementally. Design.Scope.1 will identify the sectors that fall within the scope of the scheme. This activity aims to determine when these sectors would begin to be required to comply with reporting obligations and/or to surrender allowances. Gradual introduction of sectors has the benefit of allowing systems to be tested and refined before full implementation, though it postpones the incentive to reduce emissions.

It is recommended that the decisions on introducing obligations consider:

- The availability of MRV methodologies for each sector. According to the Law, obligations should not be introduced for a sector until robust MRV methodologies are in place, ensuring emissions and removals can be measured and verified consistently.
- The preparation required from each sector to be ready to participate in the SBCE. For example, industrial firms with extensive MRV experience will require less preparation than waste processors where MRV systems are less established.
- The number of participants in the market, and how this will grow over time. A functioning market depends on a critical number of participants. Ideally each Stage should include enough participants to provide for a functioning market.
- Early emissions reductions. Sectors which have known opportunities to reduce emissions can be prioritized for early wins in the system.
- Transition considerations. For example, if a sector is likely to be impacted by a carbon border tax mechanism coming into force it could be prioritised to reduce any obligations.

In a broad sense, options range from full implementation across all regulated sectors from the outset of the scheme to a phased approach which would bring sectors into SBCE in stages. If Brazil decides on a phased approach, best practice will see the phasing announced at the outset of the scheme. This assists in policy predictability and provides the maximum lead-in time for regulated entities to prepare for participation, in line with the legal framework established by the SBCE Law.

Timeline considerations

It is recommended that decisions on phasing of sectors happen during Stage I in parallel with those on sectors and gases under Activities 1 and 2 above.

Responsible agency

Management Body.

Table 8 Policy choices and options Design.Scope.4

Activity	Policy Options	Jurisdiction	Description[41]
Design. Scope.4. Define phase-in of sectors in the SBCE	**Option A: No phase-in**	• China national ETS	• Became operational in 2021, covering an estimated 5 Million tonnes of CO_2 equivalent. The scheme currently covers the power sector. There is a stated intention to expand to more sectors.
	Option B: Phase-in	• New Zealand	• The phase-in of sectors in the NZ ETS was set out in its establishing legislation[42]. Changes were made to delay the entry of some sectors through amendments to the legislation.

[41] ICAP, 2024c
[42] Parliamentary Counsel Office, 2002

Summary Table 7 - Scope and regulated entities

Building Block 7: Scope and regulated entities					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Design. Scope.1: Define activities, sources and installations in scope of the SBCE	• Decisions on the activities, sources and installations in scope of the SBCE • Detailed assessment regulatory needs and abilities of each sector in the economy • Options for scope to inform decision-makers	Management Body	Stage I	A1 Option A: Limited sectoral scope	• China national • RGGI • Indonesia EVCTS • Mexican ETS • Canada OBPS • UK ETS • Switzerland ETS
				A1 Option B: Broad sectoral scope	• New Zealand ETS • Republic of Korea ETS • Chinese pilots • German national ETS
Design. Scope.2: Define gases in scope of the SBCE	• Decisions on gases to be included the scope of the SBCE • Detailed assessment of the sources of greenhouse gases in Brazil, to inform decisions under A1.	Management Body	Stage I	A2 Option A: Limited GHG scope	• RGGI • China national
				A2 Option B: Broad GHG scope	• Mexican ETS • UK ETS • European Union ETS • Canada OBPS • New Zealand ETS
Design. Scope.3: Define inclusion thresholds and regulated entities	• Decisions on the inclusion thresholds to apply during the first NAP • Detailed assessment of the number and type of entities captured under each of the options set out under A1	Management Body	Stage I	A3 Option A: Single threshold	• China national ETS • Mexico • RGGI
				A3 Option B: Multiple thresholds	• European Union • New Zealand
Design. Scope.4: Define phase-in of activities, sources and installations in the SBCE	• Decisions on a potential phase-in of activities, sources and installations in the SBCE • Detailed assessment across the sectors identified as in scope of readiness; number of entities; available emissions reductions; transition risk	Management Body	Stage I	A4 Option A: No phase-in	• China national ETS
				A4 Option B: Phase-in	• New Zealand

BB8. Commitment periods and compliance periods

Design.Periods.1 - Define commitment periods

This activity seeks to define the commitment periods (*período de compromisso*) used in the SBCE. Each commitment period has a corresponding NAP.

SBCE Law

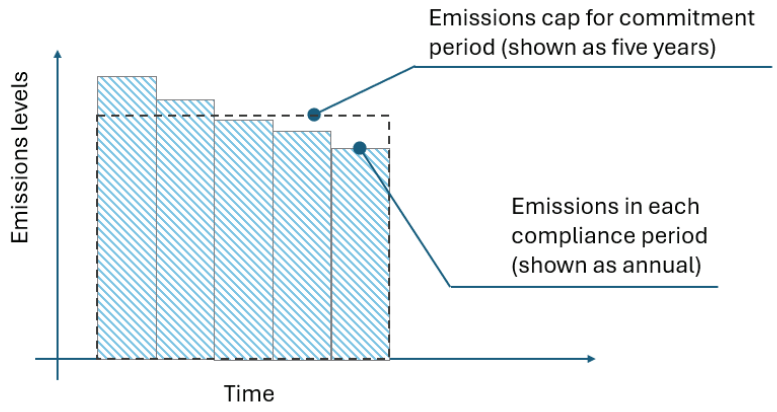
The Law sets out that:

- Each NAP covers a commitment period for which the emissions cap and allocation to operators is determined (Art. 21). Allocation could happen once in each commitment period, or once per compliance period.

Policy considerations

Typically, the aim of commitment periods is to provide medium-term predictability to support stability and solid price discovery in the emissions trading market. They do this by defining an emissions cap and unit supply over multiple compliance periods, providing a forward view of the likely scarcity of emissions allowances over that time. The figure below shows a potential relationship between the compliance and commitment periods. A well-designed commitment period will support firms to make long-term investments in emission reductions,

Figure 9 - Relationship between compliance and commitment periods in emissions trading market



Source: made by authors

The length of the commitment period needs to balance providing this certainty with retaining flexibility to respond to unforeseen circumstances: a longer commitment period provides more certainty at the cost of reduced flexibility to respond to unforeseen circumstances such as how the global economy develops, changes in technology, or developments in consumer preferences. To be useful in forward planning, it is recommended that the commitment periods are

at least three years. To allow for long-term flexibility and adjustments to technological and socioeconomic developments, they should not be longer than ten years. Other commitments also should be considered, for example long-term climate commitment, technology challenges, alignment with NDCs, and political cycles.

The length of commitment periods can also change, for example a shorter first NAP, for learning reasons, as the SBCE is being established, followed by longer periods once operators and regulators are more familiar with it and length tend to be aligned with climate goals, for example, NDC periods.

Timeline considerations

The commitment period needs to be defined during Stage III, so that it can inform the development of the first NAP. The first commitment period could start at earliest in 2029, depending on when the Law passes and the length of Stage I.

Responsible agency

SBCE Management Body

Table 9 - Policy choices and options Design.periods.1

Activity	Policy Options	Jurisdiction	Description[43]
Design.periods.1: Define commitment period	A1 Option A: Shorter commitment period, for example four years	**Korea**	Korea operates phases for which an overall cap on emissions applies. The phases have been three or five years and also establish an annual cap on emissions in the scheme.
	A1 Option B: Five years, aligned to the NDC cycle	**United Kingdom**	In the United Kingdom, allocation periods set the cap in the scheme. The allocation periods last five years, and the cap applies to the full five-year period. The allocation periods align with the NDC cycle, with the second and third periods running from 2021 to 2025, and 2026 to 2030, respectively.
	A1 Option C: Long commitment, e.g. ten years	**European Union**	The phases of the EU ETS extended over time with Stage 1 from 2005 to 2007, Stage 2 from 2008 to 2012, Stage 3 from 2013 to 2020 and Stage 4 from 2021 to 2030, now spanning over ten years.

[43] ICAP, 2024c

Desing.Periods.2 - Define compliance periods

The compliance period refers to the period for which regulated entities are and required to surrender allowances. This activity seeks to define the compliance period for the SBCE.

SBCE Law

The Law specifies that:

- The compliance period for the SBCE could be equal to the commitment period, or shorter (Art. 34).
- Operators must submit an annual report on their greenhouse gas emissions and removals (Art.32)

Policy considerations

The main decision to be made is between a typical compliance period of one year, or something longer. Considerations in this decision will include the administrative burden on regulated entities, implications for incentives to reduce emissions, and implications for price discovery and revenue collected by the government.

A short compliance period implies regulated entities interacting more regularly with the system and potentially the market. A long compliance period might cause short-sighted entities to buy allowances only towards the end of the period, close to their surrender obligation. This might mean that trading in the beginning of the period is weak as well as the price signal. A weak price signal might in turn reduce the incentive to reduce emissions as well as ETS revenues.

Timeline considerations

It is recommended that the compliance period is defined alongside the commitment period, during Stage III, ideally even earlier.

Responsible agency

Management Body

Table 10 - Policy choices and options Design.periods.2

Activity	Policy Options	Jurisdiction	Description[44]
Design.periods.2: Define compliance period	**A1 Option A: Annual compliance**	• European Union • Germany • Switzerland • United Kingdom • Canada • Mexico • Indonesia • Korea	• The vast majority of schemes in operation around the world feature a compliance period of one year. Aligns with typical financial reporting timelines.

[44] ICAP, 2024c

Activity	Policy Options	Jurisdiction	Description[44]
	A1 Option B: Longer compliance periods	• China national ETS (two years) • California, Québec, Colorado, Washington, and the Regional Greenhouse Gas Initiative	• China national ETS uses a compliance period of two years • This group of systems incorporate a compliance period of up to three years, with a requirement to surrender a portion of the obligation on an annual basis. Longer compliance periods can be useful for sectors which operate on a longer timeframe, or where more time is useful to assist in reliable monitoring, reporting and verification of emissions.

Summary Table 8 - Commitment periods and compliance periods

Building Block 8: Commitment periods and compliance periods					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Design.periods.1: Define commitment period	Decision on the first commitment period for the SBCE	Management Body	Stage III	A1 Option A: Five years, aligned to the NDC cycle	• United Kingdom
				A1 Option B: Shorter commitment period	• Korea
Design.periods.2: Define compliance period	Decision on the compliance period to apply during the first commitment period	Management Body	Stage III	A2 Option A: Annual compliance	• European Union • Germany • Switzerland • United Kingdom • Canada • Mexico • Indonesia • Korea
				A2 Option B: Longer compliance periods	• China • California • Québec • Colorado • Washington • RGGI

BB9. Cap setting

Design.Cap.1 - Define cap trajectory

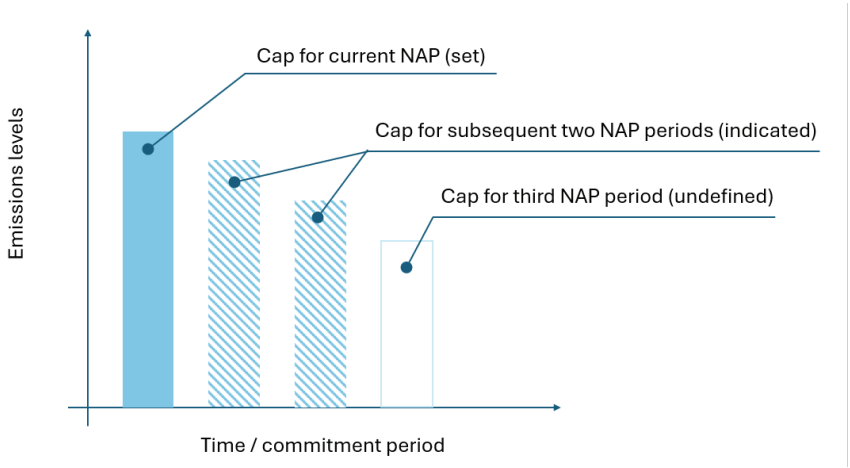
This activity seeks to define the emissions cap to be applied to the first NAP, as well as the trajectory of emissions reductions.

SBCE Law

The Law sets out that:

- The purpose of the SBCE is to support compliance with Brazil's National Policy on Climate Change (PNMC) and the commitments made under the UNFCCC, including the country's Nationally Determined Contributions (NDCs) (Art. 3, Sole paragraph). The establishment of emissions caps under the SBCE will be critical to fulfilling this purpose.
- Article 21, I states that the National Allocation Plan (NAP) must establish a maximum emissions limit for each commitment period.
- Article 21, §1, III further establishes that the NAP must estimate the trajectory of greenhouse gas emission limits for the two subsequent commitment periods. This allows for successive caps to be reviewed and refined over time, ensuring a dynamic approach to emissions control.
- Article 21, §1, II sets out that the NAP must be approved at least 12 months before its period of validity to provide predictability and allow regulated entities adequate time to prepare.

Figure 10 - The trajectory of emission caps reduction of SBCE



Source: made by authors

Policy considerations

Cap setting will define the emissions limit for the whole commitment period as well as how allowance supply will evolve during the commitment period, i.e. the breakdown into annual caps. Emissions caps are critical to the regulatory certainty the scheme needs to be successful, and have two key objectives:

- Communicate the emissions reductions expected under the system in the nearest commitment period, including the trajectory within the commitment period.
- Signal the emissions reductions and cap trajectory anticipated over the longer term.

If the use of CBEs across different commitment periods is authorized by the NAP, as indicated in Art. 11, II, the cap per year or per commitment period will not be identical to the emissions level. It will however provide an important signal for the allowance price and hence the emissions level. Decisions on the cap will need to consider:

- The emissions reductions expected to be delivered by the SBCE. This will also need to consider the package of interventions required to deliver Brazil's NDC commitments, and the most efficient balance of emissions reductions under the SBCE, and those delivered through other means outside the scheme.
- How the emissions reduction pathway is expected to develop over time. This should consider both developments within the commitment period and over subsequent commitment periods.
- Economic and social impacts. Setting a cap too low could lead to excessive economic impacts, too high could lead to more costly reductions being required through other means to achieve the NDC.
- Sectoral differences. The cap reflects the ability of the covered sectors to reduce emissions, considering differences in technology, infrastructure, and market conditions. If the Plano Clima establishes targets for individual sectors these should also be considered when defining the cap.
- The role of potential reserves (e.g., for new entries and price stabilization mechanisms) as well as the quantitative share of surrender obligations that can be covered by offset credits.
- Decisions on whether these reserves are included in the overall cap are needed.

A recommended approach in deciding the cap could be undertaken over four steps:

1. Develop cap options. These should reflect the decisions on ambition of the scheme undertaken through *Building Block 3.1 BB11. Monitoring and* reporting.
2. Undertake detailed analysis of the options. This should include assessments of the economic and social impacts of the scenarios, building on the assessments undertaken under *BB6. Policy analysis and SBCE in a coherent policy mix* under the activity *Design.Analysis.2.*
3. Undertake stakeholder and public consultation on the cap options.
4. Finalize cap decisions.

Timeline considerations

The initial cap for the SBCE needs to be included in the first NAP, which needs to be approved 12 months before its period of validity at the beginning of Stage IV. This means the NAP needs to be approved one year into Stage III. The data from the first year of operation of the MRV system will also be available at approximately the same time.

This timing will require the majority of the policy work and preparation for decisions on the cap to be undertaken "top down" based on national statistics before verified data is available. The MRV data can then be used to define the final cap to be included in the NAP and agreed with stakeholders.

Responsible agency

SBCE Management body.

Design.Cap.2 - Define banking rules

Banking refers to the ability to bring forward allowances from one compliance period into the subsequent and following compliance and in consequence commitment periods.

SBCE Law

The Law sets out that:

- The use of allowances (CBEs) across different commitment periods is subject to SBCE regulations and must be authorized by the National Allocation Plan (NAP) (Art. 11, §2, II).

Policy considerations

Limiting banking between commitment periods has the advantage of avoiding situations where a lax cap causes an oversupply in subsequent Stages. The disadvantage of establishing very restrictive limits is that it may provide weaker incentives for companies to reduce their emissions in the short term, as they cannot cash in the benefit of carrying an allowance surplus into future Stages. Past international experience has been that the initial Stage of an ETS often entails less stringent cap, and that protecting future ETS Stages from an artificial allowance oversupply by not allowing banking is important.

Borrowing, which refers to the use of future allowances for current surrender obligations, in general is only allowed to a very limited degree to attend to the technicalities of the compliance cycle. Extensive borrowing of allowances would likely water down the price signal of an ETS.

In addition, the legal nature of SBCE assets as securities when traded in financial and capital markets, and the potential use of financial instruments, such as derivatives and other futures contracts, to hedge compliance costs, may also have implications for the intertemporal efficiency of the SBCE. These financial products can influence market expectations and potentially affect price stability and investment signals across commitment periods. For this reason, coordination with the Securities and Exchange Commission (CVM) will be important in the early stages of the system's implementation, to ensure regulatory alignment and preserve market integrity.

Timeline considerations

Decisions on banking of allowances would be needed before the NAP is approved one year before the beginning of Stage IV. If a regulatory instrument is required to enact a restriction, this would need to be in place before the approval of the NAP.

Responsible agency

Management Body

Table 11 - Policy choices and options Design.cap.2

Activity	Policy Options	Jurisdiction	Description[45]
Design.cap.2: Define banking rules	**Option A: Allow banking without restriction**	• European Union • Switzerland • United Kingdom	• No restriction on banking of allowances within a commitment period.
	Option B: Allow some banking	• Canada • Mexico	• Allowances can be banked and remain valid for compliance for five years after the date of issue. Compliance is annual. • Allowances allocated during the pilot phase will not be valid in the operational phase. Banking will be allowed in the operational phase.
	Option C: Do not allow banking	• Indonesia	• Banking is not allowed between phases.

Summary Table 9 - Cap setting

Building Block 9: Cap setting					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Design.cap.1: Define the cap trajectory	• Decision on the cap to be included in the first NAP • Detailed assessment of cap options	Management Body	Stage III	n/a	• n/a
Design.cap.2: Define the banking rules	Decisions on the approach to banking of allowances in the SBCE	Management Body	Stage III	A2 Option A: Allow banking	• European Union • Switzerland • United Kingdom
				A2 Option B: Allow some banking	• Canada • Mexico
				A2 Option C: Do not allow banking	• Indonesia

[45] ICAP, 2024c

BB10. Integration of CRVEs to the SBCE

It is envisaged in the Law that the SBCE will provide a basis for the use of eligible carbon credits (CRVEs) for offsetting compliance obligations. Offsetting allows emissions from covered sources to increase to a level above the cap while being compensated by reductions or removals elsewhere. When done well, this leads to the same level of GHG emissions as compared to a situation with no offsetting.[46] Offsetting can reduce compliance costs for regulated entities, and in theory could also reduce the economic costs of achieving jurisdictional mitigation targets, if it incentivizes cost effective abatement. It can also provide co-benefits in sectors not directly covered by the ETS – which can increase acceptability of the SBCE.

Conversely, offsetting may reduce the incentive for decarbonization within the covered sectors and can also bring additional uncertainty to the ETS market, as it is often difficult to assess the availability and prices of carbon credits over time. Defining the level of offset use must take these effects into account. Importantly, the use of low-quality offsets in the ETS can lead to a situation where total emissions in the jurisdiction are higher than if no offsets were used.[47] Allowing offsetting thus requires that the government undertake a robust assessment of the type and quality of possible CRVEs and ensure that the use of CRVEs is consistent with the country's overall strategy to achieve its NDC.

Note that the full regulation and operationalization of carbon crediting in Brazil goes beyond their use under the SBCE. This building block details the activities specifically connected to the SBCE.

Design.CRVEs.1 - Establish the criteria and process for accrediting methodologies for generating CRVEs

Jurisdictions must define which type of credits are eligible for use under their ETSs. Narrowing down credit eligibility through qualitative criteria helps to mitigate some of the risks associated with offsetting and favor activities with higher environmental integrity and co-benefits.

SBCE Law

The Law sets out that:

- The Law creates a new asset class, carbon credits in the form of CRVEs,
- Each CRVE represents a reduction in GHG emissions or an increase in GHG sequestration equivalent to one ton of CO2e, originated from methodologies accredited by the Management Body and registered within the SBCE Central Registry (Art.2, III; Art.12, and 44).
- The Management Body will set the requirements and procedures for accrediting and de-accrediting CRVE generation methodologies (Art. 8, XVII), while the Permanent Technical Advisory Committee providing recommendations on the accreditation requirements and procedures (Art. 9, I). Following these requirements and procedures, the Management

[46] This only holds true if the emissions reductions or removals are real, permanent, additional, and appropriately quantified, among others. See, Schneider, L., & La Hoz Theuer, S., 2018.
[47] La Hoz Theuer et al., 2023.

Body will accredit and de-accredit CRVE methodologies after consulting with the Regulatory Affairs Chamber (Art. 8, XVIII).

- The Law establishes conditions for the accreditation of CRVE methodologies that encompass the concept of environmental integrity. Per Article 25, the criteria for accrediting methodologies for generating CRVEs must:

    - Ensure the credibility of the origination of the assets.
    - Ensure environmental integrity and compliance with social and environmental safeguards; and
    - Prevent double counting of emission reductions and removals.

- The Law recommends that CRVE methodologies align with multilateral treaties and other definitions set by the Management Body (Art. 25, §2).
- The conversion of voluntary market carbon credits into CRVEs is prohibited if they originate from maintenance or sustainable forest management activities, unless an accredited methodology recognizes the reductions or removals associated with these credits (Art. 42)

Policy considerations

Given the importance of building a portfolio of methodologies for use under the SBCE scheme, it is imperative to establish the process, criteria and requirements that will identify the methodologies from crediting mechanisms[48] that are (a) compliant with the Law, as well as principles of additionality, robust quantification, permanence, co-benefits, leakage and NDC alignment, (b) are either appropriate to national circumstances (e.g., based on assumptions or default parameters) or can be adapted at a minimum cost, and (c) are part of a list of prioritized methodologies in line with policy objectives, including potential international transfers.[49] The assessment of methodologies to accredit in the scheme should consider:

1. **Activities outside the scope of the SBCE:** It is recommended that the first criterion excludes eligibility of credits from activities covered by the SBCE. This approach, widely used in Emissions Trading worldwide, prevents double counting of emission reductions and avoids competitive distortions within these sectors. Moreover, criteria should target transformative mitigation actions and technologies subject to barriers to adoption, such as financial feasibility or lack of technological diffusion, considering best-practice criteria for credit quality as well as a clear national strategy of the use (and international sale) of carbon credits.
2. **Prioritizing activities that pose low risks to environmental integrity alongside high sustainable development benefits:** Beyond sector-specific criteria, some jurisdictions have established temporal criteria, such as limiting the age of issued credits under approved methodologies. Regulatory additionality, where projects or activities required by law or already receiving benefits from other government incentives are not eligible for issuing

[48] Crediting mechanisms or programs include international crediting mechanisms managed by international organizations authorized by national governments, such as UN agencies and mechanisms under the Kyoto Protocol and Art. 6 of the Paris Agreement. Governmental crediting mechanisms are administered by one or more governments, like the Californian Compliance Offset Program and the Australian Carbon Credit Unit (ACCU) Scheme. Independent crediting mechanisms are run by non-governmental organizations, such as Verra and Gold Standard.

[49] PMR Brazil, 2021.

credits.[50] Geographical criteria, like prioritizing projects in certain regions or territories, have also been used. 51 Table 9 illustrates how different jurisdictions have approached the eligibility of methodologies for existing mechanisms.

3. **Assess existing crediting projects for use on the SBCE:** In general, using credits from projects registered before the establishment of an ETS - legacy projects, does not contribute to mitigation beyond what is already occurring (except for projects that need the cash flow from carbon credits to operate). Legacy projects generally have extremely low costs to generate credits, and if there is a large supply of these credits, there is no incentive for new -and truly additional- projects. So, using credits from legacy projects in SBCE involves a trade-off between compensating existing projects versus incentivizing new mitigation.

   Criteria should consider restrictions on, among others, the project timeline (e.g. the investment decision), the date when emission reductions or removals took place (irrespective of when the credits are issued) as well as on project types (e.g. focusing on projects that need carbon credit flows to continue operating).Several international experiences provide useful references: Under the Australian Safeguard Mechanism, covered entities can acquire and surrender Australian Carbon Credit Units (ACCUs) to meet compliance obligations. ACCUs are government-issued carbon credits sourced from offset projects that meet eligibility criteria. A key requirement is "newness", meaning only new projects qualify; projects already underway before the scheme took effect cannot be registered, nor can ACCUs be issued for emissions reductions achieved before the ACCU framework was implemented from these projects. [52]

   By contrast, South Africa's carbon tax framework, introduced in June 2019, does allow the use of offsets from existing projects to reduce tax liability, subject to certain conditions. Eligible "early action" credits must originate from allowed projects under the regulation and can be used within their timeframe. If the credit was sourced from activities that became covered by the carbon tax after June 2019, their use was limited to December 2022 (later extended to July 2023).[53]

4. **Assessing not only methodologies but also crediting mechanisms:** Even the best methodologies can yield poor results if implemented through ineffective mechanisms. Elements, such as robust governance is essential to maintain high environmental standards, especially when the government relies on independent crediting mechanism's infrastructure and oversight. This includes the importance of third-party validation and verification, which provide independent assurance that methodologies are executed correctly and produce reliable results.

It is recommended that the process for CRVE eligibility involves the following four stages.

Stage one, **establish criteria for mechanisms, activities, sectors, and methodologies**:

- **Mechanisms**: Define the criteria for accrediting mechanisms that will provide CRVEs to the SBCE.
- **Activities and Sectors**: Identify specific activities and sectors that may not be eligible for carbon crediting (e.g., those already regulated by mandatory schemes). For example, if the

[50] Clean Energy Regulator, 2025; IETA, 2023
[51] PMR Brazil, 2021.
[52] Australia, 2024; Clean Energy Regulator, 2025.
[53] Republic of South Africa, 2019; Republic of South Africa, 2021.

power sector is subject to a compliance scheme, methodologies for that sector would be excluded from further review.

- **Methodologies**: After filtering activities and sectors, establish detailed criteria for assessing methodologies that align with the remaining eligible sectors and activities. This ensures only relevant methodologies move forward to the assessment phase.

Stage two, define the assessment process for each of the three elements above:

- For mechanisms, for example, this could involve an application process as well as clarification on roles and responsibilities during the assessment. For methodologies, this could involve prioritization of methodologies as well as the technical process to assess them.

Stage three, implement a two-step assessment process:

- **Step 1:** Evaluate carbon crediting mechanisms based on the established criteria and process. The process starts with an application from the crediting mechanism for evaluation, followed by an evaluation by the Management Body (with input from the Regulatory Affairs Chamber), and ends with the granting of an authorization to submit applications for methodology accreditation.
- **Step 2:** Once a mechanism is authorized to submit applications for methodology accreditation, the Management Body (or a Methodological Pannel) will assess the specific methodologies under that mechanism. The process starts with an application for methodology accreditation, followed by an evaluation by the Management Body (with input from the Regulatory Affairs Chamber), and ends with the granting of conditional accreditation.

Stage four, create and update positive and negative lists:

- Regularly develop and update lists of eligible and ineligible activities or sectors, and mechanisms, based on ongoing assessments. This promotes transparency and ensures that only compliant pairs are allowed for methodology accreditation.

International resources, such as the assessments processes of Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the Integrity Council for the Voluntary Carbon Market (ICVCM), offer valuable assessment frameworks that Brazil can build upon. The ICVCM's Core Carbon Principles (CCP) assessment framework, in particular, enhances CORSIA's requirements with greater content and sophistication, providing inputs on criteria, processes, and eligible mechanisms and methodologies. Annex II – ICVCM Carbon credit assessment framework outlines the CCP assessment requirements. However, it is important for the government to consider these resources critically, as some approved mechanism/methodology combinations may not align with Brazil's priorities. Brazil may also want to utilize mechanisms and methodologies that have not yet been approved, necessitating thorough assessments to ensure quality and consistency.

Timeline considerations

Considering the need for quick identification of methodologies, the definition of eligibility criteria should occur during the first Stage of the implementation process. The accreditation of methodologies could begin as soon as the accreditation process and eligibility criteria are established.

Responsible Agency.

The Management Body, with the support of the Permanent Technical Advisory Committee (PTAC) and input from the Regulatory Affairs Chamber, should establish the criteria for sectors and activities, mechanisms and methodologies, define the assessment process, conduct the necessary evaluations, and finally create and regularly update positive and negative lists of eligible mechanism/activities and sectors pairs based on the assessments. Given the level of complexity and technicalities in the process, it could be very useful to establish a methodological panel under the Management Body, not unlike the CDM methodological panel providing advice to the CDM Executive Board. Table 12 Policy choices and options Design.CRVEs.1

Activity	Policy Options	Jurisdiction	Description[54, 55, 56]
Design.CRVEs.1: Establish the criteria for accrediting methodologies for generating CRVEs	**Option A**: Define priority projects through accredited methodologies (Positive lists)	**Beijing Pilot**	• Developed methodologies to calculate offsets from local energy conservation projects, carbon sink projects and citizen low carbon transportation incentive projects. • Among non-Beijing CCERs, priority is given to those with regional climate or pollution control cooperation agreements
		California (WCI)	• Offset credits issued by California Compliance Offset Program, covering agriculture, forestry, mine methane capture and avoidance of ozone depleting substances.
		Shenzhen Pilot	• Two developed methodologies focus on public transportation and electricity-saving in citizen's daily life
		Québec	• Currently five domestic project protocols relating to high GWP gases (CH4 and HFC).
	Option B: Define negative lists to exclude sectors and activities	**China and Pilots**	• In China, no credits are allowed from hydropower, HFCs, PFCs, N20, and SF6 projects.
		Verified Carbon Standard (VCS) and Gold Standard	• Both crediting mechanisms exclude grid connected renewable energy projects and

[54] La Hoz Theuer et al., 2023.
[55] ICAP, 2024c
[56] Australia, 2024; Clean Energy Regulator, 2025.

Activity	Policy Options	Jurisdiction	Description[54, 55, 56]
			any projects that are above 25-megawatt capacity in specified regions
	Option C. Establish specific conditions on approved methodologies	**Australia**	• Credits from projects already underway before the scheme took effect cannot be registered • Projects or activities required by law or already receiving benefits from other government incentives are not eligible for issuing credits
		Beijing Pilot	• Projects must have begun operation after the beginning of 2013. • The use of CCERs generated by projects outside Beijing is limited to 2.5%
		China	• Credits for reductions issued before January 2013 cannot be used for compliance
		California (WCI)	• No more than half of the offset usage limit (2% of overall compliance in 2021-2025, 3% thereafter) may be sourced from projects that do not provide 'direct environmental benefits to the State' of California.

Design.CRVEs.2 - Define the quantitative limits of CRVEs to be accepted for the purpose of periodic reconciliation of obligations under the SBCE

The establishment of quantitative limits of CRVE's accepted for compliance under the SBCE is tied to several policy options and priorities. Fundamentally, it involves decisions about the balance between abatement efforts inside and outside the sectors covered by the SBCE. Setting a quantitative limit thus helps to maintain a balance between cost savings and SBCE efficiency.

This balance is also influenced by the qualitative criteria for credits used for offsetting, which helps target sources of credit supply;[57] additionally, the ambition of the cap, which determines the total abatement driven by the system; and by the scope of the system, which defines what

[57] PMR ICAP, 2021.

is subject to compliance obligations and the diversity in abatement opportunities and costs, impacting the economic efficiency of the system.

SBCE Law

The Law sets out that:

- CRVEs (Certificates of Verified Emissions Reduction or Removal) may be used for the reconciliation of obligations within limits set by the Management Body (Art. 12).
- Two key provisions govern the use of CRVEs for compliance:
    - The Management Body has the authority to establish rules and parameters for defining the limits on CRVEs that may be used for reconciliation of obligations (Art. 8, XXIV).
    - The NAP must formalize the parameters by defining the maximum percentage of CRVEs that can be used for compliance in each commitment period (Art. 21, IV).

Policy considerations

The Law mandates to define an upper limit on the quantity of CRVEs as a percentage share of all SBCE assets to be surrendered by covered entities to meet their compliance obligation. Existing ETSs differ significantly in how many credits are allowed for offsetting compliance obligations. Currently, 13 out of the 38 implemented ETSs globally prohibit the use of offsets for compliance– these include Germany, Austria, the UK ETS, Switzerland, the EU ETS and Massachusetts. Among those permitting offsets, almost 80% set maximum limits on their use for meeting obligations, and only a few impose no limits at all. Setting a quantitative limit helps ensure that covered entities invest in abatement within their activities and installations.[58] Based on international experience, policymakers have numerous options. Table 10 below illustrates a few of these options and key international experiences.

Setting quantitative limits also requires the assessment of the potential supply and cost of CRVEs.[59] An oversupply of low-cost CRVEs can depress carbon prices and reduce the incentive for in-sector reductions -given the potential for generating offsets in the land sector, properly defining a limit from available credits will be key for successful implementation of the SBCE in Brazil. Conversely, ETS demand for offsets will not materialize if abatement costs in the SBCE are lower than abatement costs among activities eligible to generate offsets. Quantitative limits can change over time, potentially relaxing, as safeguards and regulations are tested and improved.

In 2020, the Partnership for Market Readiness (PMR) Brazil Project modelled different carbon pricing scenarios to meet Brazil's NDCs, considering the economic context and restrictions.[60] The project explored the use of credits for offsetting in all the ETS scenarios and found that allowing offsetting provided flexibility in meeting regulatory targets, helped contain compliance costs, and broadened the sectors influenced by the carbon price signal, especially considering the availability of forest-based credits.[61] The technical work by the PMR Brazil project

[58] World Bank. 2024.
[59] La Hoz Theuer et al., 2023.
[60] PMR, 2020.
[61] The PMR Brazil Report modelled offset credits of forest origin at costs between USD 5 and 9 and an estimated carbon price over 2030 USD 8.4/tCO2e.

proposed a 20% limit for the use of credits to offset obligations in different scope scenarios. This figure is significantly higher than the usage in other systems, which typically ranges from 0-10%.

The PMR Brazil project has limitations for decision-making for the SBCE, and further analytical work must follow to determine policy design. It however represents a starting point to consider the economic impacts of carbon pricing implementation. It is crucial for the SBCE to set quantitative limits after a careful evaluation of the different economic and environmental impacts and determine the correct balance between reducing the compliance cost and the system's effectiveness and policy priorities. It is recommended that *Design.Analysis.2 - Prepare economic modelling of various SBCE scenarios and Regulatory Impact Assessment* from *Building Block 1*

BB6. Policy analysis and SBCE in a coherent policy mix considers the use of CRVEs under the different SBCE scenarios. An assessment could include:

- The availability and cost of high-quality credits
- The maximum limit trajectory for CRVE use
- The role of CRVEs as a price stabilization mechanism
- Conditions under which CRVE limits may be relaxed or restricted in response to market conditions

Timeline considerations

The SBCE Law identifies two key moments for policy intervention regarding CRVE limits:

- First stage – The Management Body must establish rules and parameters for defining CRVE limits, including the credit limit trajectory and whether the limit can be adjusted under specific market conditions. This should occur in Stage I.
- Second stage – The National Allocation Plan (NAP) must define the specific maximum percentage of CRVEs applicable in each commitment period. This should occur at least by the middle of Stage III, three to four years after the Law passes and coinciding with the release of the first NAP.

Responsible Agency.

The Law establishes that the Management Body will set the CRVE limits

Table 13 - Policy choices and options Design.CRVEs.2

Activity	Policy Options	Jurisdiction	Description[62]
Design.CRVEs.2: Define the quantitative limits of CRVEs to be accepted for the purpose of periodic reconciliation of obligations under the SBCE	**Option A**: Rely on eligibility criteria while setting no quantitative limit	Tokyo	• Quantitative limits apply only to outside Tokyo credits (up to one third of facilities' reduction obligations).
		Saitama	• Quantitative limits apply only to outside Saitama credits (up to one third)
	Option B: No offsetting	New York State	• New York State's ETS Pre-Proposal Outline prohibits the use of credits for offsetting compliance obligations
		EU ETS	• From Phase 4 (2021-2030), no carbon credits for offsetting are admitted. The use of removal credits is being considered for future phases.
	Option C: Fixed limit for the use of offsets	RGGI states	• Up to 3.3% of entities' compliance obligation. This quantitative limit is to remain at least until 2030.
		Shanghai	• The use of CCERs is limited to 3% of the annual verified emissions.
		Mexico	• Quantitative limit: Up to 10% of the compliance obligation
	Option D: Increased offsetting between different compliance periods	California (WCI)	• 2021-2025: up to 4% per year of each entity's compliance obligation, increasing to 6% for 2026-2030
		Oregon (suspended system)	• First Compliance Period (2022–2024): 10% of compliance obligation may be covered with CCI credits, Second Compliance Period (2025–2027): 15% and from 2028 onwards: 20% of compliance obligation may be covered with CCI credits.
	Option E: Decreased offsetting between different compliance periods	Republic of Korea	• In the first phase of the K-ETS (2015-2017) and second phase (2018 – 2021), carbon credits for offsetting could make up 10% of companies' compliance obligations • In the third phase (2021-2025), carbon credits for offsetting can only make up 5% of companies' compliance obligation

[62] La Hoz Theuer et al., 2023.

Design.CRVEs.3 - Establish enforcement and liability frameworks

Despite relying heavily on existing crediting mechanisms, domestic adjustments are necessary for policy coordination, oversight, and rulemaking. It's crucial to assign liability for the quality and quantity of carbon credits due to the legal implications of their creation and transfer under the SBCE. This ensures accountability for errors, omissions, or fraud that could lead to credit cancellation or revocation.

SBCE Law

The Law sets out that:

- CRVEs must meet the following criteria (Art. 44):
    - Originate from methodologies accredited by the SBCE Management Body.
    - Be measured and verified by an independent entity (crediting mechanism or program).
    - Be registered in the SBCE Central Registry.
- Purchasers of carbon credits—when these credits are legally classified as a civil law claim (direito de crédito)—are not legally liable for any defects, legal disputes, or irregularities related to the property where the carbon credit-generating projects were developed, unless it is proven that they acted in bad faith or engaged in fraud. Ensuring that credit buyers are not liable for land disputes or defects (Art. 43, §16).

Policy considerations

The Law does not explicitly address liability provisions for issues such as over-crediting, double issuance, or non-compliance under the SBCE. However, it establishes the general regulatory power for the Management Body to accredit methodologies that ensure environmental integrity, avoid double counting and ensure creditability of their operations (Art. 25).

The Management Body should consider a regulatory framework that outlines the conditions for credit validity and the liabilities of project generators, project developers, certifier of carbon credit projects or programs, verifiers and buyers. A clear framework for assigning liability and managing disputes is necessary to ensure efficient resolution of issues and to mitigate risks associated with credit invalidation or fraud. This regulatory framework could consider:

- Mechanism for correcting errors, such as credit cancellations or additional credit retirements when over-issuance occurs.
- Mechanisms for holding parties accountable for environmental integrity violations through enforcement actions.[63]

There are different international liability models that have been implemented in the jurisdictions implementing as ETS. The Law's provisions on limited buyer liability for property disputes on Article 43, §16 suggest an alignment with the common approach of a seller liability model, where the original seller of the credits is responsible for addressing issues such as over-

[63] PMR, 2021.

issuance. This model mandates that if credits are over-issued, the project must retire additional credits to compensate, thus preserving environmental integrity. This model:

- Facilitates a more liquid market and reduce transaction costs, benefiting buyers by ensuring that credits are generally risk-free.
- Places a significant burden on project proponents and auditors to ensure credit validity, which could result in higher credit prices due to increased risks and responsibilities.
- Requires strong enforcement mechanisms and penalties for non-compliance. [64]

The Management Body could benefit from evaluating alternative liability models, including buyer liability and tiered approaches:

- Buyer liability model (California):
    - Assigns responsibility to credit holders at the time of invalidation, which encourages thorough due diligence.
    - Policymakers in California have implemented this model, viewing carbon credits primarily as regulatory compliance instruments rather than prioritizing market liquidity.
    - Because California allows credits from outside of its jurisdiction, placing the liability on the entities using the credits rather than on project developers has ensured a sufficient supply of offsets while maintaining oversight.[65]
- Tiered-liability model (Québec offset system):
    - This model applies to the seller's liability model but includes government-backed protection to ensure buyers bear no risk. These protections are invoked only when the project proponent (project developer) cannot fulfill their liability obligations, such as in cases where the project proponent no longer exists.
    - Québec's Environmental Integrity Account withholds 3% of issued offsets to cover future liabilities if a project proponent fails to meet its obligations.
    - This approach balances market confidence with regulatory oversight, as the government replaces invalid credits only if the original seller is not able to.[66]

Timeline considerations

The establishment of enforcement regulation for CRVE use under the SBCE should begin during the Stage I and finalize before Stage II of the implementation process.

Responsible Agency.

The Management Body should develop the regulatory and enforcement framework to ensure environmental integrity, market stability, and legal clarity.

[64] Ibid, 2021, pp 97
[65] Ibid, 2021, pp 98 - 99
[66] PMR, 2021.

Summary Table 10 - Integration of CRVEs to the SBCE

Building Block 10: Integration of CRVEs to the SBCE					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Design.CRVEs.1: Establish the criteria for accrediting methodologies for generating CRVEs	• Integrate domestic and international experts to provide advice and recommendations to the SBCE on methodological matters • Best practices on eligibility criteria for assessing both mechanisms and specific methodologies	Management Body	Stage I	A1 Option A: Define priority projects through accredited methodologies (Positive lists)	• Beijing Pilot • California (WCI) • RGGI • Shenzhen Pilot • Québec
				A1 Option B: Define negative lists to exclude credit methodologies	• China and Pilots • Verified Carbon Standard (VCS) and Gold Standard
	• Eligibility criteria for both sectors and activities, mechanisms and methodologies based • Issue the regulation on the accreditation and de-accreditation process of mechanisms and methodologies	Management Body		A1 Option C. Establish specific conditions on approved methodologies	• Australia • Beijing Pilot • China • California (WCI)
	• Consultive role for the accreditation of specific mechanisms and methodologies.	Regulatory Affairs Chamber	Stage II -onwards		

Building Block 10: Integration of CRVEs to the SBCE					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Design.CRVEs.2: Define the quantitative limits of CRVEs to be accepted for the purpose of periodic reconciliation of obligations under the SBCE	• On *Design.Analysis.2 - Prepare economic modelling of various SBCE scenarios and Regulatory Impact Assessment* consider the use of offsets under the different SBCE scenarios, considering the availability and costs of high-quality credits • Establish rules and parameters for defining CRVE limits	Management Body	Stage I	A2 Option A: Rely on eligibility criteria while setting no quantitative limit	• Tokyo • Saitama
				A2 Option B: No offsetting	• New York State • EU ETS
				A2 Option C: Fixed limit for the use of credits for offsetting	• RGGI states • Shanghai • Mexico
				A2 Option D: Increased offsetting between different compliance periods	• California (WCI) • Oregon (suspended system)
				A2 Option E: Decreased offsetting between different compliance periods	• Republic of Korea
	• Set in the NAP the specific maximum percentage of CRVEs applicable in the corresponding commitment period.	Management Body	Stage III	NA	NA
Design.CRVEs.3. Establish enforcement and liability frameworks	• Assessment of the legal implications of ownership in establishing liability regulation. • Establish liability regulation	Management Body	Stage I and Stage II	A3 Option A: Seller liability	• EU
				A3 Option B: Buyer liability	• California
				A3 Option C" Hybrid Liability:	• Québec

4. SBCE compliance cycle and enforcement

Section Summary

Monitoring and reporting of emissions form the backbone of any carbon pricing instrument. Establishing rules and methodologies for these processes will be a priority in the early stages of SBCE implementation. Rulemaking will account for the need for gathering accurate data, as this will inform other high-level decisions on the SBCE. Developing methodologies for emissions removals adds complexity, as it will need rigorous standards to ensure environmental integrity and prevent double counting. The Management Body may need to take an active role in laying the groundwork for verification, especially in the early stages of the SBCE implementation. This includes defining verification rules, specifying processes, metrics, and levels of rigor, and establishing conditions for the accreditation of inspection bodies. Coordination with accreditation bodies will be essential to building the necessary capacity.

Clear rules, procedures, and regulatory actions throughout the compliance cycle are crucial for ensuring transparency and strengthening regulatory certainty. A well-defined compliance framework will facilitate the detection and resolution of noncompliance. Administrative measures to address noncompliance, including sanctioning, must be structured to effectively incentivize compliance, ensuring that penalties are proportionate and consistently applied.

Building Block 11: Monitoring and Reporting – Priority Activities

- **An MRV framework will have to be established under tight implementation timelines.** MRV rules, verifier accreditation, and stakeholder consultations must be developed in Stage I, but this will only be possible once the SBCE's scope and regulated entities are clearly defined. The Management Body should consider best practices on monitoring methodologies, existing monitoring and reporting initiatives and existing data sources to minimize reporting burdens and improve accuracy.
- **Assess the best strategy for regulating MRV for emissions removals**. Carbon sequestration activities, including forestry and carbon capture technologies, require rigorous and science-based verification protocols to ensure environmental integrity and prevent double counting. Unlike emission reductions, the SBCE will be among the first to pioneer carbon removals, with limited prior experience to draw from. It's essential to carefully evaluate the current scale and future potential of removals within the SBCE's defined scope.
- **Stakeholder consultations will be important before finalizing MRV regulations**. Engaging technical experts, industry representatives, and independent inspection bodies will help refine methodologies and ensure regulatory feasibility.

Building Block 12: Verification – Priority Activities

- **An independent verification system will be implemented to validate emissions reports. T**hird-party verification will be crucial to ensuring data integrity. In the early phases,

the Management Body must issue the rules for verification following international best practice.

- **Clear accreditation and oversight mechanisms will be put in place for verifiers.** The Management Body should oversee this process and coordinate with the accreditation bodies early in the process to build verification capacity. Strict eligibility criteria and ongoing performance assessments will ensure the credibility of accredited inspection bodies.
- **Quality control measures will be implemented to ensure data reliability.** Cross-checks, automated verification tools, and independent audits should be used to identify inconsistencies and prevent fraudulent reporting.

Building Block 13: Supporting Documents for MRV – Priority Activities

- **Standardized templates and reporting formats will be developed for supporting the development of emissions reports.** Formats and digital platforms will facilitate reporting, improve data comparability, and reduce administrative burdens for regulated entities. The Management Body should map the required tools and evaluate existing reporting processes.
- **Guidance documents will assist regulated entities in meeting MRV requirements.** The Management Body should provide technical manuals, training materials, and sector-specific guidance to enhance reporting accuracy and compliance.

Building Block 14: Enforcement and Sanctions – Priority Activities

- **A clear framework will be established to ensure compliance with SBCE rules.** This framework should define the process for the approval of Monitoring Plan, review of verified reports, detection mechanisms, corrective actions, and penalties for noncompliance, ensuring a transparent and predictable regulatory environment.
- **A process will be set in place for detecting and addressing noncompliance.** The regulatory framework should include real-time monitoring, automated alerts for irregularities, and targeted audits of high-risk entities.
- **Identify other federal bodies that can support monitoring activities of regulated entities' compliance with SBCE rules**. Authorities such as the Brazilian Ministry of Environment and Climate Change or other relevant agencies could play a key role in ensuring effective enforcement through collaboration.
- **Sanctioning mechanisms will be transparent, proportional, and consistently applied.** Penalties for violations—including late allowance surrender, underreporting of emissions, and fraudulent reporting—must be clearly outlined and regularly reviewed to maintain deterrence.
- **A dispute resolution mechanism will be developed to handle compliance disputes.** A structured appeals process should be implemented to ensure due process for regulated entities while maintaining regulatory efficiency and legal certainty.

Figure 11 - SBCE compliance cycle and enforcement - Activities identified on the thematic area

SBCE compliance and enforcement			Timeline			
			Stage I	Stage II	Stage III	Stage IV
BB11. Monitoring and reporting	Compliance.Monitoring.1	Define emissions monitoring and reporting rules and methodologies				
	Compliance.Monitoring.2	Define monitoring and reporting rules and methodologies for removals				
	Compliance.Monitoring.3	Identify regulated entities				
BB12. Verification	Compliance.Verification.1	Define rules for verification				
	Compliance.Verification.2	Prepare for the accreditation of verifiers				
	Compliance.Verification.3	Oversee and manage verifier quality				
BB13. Supporting documents for MRV	Compliance.Documents.1	Develop templates for monitoring plans, emissions and removals reports and verification reports				
	Compliance.Documents.2	Develop guidance documents to support regulated entities and verifiers				
BB14. Enforcement and sanctions	Compliance.Enforcement.1	Issue regulation to govern the compliance cycle				
	Compliance.Enforcement.2	Establish a supervisory and sanctioning framework				
	Compliance.Enforcement.3	Create an administrative structure for sanctioning				
	Compliance.Enforcement.4	Determine which federal bodies will be involved in monitoring compliance with SBCE rules				
	Compliance.Enforcement.5	Define the procedure to estimate the gross revenue of companies or corporate groups subject to the sanctioning rules				

BB11. Monitoring and reporting

Compliance.Monitoring.1 - Define emissions monitoring and reporting rules and methodologies

Monitoring and reporting of emissions is the backbone of any carbon pricing instrument.[67] Preparing rules and methodologies for these will be an early focus of the SBCE implementation.

SBCE Law

The Law specifies that:

- Regulated entities must begin preparations for emissions reporting in Stage II of SBCE implementation (Art. 50). Mandatory reporting starts in Stage III for all regulated entities exceeding 10,000 tCO2e. This treshold may be revised upward by an act of the Management Body. The threshold for surrender obligations is iniotially set at 25,000 tCO2e (Art. 30).
- The obligations above apply only to activities for which there are consolidated measurement, reporting, and verification (MRV) methodologies, as defined by the SBCE Management Body (Art. 30, §2). Consequently, before entities can comply with their obligations, the SBCE Management Body will need to define the scope of the SBCE, decide the point of regulation for the sectors and activities, and then issue MRV methodologies for those activities.
- Each operator must submit a monitoring plan for each commitment period. This plan must comply with the rules, models, and deadlines established by the SBCE Management Body and requires prior approval (Art. 31)
- Operators are required to submit an annual greenhouse gas emissions and removals report, adhering to the approved monitoring plan and guidelines established by the SBCE Management Body (Art. 32)
- Reports must undergo verification by an accredited inspection body, ensuring data accuracy and compliance with regulations (Art. 32, Sole Paragraph).
- The validated data from these reports will be recorded in the SBCE Central Registry, with each operator maintaining an individual account for their emissions and removals data (Art. 33).

Policy considerations

Any decision related to monitoring and reporting of emissions will strongly depend on the exact SBCE scope and the entities covered. For example, covering indirect emissions from electricity and heat consumption under the SBCE would require the development of a dedicated monitoring methodology. Gradual extension of covered entities could complicate the definition of rules further. If the scope expansion is not clear from the beginning, i.e. as a planned phase-in, rules might need adjustment later, affecting processes for existing regulated entities. This is particularly difficult if the inclusion threshold is lowered. Smaller entities might benefit from a simplified approach to monitoring and reporting emissions, e.g. using default values if needed.

[67] MRV procedures in an ETS consist in measuring or calculating actual emission levels. It differs from MRV on carbon credit certification that is measuring additional mitigation efforts to be achieved by a project based on a specific methodology.

If the inclusion of smaller entities with different needs is not considered in the original regulation, an adjustment of the regulation when the inclusion threshold is lowered might become necessary. The inclusion of new sectors with completely different monitoring and reporting rules is in turn less problematic as this can be dealt with through a separate regulation for the new sector, without affecting existing regulation for other sectors.

Generating high-quality emissions data requires significant administrative efforts from both covered entities and regulators, with many jurisdictions also mandating third-party verification. To ease this burden while maintaining data quality, jurisdictions can streamline reporting and verification by aligning ETS requirements with existing accounting and reporting systems (also for non-CO_2 emissions). This might include existing regulation of related matters, like taxation of energy consumption. The Ministry of Science, Technology and Innovation (MCTI), for instance, releases reports of official GHG emissions factors for the type of fossil fuel used in Brazil.

One important initiative on emissions inventories is the *Sistema de Registro Nacional de Emissões* (SIRENE) operated by the MCTI. SIRENE is responsible for Brazil's emissions inventories that are submitted under the UNFCCC and the Paris Agreement. Since the second half of 2023, companies have been able to voluntarily submit their emissions inventories to the publicly available platform. Only verified inventories are accepted.[68] Monitoring and reporting under the SBCE should also benefit from the expertise developed under the *Programa Nacional de Relato de Gases de Efeito Estufa* (PNR-GEE) initiative for mandatory MRV led by the Ministry of Economy and the MMA.[69]

A partner in developing the rules could be the GHG Protocol, an initiative for accounting and reporting of emissions at organizational level by the World Resource Institute and the World Business Council for Sustainable Development. The initiative started a *Programa Brasileiro GHG Protocol* in 2008 that is run by Fundação Getulio Vargas (FGVces).[70] The program runs a voluntary emissions registry with currently more than 1,400 reports published by different types of organizations.[71] For 2022, 156 reports from manufacturing companies are publicly available.[72] Implementing monitoring and reporting or the SBCE should not present a major challenge for these companies. Other sources of guidance for defining the rules for monitoring and reporting can be regulations under existing ETSs as well as the IPCC Guidelines for National Greenhouse Gas Inventories. Similarly, the World Bank MRV Centre of Excellence provides resources for this activity.

Emissions monitoring and reporting for the SBCE should be aligned with other national and international initiatives. Ideally, collected data from the verified emissions reports should be an input to national inventories under the UNFCCC. Similarly, MRV rules can be designed in a way that make them compatible with the upcoming EU CBAM. Compatibility not only encompasses monitoring methodologies but also required evidence and timelines for reporting. This

[68] Ministry of Science, Technology and Innovation, 2023.
[69] GIZ, 2019.
[70] FGVces, 2024.
[71] FGV, 2024a.
[72] FGV, 2024b.

would enable producers of CBAM export goods to use their SBCE verified emissions reports for CBAM and relieve them from going through two separate emissions monitoring processes.

Depending on the policy decision on the SBCE scope, the regulatory framework for monitoring and reporting can include[73]:

- Technical implementation of the policy decision on the SBCE scope with a clear legal definition of the regulated entities and their boundaries.
- Methods for measuring emissions: emissions can be measured directly, or they can be calculated using fuel input and emissions factors. Allowed methods can vary across sectors depending on how accurate a simple calculation is in a specific process.
- If applicable, standards for the collection of activity data. This could include production output, fuel consumption, vehicle kilometres travelled, and information about industrial processes.
- Acceptance of the use of default emissions factors and, if accepted, which ones shall be applied to the activity data.
- Rules for the submission of monitoring plans, incl. if thresholds for submission are identical to the reporting thresholds.
- Timing and frequency for the collection and reporting of emissions data.

Deciding on the rules for monitoring and reporting involves a trade-off between high accuracy and low regulatory burden. A careful balance between the two objectives is desirable. Finding a good balance is also subject to time, i.e. accuracy might increase over time with the level of familiarity authorities and regulated entities possess regarding the new instrument. However, a lack of robustness and accuracy requirements in the early stages of monitoring and reporting can generate incentives for facilities to under- or overstate emissions, for instance, to influence the level of allocation of free allowances.[74]

Timeline considerations

The Law sets out that regulated entities will begin testing the monitoring and reporting over Stage II, before mandatory reporting begins in Stage III. This means that comprehensive rules and methodologies for monitoring and reporting will need to be in place by the end of Stage I. This indicates a challenging timeline given the complexity of the task and its dependence on the definition of the exact SBCE scope and its regulated entities subject to MRV. A clear idea of the regulated entities under the MRV system is the basis for the definition of rules for monitoring and reporting.

Responsible agency

As a central element of the SBCE implementation and as established by the Law, defining rules for monitoring and reporting should be led by the Management Body. Since work on this needs to start as soon as possible, the GTT/SBCE might start gathering inputs for this task.

[73] WRI, 2015
[74] PMR, ICAP, 2021, Box 7-5.

Table 14 - Policy choices and options Compliance.Monitoring.1

Activity	Policy Options	Jurisdiction	Experience
Compliance. MR.1: Define monitoring and reporting rules and methodologies	A1 Option A: Different levels of monitoring and reporting complexity	New Zealand[75]	• Default emissions factors are available and used for all sectors, with a provision for participants to apply to use a bespoke emissions factor. • Regulated entities can apply for individual emissions factors in some cases.
		EU ETS[76]	• Verification of emissions reports includes a list of necessary improvements of monitoring and reporting. • Improvements need to be implemented unless they are above an annual cost threshold of 4,000 € (or 1,000 € for emitters < 25,000 tCO_2).
	A1 Option B: Uniform version tiered monitoring and reporting rules	New Zealand	• Despite its broad coverage, under the ETS the same set of simplified requirements apply for all entities. • No threshold effects or incentive to fall below a fixed threshold occur.
		Türkiye[77]	• More rigorous reporting from larger emitters with more organizational capacity • The ETS, that is planned to start in 2026, builds on existing MRV requirements that have been in place for big emitters since 2015. • The ETS will follow a tiered approach for MRV. Only the upper tier of big emitters will be covered in the pilot phase. Firms with lower emissions from lower tiers can join voluntarily.

Compliance.Monitoring.2 - Define monitoring and reporting rules and methodologies for removals

The inclusion of removals is not a common feature of ETSs worldwide. Monitoring and reporting of removals need to be carefully prepared for the SBCE implementation.

SBCE Law

The Law specifies that:

- The SBCE Management Body is responsible for defining monitoring methodologies and the presentation of information related to emissions and removals (Art. 8, II). Additionally, emissions thresholds determine which entities are subject to emissions and removals reporting requirements (Art. 8, IV, Art.30)
- Regulated entities must submit verified reports on GHG removals in accordance with their approved monitoring plan (Art. 29, II and Art. 32)

[75] Leining and Kerr, 2018.
[76] European Commission, 2024c.
[77] ICAP, 2024c.

- GHG removals that exceed the surrender obligations of regulated emitters are not automatically converted into CRVEs. These removals must undergo a specific registration process within the SBCE (Art. 1, §5)
- The National Allocation Plan (NAP) must include measures to mitigate the risks of reversing removals and emissions leakage (Art. 21, §1, I)

Policy considerations

While the topic of removals is an important one in the Brazilian context, only a fraction of these fall under the regulation of the ETS. With agriculture excluded from compliance obligations (Art. 1 §2) and forestry listed as a sector that generates carbon credits (Art. 2, VIII), this will mainly be relevant for removals generated by an emitting installation or company. This may be the case, for example, for companies in the paper and pulp sector that own forestry assets, as well as in the case of an industrial installation with carbon capture and storage. The considerations on removals for such installations, however, would depend strongly on the definition of the monitoring and reporting boundary of the regulated entity. Such rules would have to clarify, for example, which forest assets can (or should) be included in the ETS, and under what conditions. This is important also to address the fact that regulated entities could have an incentive to "shift" the ownership of forests around, such that forests with net sinks are included in their monitoring boundary, and forests with net emissions be excluded, thus leading to carbon leakage. This is different from the case of the New Zealand ETS, where the forestry sector is covered by the ETS, with a right to receive allowances for removals generated, but with obligations to surrender allowances in case of reversals. A first step for this activity would be to identify regulated entities falling under the SBCE scope that currently apply removals. Depending on the final scope of the SBCE, it is possible that there are none which then makes the implementation of this activity less urgent.

The rules for monitoring and reporting of removals need to include methodologies for how removals are measured, alongside requirements for permanence liability in cases of intentional and unintentional reversals. An important consideration is determining an appropriate base year for the measurement of removals. For example, should changes in a forest base since 1990 be considered, in which case all sources and sinks resulting from land-use changes must be accounted for? Alternatively, if net removals are calculated from the passage of the Law, steps must be taken to avoid bias—both positive and negative sources should be included. Failure to do so may result in installations only reporting on forests that are net sinks, potentially allocating "emitting" forests to other facilities.

The pairing of emissions and removals within the text of the Law seems to imply that monitoring plans and reports would encompass both emissions and removals in a unified monitoring and reporting process, rather than through a separate process for each.

Where entities report both emissions and removals, regulation must clarify whether removals should be netted out from emissions within monitoring reports, or whether they should be treated separately, such as by issuing all removals as CRVEs. A hybrid approach is also

possible, where removals are netted against emissions until the point where removals exceed emissions, after which CRVEs may be issued for the excess.[78]

Furthermore, should the regulation allow entities to produce a net balance of removals and emissions within their reporting boundaries, it is then important to emphasize the relevance of (a) regulation that defines reporting boundaries to be clear, transparent, objective, and enforceable, with a consistent approach applied across all installations to ensure fairness and accountability; (b) provisions on permanence and liability in case of reversals and (c) considering the desired trajectory of gross emissions within the SBCE. The Management Body will need to assess whether the practice of netting removals and emissions by regulated entities aligns with desired long-term emissions reductions.

Timeline considerations

If the topic of removals is assessed as relevant given the initial scope of the SBCE, timelines for rules for monitoring and reporting are similar to the timelines for *Compliance.Monitoring.1 - Define emissions monitoring and reporting rules and methodologies* i.e. they will need to be in place by the end of Stage I, so that regulated entities can prepare for monitoring and reporting.

Responsible agency

The Management Body is responsible for this activity as established by the Art. 8 of the Law.

Compliance.Monitoring.3 - Identify regulated entities

One important step for the implementation of the SBCE is to identify regulated entities that fall under the legal definition provided by the regulation (see *Building Block 6 BB11. Monitoring and* reporting). A complete list is essential for a robust new instrument under which compliance is enforced and regulated entities cannot evade their obligations.

SBCE Law

The Law sets out that:

- The Management Body is responsible for defining the activities, installations, sources, and greenhouse gases to be regulated under the SBCE for each commitment period, (Art. 8 III)

Policy considerations

Based on the identification of covered activities, sources and installations in scope of the SBCE (see *Design.Scope.1 - Identify activities, sources and installations in scope of the SBCE*) the Management Body will need to identify the regulated entities under MRV obligations. This can happen bottom up by self-reporting of regulated entities or top down with the Management

[78] It is worth noting that Art. 1 par. 5, which indicates the issuance of CRVEs for removals, addresses only the situation where removals *exceed* emissions. Moreover, it is important to note that the use of CRVEs is subject to the quantitative limits and qualitative criteria (see Building Block 2.5), and that this would apply also to CRVEs that are generated by a regulated entity. This would provide for equal treatment across other sources of removals that supply the market through CRVEs.

Body reaching out to regulated entities.[79] To support a top-down identification of regulated entities, the Management Body can reach out to other authorities regulating emitters, e.g., authorities licensing industrial plants or authorities implementing energy taxes. For bottom-up identification, the regulator could make a simple online tool available that assists potentially regulated entities in checking whether their emissions could pass the thresholds for regulation. For emissions linked to fuel combustion, for instance, the tool could estimate emissions from the consumption levels of the different fuels. Other emission source categories, like industrial processes and product use, might require other tools to estimate emissions. Self-identification can be complemented by communication channels through which organizations can report others who they believe to be regulated entities.

If the first NAP is envisioned as a pilot Stage without banking of allowances, this would allow some leeway around the determination of the cap. This would allow for bottom-up identification, knowing that some minor emitters might not self-identify and would only be included at a later stage, once the capacities for top-down identification are in place.

Timeline considerations

The identification of potential regulated entities depends mainly on the concrete legal definition of the SBCE scope (see *Building Block 2 BB7. Scope and regulated* entities). The process would be ideally finished towards the end of Stage I and during Stage II to give regulated entities enough time to prepare for their monitoring and reporting obligations. All regulated entities need to be identified latest at the end of Stage II before mandatory reporting starts in Stage III. The identification of regulated entities will also feed in the stakeholder consultation process described in Design.Scope.1 - Identify activities, sources and installations in scope of the SBCE *Building Block 2 BB7. Scope and regulated* entities Activity 1.

Responsible agency

As the Management Body is responsible for *Compliance.Monitoring.1 - Define emissions monitoring and reporting rules and methodologies*, it is also the natural responsible for identifying regulated entities – with the support of other regulatory bodies, especially in the areas of taxes and industrial licensing.

[79] PMR, ICAP, 2021. P.155.

Summary Table 11 - Monitoring and reporting

Building Block 11: Monitoring and reporting					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Compliance.Monitoring.1: Define emissions monitoring and reporting rules and methodologies	• Technical report on existing rules for monitoring and reporting of emissions in Brazil • Set of rules for the SBCE defined	Management Body	Stage I	Option A: Different levels of monitoring and reporting complexity	• New Zealand • EU ETS
				Option B: Uniform version tiered monitoring and reporting rules	• New Zealand • Türkiye
Compliance.Monitoring.2: Define monitoring and reporting rules and methodologies for removals	• Technical report on options for monitoring and reporting of removals, based on national and international experiences • Set of rules for the SBCE defined	Management Body	Stage I	NA	NA
Compliance.Monitoring. 3: Consult with stakeholders and experts on rules for monitoring and reporting	• Stakeholder consultation strategy with objectives for different consultation fora • Different consultation fora organized • Input for monitoring and reporting rules obtained	Management Body	Stage I	NA	NA
Compliance. MR.4: Identify regulated entities	• Initial list of regulated entities based on tax or license information • Revised exhaustive list of potential regulated entities (both for MRV only and surrender obligation)	Management Body	Stage II	Option A: Top-down identification	NA
				Option B: Bottom-up identification	NA

BB12. Verification

Compliance.Verification.1 - Define rules for verification

Verifiers confirm the quality of emissions reports and report non-conformities, misstatements, and recommendations for improvement. Verification is a crucial element for the robustness of the SBCE as cap setting as well as demand for allowances depends on accurate emissions reports.

SBCE Law

The Law establishes that:

- Operators must submit annual reports on greenhouse gas emissions and removals to the SBCE Management Body, ensuring compliance with the approved monitoring plan and the rules, models, and deadlines established by the SBCE regulations (Art. 32)
- Emissions reports must undergo a conformity assessment process, conducted by an accredited inspection body (a verifier), to confirm data accuracy and compliance (Art. 32, Sole Paragraph)
- The Management Body is responsible for defining the requirements and procedures for verifying emissions from regulated sources (Art. 8, VI)

Policy considerations

Brazil has experience with conformity assessment processes, particularly in carbon credit verification and voluntary corporate reporting under SIRENE and the GHG Protocol. Setting the rules for verification can also build on existing work within the PNR-GEE. However, the Management Body must assess in which ways current verification and accreditation rules differ from SBCE monitoring and reporting rules, and policy objectives. The PMR Guide, "Designing Accreditation and Verification Systems" provides key findings from carbon pricing instruments around the world, this section briefly mentions some of the findings that may be useful in the context of setting the rules for verification in Brazil:[80]

1. **Third-party verification:** The SBCE Law mandates that accredited inspection bodies independently assess regulated entities' reports. The verification body takes responsibility for the conclusions and the decision to issue a verification report.
2. **International standards:** Verification procedures in ETSs commonly align with international standards like ISO 14065 81 while incorporating SBCE-specific requirements to maintain integrity and relevance. For example, the EU ETS requires compliance with ISO 14065 and ISO 14066, ensuring verifiers meet stringent competence and impartiality standards.
3. **Rules for verification under the SBCE:** Common regulatory definitions for verification include the methods, criteria, procedures and timelines for assessing emissions reports. Monitoring and reporting rules will have an impact on the verification process, as these rules determine the checks performed by the verifier and their timing. In addition, the

[80] PMR, 2019
[81] ISO, 2020.

approved monitoring plan will guide the verification activities. Regulation often includes the following elements:[82]

- Information an obligated party must submit to the verifier.
- Requirements for site visits, if applicable.
- Principles of sampling for data/control systems and site selection.
- Minimum content required in verification reports.
- Obligation to correct misstatements and noncompliance identified during verification.
- Follow-up requirements for unresolved issues in the verification report.
- Actions to take in case of a negative verification opinion.
- Adjustments to allocated verification time if the verifier determines more time is needed.

The rules for verification often prescribe the levels of assurance and margins of error, distinguishing between different types of covered entities and the stage of the system's rollout:

- **Administrative burden:**[83] Verification requirements differentiate between reporting-only entities and those with surrendering obligations. For reporting entities, simplified verification protocols could reduce compliance costs. For example, verifiers in the EU can waive site visits for certain installations with authority approval, and in California not all of the reporting entities are required to submit verified reports. In the case of New Zealand ETS, emissions reporting follows a self-certification system, supplemented by random audits to ensure compliance.[84]
- **Level of assurance:** The degree of confidence regulators require in reported data determines the verifier's depth of assessment. It should balance regulatory confidence with cost-effectiveness. Reasonable assurance is standard for most CPIs due to financial implications, while limited assurance suffices for general environmental reporting.
- **Materiality thresholds:** Defining materiality helps assess the significance of misstatements or noncompliance. Regulators often set mandatory thresholds and ensure verifiers consider qualitative factors to prevent oversight. Thresholds vary between covered entities, considering their circumstances. [85]

4. **Noncompliance handling:** Clear procedures must outline the process if a verifier identifies misstatements or non-compliance. As well as the covered entity's responsibilities, triggers for regulator involvement, and verification report contents in case of misstatements.
5. **Direct regulatory oversight:** Since the Management Body will be separate from the accreditation body that approves and oversees verifiers, greater control through regulation could ensure high-quality verification. The regulator can do this through various approaches, ranging from basic report checks to in-depth data reviews, on-site inspections,

[82] European Commission, 2022
[83] More on ETS simplification on ICAP, 2019
[84] Reporters formally certify the accuracy of their emissions reports and face strict penalties if a government audit reveals any falsification.
[85] This is, for instance, 5% for smaller or 2% for bigger installations or aviation operators in the EU ETS (European Commission, 2021).

and reverification. In most ETSs, public authorities carry out random checks. The chosen method depends on the required level of oversight established on the compliance cycle and the available resources, with IT systems playing a key role in streamlining the process.

6. **Responsibility for managing and paying verification.** Different choices can be made which are influenced by the extent to which the regulator wants to have direct control over the verifier and how the regulator wants to ensure impartiality of the verifier. This can follow different approaches, outlined in Table 12 below. The most common approach in emissions trading systems worldwide, places the responsibility on the regulated entities, where they both manage and cover the costs of verification. The second option involves the regulator taking on both roles, paying for and managing the verification process, as seen in the Chinese National ETS. A third hybrid option could see the regulator overseeing and managing the verification process but financing it through fees paid by the regulated entities. Each option carries implications for transparency, accountability, and cost distribution, and should be carefully evaluated in the context of the SBCE. In the early years, a selection and payment model may be chosen in which government agencies can exercise greater control. Over time, selection and payment can shift from the government to the obligated entity encouraging them to take more responsibility for the quality of their own data.

Timeline considerations

The regulatory framework for verification needs to be delivered together with the rules for monitoring and reporting, ideally at the end of Stage I and latest at the end of Stage II with preparation for reporting starting in Stage II and mandatory reporting in Stage III.In early SBCE stages, when reliable data may be lacking, baseline data verification should be a priority, as it would enhance cap-setting accuracy while recognizing initial uncertainties. . An alternative approach would be to phase in verification—and consequently accreditation—at a later stage. However, this introduces a risk of errors in reported emissions and removals.

Responsible agency

The Law assigns this activity to the Management Body. Other national authority experienced in this area can and should support this task.

Table 15 - Policy choices and options Compliance.Verification.1

Activity	Policy Options	Jurisdiction	Experience
Activity 1. Define rules for verification, incl. timelines and verification protocols	A1 Option A: Verifiers are hired and paid by the regulated entity	Most ETSs, e.g. EU ETS	• Verifiers are hired and paid by the regulated entity.
	A1 Option B: The regulator hires the verifiers	Chinese national ETS	• This increases costs for the public authorities but reduces the burden on regulated entities as well as margin for fraud.
	A1 Option C: The regulator hires the verifiers, paid for by fees from regulated entities.	• To combine both approaches, verifiers could be hired and managed by the regulators and paid by the regulated entities through a fee.	

Compliance.Verification.2 – Prepare for the accreditation of verifiers

Regulation and administrative processes need to be established to provide accreditation to verifiers.

SBCE Law

The Law establishes that:

- Emissions and removals reports submitted by operators must undergo a conformity assessment process conducted by an accredited inspection body (Art. 32, Sole Paragraph)

While verification bodies must be accredited, the Law does not specify detailed procedures for the accreditation process. The SBCE Management Body is tasked with defining requirements and procedures for verification but does not explicitly outline the criteria for accreditation within the text of the Law (Art. 8, VI)Policy considerations

The Management Body can define criteria – perhaps in cooperation with the national accreditation entity INMETRO – for inspection bodies to obtain accreditation, either as part of the MRVA regulation or separately. Below are some of the key aspects to consider in the regulation:

1. **Verifier competence:** Regulators typically define competence requirements for accredited verifiers, ensuring that sector-specific expertise is considered. Since different industries have distinct technical needs, verifiers must meet sectoral-specific competence criteria. Under international standards, verifiers are expected to establish a continuous competence process, which includes specific criteria for personnel qualifications and internal training. If the Management Body does not directly monitor verifier performance, the regulation should ensure that the accreditation body evaluates whether verifiers and their personnel meet defined competence criteria. This assessment may be conducted through document review, examinations, or interviews.
   When defining verification competence standards, it is advisable to reference international best practices, such as ISO 14066, and adapt them to the SBCE context. Additionally, ETS-specific requirements are necessary to ensure verifiers are familiar with the monitoring and reporting methodologies and rules.

2. **Organisational and procedural requirements**: Verifiers are often required to establish formal management processes and organisational arrangements to ensure effective control of the verification process and mitigate risks. With international standards, like ISO 14065 some organizational and procedural requirements are already prescribed,

3. **Verifier independence:** Maintaining the independence of verifiers is critical to ensure the credibility of emissions reporting under the SBCE. If international standards, such as ISO 14065 accreditation is used, their general impartiality requirements could automatically apply, but additional SBCE-specific safeguards may be necessary. Verifiers must demonstrate their independence through a system of checks designed to prevent corruption or undue influence, ensuring that verification services cannot be bought or compromised. This framework can build upon existing accreditation standards from INMETRO and the GHG Protocol, though a careful review may be needed to assess whether their stringency aligns with SBCE requirements.

In addition to reviewing that the applicable standards satisfy the criteria for verifiers; the Management Body will need to provide conditions to ensure sufficient verifiers before the beginning of Stage II. The number of accredited verifiers needed at this stage will depend on the number of obligated entities, both for reporting and for compliance obligations, but also on the characteristics of the covered sectors and the frequency of verification, as established on the regulation. To this effect, the following considerations are suggested:

- The process for accreditation needs to be determined with the National Accreditation Body, and the process should ensure that the verifier is accredited by the time the first verification report needs to be issued on Stage III, the verifier should be able to submit the request for accreditation and assessment sufficiently early to enable the National Accreditation Body to complete the whole process in time
- SBCE specific requirements need to be defined because international standards are regulation neutral
- Specific training and rules will be needed to instruct accreditation bodies on CPI specific elements and to set up trainings for the accredited verifiers.

There is expertise on emissions verification and accreditation of verifiers both in Brazil and internationally, there is an option for the Management Body to delegate its tasks in this matter to a large degree to other authorities. Accreditation could be attributed to another suitable authority in Brazil (e.g., INMETRO). The SBCE could also accept accreditations from verifiers under other carbon pricing instruments. Note that, while verifiers can and should be the same, the process of accreditation of verifiers under the EU CBAM will be separate from accreditation under the SBCE as CBAM verifiers will need to comply with EU regulation.

Timeline considerations

The process of accreditation of verifiers adds another layer of complexity to the tight timeline for the implementation of MRV for the SBCE. Accreditation needs to happen before emissions and removals reports can be verified. Given that report preparation begins in Stage II, with mandatory reporting in Stage III, the ideal timeframe for initiating accreditation is at the end of Stage I, and no later than the conclusion of Stage II.

Responsible agency

Given that the Management Body is responsible for the procedures regarding verification (Art. 8 of the Law), it is the natural starting point for leading the accreditation of verifiers.

Compliance.Verification.3 – Oversee and manage verifier quality

Once verifiers are accredited, continuous monitoring and supervision processes are important. The Management Body can participate in this oversight to different extents.

SBCE Law

The Law establishes that:

- Emissions and removals reports submitted by operators must undergo a conformity assessment process conducted by an accredited inspection body (Art. 32, Sole Paragraph)

Policy considerations

Typically, the same entity responsible for accrediting verifiers oversee their performance to ensure continuity of their competences and maintain oversight. This approach allows the Accreditation body to gather necessary evidence to determine whether a verifier's accreditation remains valid. Nonetheless, the ETS regulator can be involved.[86]

Under international standards, certain supervision aspects are already defined in guidelines. These include verifying the implementation of verifier procedures, processes, and records at their premises, as well as supervising individual auditors in action. Through the supervision, the Accreditation Body evaluates evidence and information on the verifier's performance. This supervision could be also triggered by various factors, such as complaints against a verifier, appeals of a verifier's conclusions, significant organizational changes, follow-up on corrective actions, or negative information received from the public. If noncompliance with requirements is identified, the verifier must correct these issues before they can be closed. The specific approach depends on the applicable framework, but in general, if noncompliance is not resolved, the Accreditation body conducts further investigations and follows up on outstanding issues, which may lead to additional scrutiny or sanctions.

Regulation should mandate the Accreditation Body to document all supervisory actions taken, evidence collected, and findings recorded, and provide the information to the Management Body if requested. Extending the verification process to the Management Body could also be considered.

A key component of the supervision system is the authority of the Accreditation Body to impose sanctions on verifiers that fail to comply with applicable rules. These sanctions can include:

- **Suspension:** The verifier retains approval but is temporarily restricted from conducting verification activities in full or for specific scopes. Once the suspension period ends, verification activities may resume.
- **Withdrawal of certificate or registration**: The verifier loses approval entirely, effectively revoking its ability to conduct verification activities.
- **Scope reduction**: The verifier loses approval for specific sectors while maintaining authorization for other approved scopes.
- **Fines**: Financial penalties may be imposed for noncompliance.
- **SBCE-specific sanctions**: It is not clear that the SBCE Law provides sanctions for verifiers, as it does not establish a specific obligation for them. This aspect would need to be revised by a legal team.
- **Regulatory sanctions and criminal prosecution**: In cases of serious fraud, additional penalties such as imprisonment, blacklisting, or other regulatory actions may apply.

Typically, national legislation governs the establishment of sanctions for auditors, ensuring enforceability and legal certainty.

Timeline considerations

The process of supervision and review of the performance of verifiers will be performed by the Accreditation Body and the Management Body in line with the regulation and the international standards chosen for the verification process. In that sense, the review of verifiers performance will begin as soon as they are accredited on Stage II.

[86] PMR, 2019

Responsible agency

Given that the Accreditation Body is responsible for the procedures regarding evaluation accreditation (Art. 32 of the Law), it should be the responsible agency in charge of overseeing their performance. The role of the Management Body will largely be determined through the secondary regulation.

Summary Table 12 - Verification

Building Block 12: Verification					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Compliance.Verification.1 - Define rules for verification	• Technical report on existing rules and initiatives for verification in Brazil • Set of rules for the SBCE defined	Management Body	Stage I	Option A: Verifiers are hired and paid by the regulated entity	• Most ETSs, e.g. EU ETS
				Option B: The regulator hires the verifiers	• Chinese national ETS
				Option C: The regulator hires the verifiers, paid for by fees from regulated entities.	• NA
Compliance.Verification.2 - Prepare for the accreditation of verifiers	• Technical report on existing standards and processes for inspection body accreditation • Criteria for verifiers • Process for accreditation in place • Successful accreditation of verifiers	Management Body	Stage I	NA	NA
Compliance.Verification.3 -Oversee and manage verifier quality	• Processes for continuous oversight and quality assurance in place	Accreditation Body	Stage II	NA	NA
Compliance.Verification.4 - Consult with stakeholders and experts on rules for verification and accreditation	• Consultations with verification stakeholders and experts in Brazil and internationally • Input for verification and accreditation rules obtained	Management Body	Stage II	NA	NA

BB13. Supporting documents for MRV

Compliance.Documents.1 - Develop templates for monitoring plans, emissions and removals reports and verification reports

SBCE Law

The Law establishes that:

- The Management Body is responsible for defining monitoring methodologies and the presentation of emissions and removals data (Art. 8, II) Additionally, emission thresholds determine which entities must report their emissions and removals (Art. 8, IV).
- Regulated entities must submit verified greenhouse gas removals reports in accordance with their approved monitoring plan (Art. 29, II & Art. 32)
- The National Allocation Plan (NAP) must include measures to prevent the risk of reversing removals and emissions leakage, ensuring environmental integrity within the SBCE (Art. 21, §1, I)

Policy considerations

Standardizing emissions reporting is widely recognized as good practice and is implemented across all existing ETSs to varying degrees. Whether through paper forms or electronic templates, standardized formats help ensure consistency in data over time and across reporting personnel. This approach reduces errors and omissions, streamlines verification and processing, and supports institutional learning, as both operators and regulators become more familiar with procedures through repetition. Establishing such systems requires an initial administrative investment, but the long-term benefits in efficiency and reliability are substantial.[87]

To further support accurate reporting, regulators commonly help through guidance documents, help desks, and capacity-building initiatives. Québec's ETS, for example, uses standardized protocols from the Western Climate Initiative (WCI) for key emissions sources, with reporting carried out via secure electronic templates. These tools promote data completeness and unit accuracy, though emitters remain responsible for calculating their emissions. The Québec ministry complements this system with online support materials and direct assistance from its reporting team, illustrating how standardized systems can be paired with robust guidance to maintain reporting quality.[88]

The SBCE can seek to reduce the burden on regulated entities and improve efficiency by providing templates or models, for example for monitoring plans and emissions reports, where data requirements are specified and structured. While this means additional resources to prepare templates at a stage of high general workload for preparing the SBCE implementation, it will reduce the burden for the Management Body and other involved authorities in the operational Stage as it simplifies the review process. The more complex the rules for MRV, the greater the benefit for regulated entities and authorities from having standardized templates. The

[87] ICAP, 2019
[88] ICAP, 2019

comparability of submitted monitoring plans, emissions reports and verification reports will also reduce the incentives for misconduct of regulated entities.

An alternative or complementary step to templates is automation through an online reporting system. In this scenario, regulated entities would input activity data and other relevant information, while quantification processes would be automated. A well-designed digital system can further enhance regulatory oversight by enabling automated checks, managing workflows for applications and approvals, and providing a centralized, up-to-date database for policy evaluation and enforcement. In emissions trading systems, IT plays a critical role in compliance, as account restrictions can serve as an effective enforcement tool. Additionally, IT systems act as the public interface for obligated entities, market intermediaries, and the general public, requiring robust cybersecurity measures to protect market-sensitive information and prevent cyber threats. While IT development can be costly and time-consuming it becomes an essential component as regulatory frameworks evolve, ensuring adaptability to future amendments and increased complexity.[89]Examples of IT systems being used for ETSs include:

- Canada's Single Window Information Manager (SWIM) system[90]
- Germany's Form Management System[91]
- Europe's ETS Reporting Tool MRV (ERT).[92]

Timeline considerations

Templates would ideally be made available towards the end of Stage I to allow regulated entities and verifiers to prepare their MRV processes based on the templates. It is highly recommended that they are provided before mandatory reporting starts in Stage III.

Responsible agency

Each template needs to accurately present the legal requirements for emissions reporting, verification and monitoring plans. In consequence, this activity needs to be implemented by the Management Body. Stakeholders and experts can support the development of templates by testing their functionalities and giving feedback on clearness and usability.

[89] World Bank, 2020
[90] Government of Canada, 2023
[91] DEHSt, 2021
[92] European Commission, 2025

Table 16 - Policy choices and options Compliance.Documents.1

Activity	Policy Options	Jurisdiction	Experience
Compliance. Documents.1. Develop templates for monitoring plans and emissions reports	Option A: Online platform provided by ETS administrator	• California[93]	• The template for emissions reporting is provided directly through a platform, e.g. as online tool, the Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT).
		• Canada	• Integrates information and data collected through federal and provincial programs into one streamlined system
		• Europe	• The ETS reporting tool MRV (ERT) is a web-based platform that streamlines the submission of monitoring plans, emission reports, verification reports, and improvement reports related to EU ETS compliance. It provides advanced tools for efficient and reliable MRV procedures across covered sectors.
	Option B: Standardized templates for reporting	• European Union[94], • Tokyo	• Emissions reports use an Excel template.

Compliance. Documents.2 - Develop guidance documents to support regulated entities and verifiers

Regulation of MRV of emissions and removals should be accompanied by guidance documents for regulated entities and verifiers. Guidance documents are not legally binding but help interpreting and implementing the definitions and processes imposed by the regulation.

Policy considerations

There are different types of guidance documents and levels of technical complexity that are tailored to different audiences within the regulated entities and verifiers. Accurate monitoring, reporting and verification of emissions and removals is a complex and technical process that might differ for different types of entities. Hence, each sector should have individual guidelines. Guidelines for regulated entities need to be aligned in content with guidance documents for verifiers.

The following list presents selected guidance documents available under the EU ETS[95] to illustrate the range of topics and levels of technical complexity:

[93] CARB, 2024.
[94] European Commission, 2023
[95] See European Commission, 2024b, for a complete list.

- Quick guide for stationary installations
- Quick guide for aircraft operators
- Quick guide on verification for operators and aircraft operators
- General guidance for installations
- Guidance on uncertainty assessment
- Guidance document on biomass issues
- Key guidance note on site visits
- User manual for the annual emissions report template

The selection of guidance documents needed for the implementation of the SBCE can benefit from inputs from consultations from the regulated entities. Stakeholders can also serve as reviewers for these documents.

Timeline considerations

Guidance documents would ideally be made available towards the end of Stage I to give regulated entities and verifiers enough time to understand and prepare their MRV processes. It is highly recommended that they are provided before mandatory reporting starts in Stage III. On specific topics on which the need for guidance is only identified at a later stage, documents can be provided over time.

Responsible agency

The Management Body is the natural responsible for preparing guidance documents. However, a scenario is possible in which another agency or an external contractor prepares the guidance documents under the supervision of the Management Body.

Summary Table 13 - Supporting documents

Building Block 13: Supporting documents for MRV					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Compliance.documents.1 - Develop templates for monitoring plans, emissions and removals reports and verification reports	• Template for monitoring plan • Template for emissions and removals report • Template for verification report	Management Body	Stage I	A1 Option A: Type of template: online template	• California • European Union • Germany • Canada
				A1 Option B: Type of template: Excel template	• EU ETS

Building Block 13: Supporting documents for MRV					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Compliance.documents.2 - documents to support regulated entities and verifiers	• List of guidance documents to develop incl. target audience • Developed guidance documents	Management Body	Stage I	NA	NA

BB14. Enforcement and sanctions

In light of the Law, below are the main initiatives to be undertaken for the implementation of enforcement and sanction measures under the SBCE.

Compliance.Enforcement.1 – Issue regulation to govern the compliance cycle

This activity ensures that the SBCE compliance cycle is effectively enforced through clear procedures, timelines, and governance functions. A robust enforcement system is essential to maintaining environmental integrity and ensuring that regulated entities adhere to their obligations under the SBCE. Effective enforcement requires a combination of preventive measures, regulatory monitoring, and corrective actions to uphold compliance and ensure market confidence.

SBCE Law

The Law sets out that:

- The SBCE Management Body serves as the executive authority of the system, with normative, regulatory, executive, sanctioning, and appeals powers (Art. 8). It is responsible for regulating the SBCE asset market, ensuring compliance with the CIM guidelines, and enforcing penalties for non-compliance.
- SBCE-regulated operators must obtain prior approval for their monitoring plan from the Management Body before the start of a commitment period (Art. 31). This plan forms the basis for all MRV activities.
- Each year, operators must monitor emissions, compile an emissions report, and submit it for conformity assessment by an accredited inspection body (Art. 32). Operators exceeding the emissions threshold must surrender SBCE assets in an amount equivalent to their

annual emissions and submit a yearly reconciliation report detailing their compliance obligations (Art. 30)

Policy considerations

Taken together, the procedural steps and obligations that the operators must follow each compliance period are commonly described as the 'compliance cycle' of an ETS. Clear rules must be established through the compliance cycle to ensure accountability, transparency, and efficiency. These rules cover procedural requirements for reporting obligations, regulatory supervision, and mechanisms for addressing noncompliance at the different stages of the cycle:

1. **Pre-cycle compliance:** Operators must submit monitoring plans for approval before the commitment period begins. The government is responsible for receiving these plans, assessing their conformity with MRV regulations, and issuing one of the following decisions:

- Approval – Granted when the plan fully complies with regulations.
- Conditional approval – Issued if corrections are needed to address non-compliance.
- Rejection – If the plan does not meet requirements, prompting resubmission.

The Management Body must establish a clear regulatory framework for the reception and evaluation of monitoring plans, including timelines, administrative functions, procedures and criteria for additional requests of information during the evaluation. The rules should also consider the decision-making process for granting approval, conditional approval, or rejection. This administrative process must comply with legislation on administrative procedures. However, timelines for submission, evaluation, and response will also depend on both the authority's internal capacity and the regulated entities' compliance deadlines within the MRV cycle below.

2. **Annual MRV compliance cycle**: Each year, regulated entities must monitor their emissions and prepare an emissions report. This report is then submitted to an external, accredited inspection body for a conformity assessment. To ensure timely identification of potential non-compliance, verification should occur early enough to address any inconsistencies before submission of the Report to the Management Body.

Once received, the Management Body processes the verified reports in several ways, including:

- **Updating the Central Registry:** Emissions data is recorded in each regulated entity's unique account.
- **Overseeing compliance:** Reports may also trigger regulatory actions in response to nonconformities, including inspections or requests for additional information to ensure adherence to the MRV framework.
- **Estimate the distribution of CBEs**: Based on what it is established in the NAP for the commitment period, the Management Body will determine the number of CBEs to be distributed to the specific entity in respect to their reported emissions.
- **Determining reconciliation of obligations**: Using the reported data, the Management Body calculates each entity's required reconciliation of emissions with SBCE units,

initiating a dedicated administrative process, described below. This process culminates in the evaluation of the reconciliation report at a designated point in the compliance calendar.

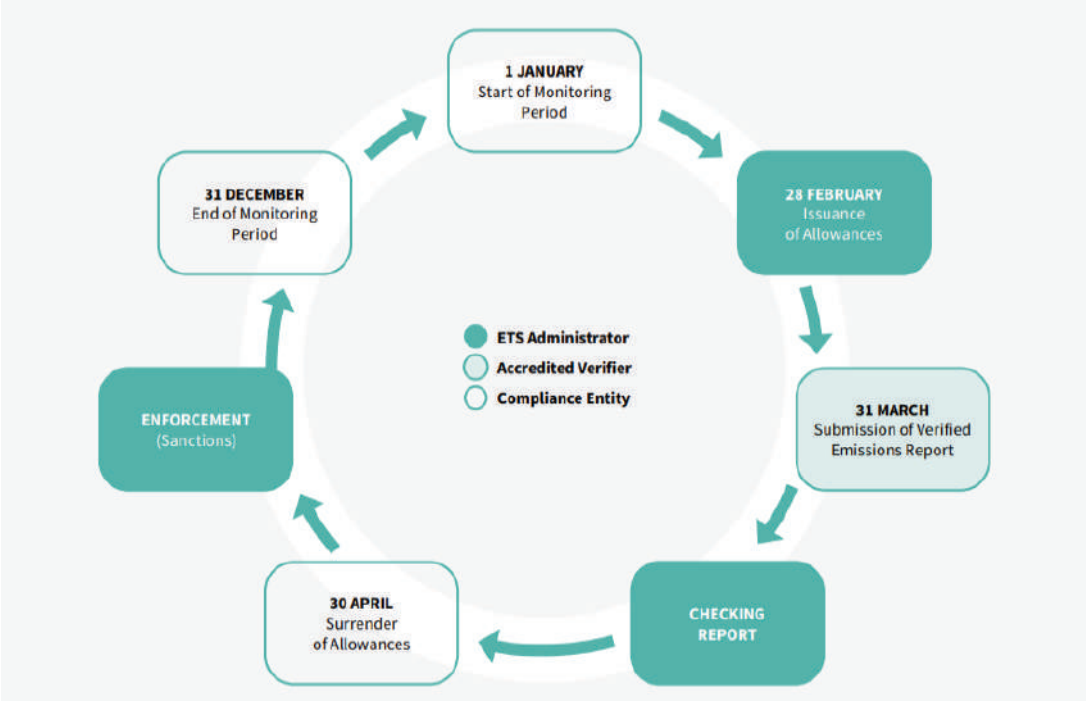
- Emissions reports enable the Management Body to oversee the overall functioning of the SBCE and support the continuous improvement of the system.

The Management Body must develop a clear regulatory framework outlining each step of the compliance cycle, including defined timelines, procedures, and enforcement actions. The regulation should also specify the possible measures the Management Body may take in cases of non-conformity, requests for additional information, and the processes for correcting inconsistencies.

3. **Reconciliation of obligations cycle**: At a designated point in the compliance period, covered entities must surrender SBCE assets equivalent to their annual emissions. Each year, they are required to submit a reconciliation report detailing their compliance with this obligation.

The Management Body must establish regulations defining each step of the reconciliation process, including timelines, deadlines for submission, timeline for review and request for additional information, faculties for supervising compliance and enforcement action to address non-compliance, including corrective actions and potential penalties. The Figure 13 below describes the MRV compliance cycle as it is applied in the EU ETS. [96]

Figure 12: The Compliance Cycle in the EU ETS



Source: PMR, ICAP, "Governance of Emissions Trading Systems". World Bank, Washington, DC. © World Bank, 2022.

[96] PMR, ICAP, 2022

Timeline considerations

It is recommended to preferably establish the regulation on enforcement of the compliance cycle during Stage I (Implementing Regulation). Clear description of the obligations throughout the compliance cycle and the administrative processes, including timelines, evaluation and regulatory functions for evaluation and enforcement should be contained in the SBCE Guidelines, the regulation of the normative and regulatory functions of the Management Body, and be consistent with the MRV regulation.

Responsible agency

The Management Body will be responsible for the issuance of the SBCE guidelines and other regulatory acts on enforcement and sanctions under the SBCE

Compliance.Enforcement.2 - Establish a supervisory and sanctioning framework

A regulatory act issued by the Management Body shall provide a description of administrative supervision, infractions and their respective penalties, rules of procedure for the sanctioning process, rules for the application of penalties, among other provisions.

SBCE Law

The Law sets out that:

- The description of infractions, corresponding penalties, and the sanctioning process are regulated by the Management Body (Art. 35)
- The law also establishes the types of penalties and sets limits on fines for both legal entities and individuals (Art. 37). Furthermore, it details criteria for determining recidivism and other considerations sanctioning authorities must consider when applying penalties (Art. 38)
- Unlike some carbon markets, the SBCE does not impose make-good provisions requiring regulated entities to submit allowances for each tCO2e emitted beyond their allocated limit.
- For trading in financial and capital markets, penalties under financial market legislation apply to SBCE asset issuance and trading. In such cases, only the Securities and Exchange Commission (CVM) has the authority to assess and enforce penalties (Art. 38, §4)

Policy considerations

To establish an effective enforcement system, the SBCE Management Body must have the necessary legal authority, autonomy, and competencies to identify non-compliance, define infractions and impose sanctions on regulated entities. This ensures the regulatory act can be properly enacted and enforced.
Other jurisdictions typically combine punitive measures—such as fines, surrendering additional allowances, or financial penalties—with corrective mechanisms like "make-good" provisions. These require noncompliant entities to rectify their violations, ensuring that any environmental imbalance is addressed. The SBCE could adopt a tiered penalty structure, proportionate to the severity and frequency of violations, in accordance with the provisions of the Law. Common enforcement mechanisms that could be considered include:

- **Public disclosure** ("Naming and Shaming"): Publicly listing noncompliant entities as a deterrent. This approach has proven effective in the EU ETS, encouraging firms to meet their obligations.
- **Fines**: Monetary penalties exceeding the financial benefits of noncompliance. California's ETS, for example, links fines to the market price of allowances, reinforcing compliance incentives.
- **Make-good provisions:** Obligating entities to rectify shortfalls within a defined timeframe, often by purchasing allowances. South Korea and New Zealand's ETSs impose strict deadlines, sometimes with additional surcharges.
- **Operational restrictions**: Persistent or severe noncompliance may lead to trading suspensions, permit revocations, or other regulatory sanctions. China's ETS pilots link compliance performance to regulatory approvals, strengthening accountability.
- **Verifier accountability**: Fraudulent or misleading verification reports can result in sanctions against verifiers to ensure the accuracy of compliance data. Many ETSs penalize verifiers who submit inaccurate emissions reports.
- **Graduated penalties:** Differentiating between administrative violations, minor infractions, and serious noncompliance allows for proportionate enforcement. In extreme cases, severe breaches could lead to criminal prosecution, as seen in New Zealand's enforcement framework.

While the SBCE Law already includes several of these provisions, the regulation should further clarify the battery of sanctioning responses with sufficient clarity as to incentivize compliance but with enough flexibility to allow for correcting behaviour. International experience highlights the importance of combining compliance facilitation with strict enforcement. For an overview of enforcement models from different jurisdictions, please refer to the Policy Options Table below.

Timeline considerations

It is recommended to preferably establish the regulation on supervision and sanctions during Stage I of the SBCE implementation (Implementing Regulation). If not possible, the regulatory act may be issued during Stage II, when the regulated entities are supposed to be taking the necessary measures for the operationalization of the instruments for emissions reporting. In theory, there will be no mandatory measures in this stage as the reporting obligation will be applied only in Stage III.

Responsible agency

As determined in Art. 35 of the Law, the Management Body will be responsible for the issuance of the regulatory act on enforcement and sanctions under the SBCE. Table 17 Policy choices and options Compliance.Enforcement.2

Activity	Policy Options	Jurisdiction	Description
Compliance. Enforcement.2 Issue a regulatory act for sanctions	**Option A**: Make good provisions [97]	**Québec**	• Requires that allowances equivalent to three times the number of excess emissions must be surrendered.[98]
		California	• Establishes that entities failing to surrender sufficient allowances must provide the missing allowances plus three additional ones per deficit, among other possible penalties.
	Option B: Define a mix of fixed multipliers and fixed penalties[99]	**China National ETS**	• Establishes both fixed fines ranging from CNY 50,000 to 200,000 (USD 7,058 to 28,232) for reporting failures, and a fixed multiplier ranging from five to ten times the market value of missing allowances for compliance failures, besides other possibles penalties.
		Korea	• Establishes a cap for all penalties for noncompliance at either three times the market price of allowances *or* KRW 100,000 (USD 76.58) per tonne.
		Austria	• Establishes an increased certificate price for each tonne of CO_2e for which no allowance has been surrendered, set at two times the fixed price (during the period of fixed allowances prices), in addition to a financial penalty.
		New Zealand	• Provides a cash penalty of three times the current market price for each unit not surrendered. In addition, entities can be fined on fixed values when failing to comply with data obligations and other required information (up to NZD 24,000), as well as in case of conviction for knowingly altering, falsifying, or providing incomplete or misleading information about any obligations under the scheme (up to NZD 50,000).
	A1 Option C: Define fixed penalties	**Shanghai Pilot**	• Penalties for failing to submit an emission or verification report on time, or for providing fraudulent information, range from CNY 10,000 (USD 1,411) to CNY 50,000 (USD 7,058). In cases of non-compliance with the emissions cap, fines can range from CNY 50,000 (USD 7,058) to CNY 100,000 (USD 14,116), in addition to the obligation to surrender the required number of missing allowances. • The system also imposes other sanctions, such as recording the company's non-compliance in a credit record, adding the company to a publicly available online list, and loss of access to funds for energy conservation and emissions reduction measures.[100]

[97] ICAP, 2024a. P. 86.
[98] Ibid. P.128.
[99] Ibid. P. 169.
[100] Ibid. ICAP, 2024a. p. 221.

Compliance.Enforcement.3 - Create an administrative structure for sanctioning

Once the rules for enforcement and sanctioning are adopted, an administrative structure for sanctioning, encompassing the investigation of infractions, the application of penalties, and a robust process for administrative adjudication including judgments of appeals, needs to be put in place.

SBCE Law

- Article 35 of the Law guarantees a double degree of appeal in sanctioning procedures. The SBCE Management Body is tasked with ascertaining infractions and applying sanctions in the first instance, and the resolution from the interposition of resources of appeals against the decisions of the management body. If the authority does not reconsider its decision, it shall forward the appeal to a higher authority within the Management Body. (Art. 35, caput and Art. 43 §6).

The process must respect the principles of full defence and adversarial proceedings, as provided by Article 35 and Article 56 of Federal Law No. 9.784/1999 (Administrative Procedure Law), which are explicitly referenced in the SBCE Law.

Policy considerations

The Law does not provide details on how the SCBE sanctioning structure should be, including its departments, staff, etc. In this regard, there are some structures commonly applied by other ETS schemes, varying between the creation of a new ETS-specific compliance body, as in the German system, and the allocation of new functions to existing bodies, as in the Mexican system that is currently on its pilot phase.
To avoid conflicts of interest and maintain institutional integrity, the sanctioning function could be clearly separated from other roles within the Management Body, especially those responsible for regulation, methodology accreditation, or operator support.
The two-tiered administrative appeal process will be operationalized within the Management Body, in accordance with Article 8, item XXIII of PL 182/2024 and Article 56 of Law No. 9.784/1999. To ensure legal certainty, institutional credibility, and timely enforcement, a clear procedure could include:

- Reception of appeals (including deadlines, formats, admissibility criteria, and submission channels);
- Review and judgement of appeals at the first instance by a unit within the Management Body that is distinct from the one that imposed the original sanction.
- Escalating appeals to a superior authority within the Management Body, in line with the requirement for a double degree of administrative jurisdiction. This superior authority must be defined in internal regulations.

Timeline considerations

Since the administrative structure for sanctioning shall be implemented within both the Management Body and the Interministerial Committee on Climate Change, it should be created at the moment of implementation of these bodies, ideally during Stage I.
Responsible agency

The same agencies that will be responsible for the creation of the Management Body and the Interministerial Committee on Climate Change will also lead the establishment of the sanctioning system - in the present case, the Interministerial Council on Climate Change and the ministry that will be appointed to implement the Management Body.

Table 18 - Policy choices and options Compliance.Enforcement.3

Activity	Policy Options	Jurisdiction	Experience
Compliance. Enforcement.3. Create an administrative structure for sanctioning	**A2 Option A**: Allocation of new functions to existing bodies	**Mexico**	In Mexico, the Office of the Federal Prosecutor for Environmental Protection (PROFEPA), which serves as the enforcement arm of the Ministry of the Environment, carries out inspections, prosecute non-compliance, apply sanctions, enforce environmental laws and regulations, sanction firms and entities (and individuals) under the General Law on Climate Change, and will oversee compliance with ETS obligations
	A2 Option B: New ETS specific compliance body	**Germany**	The German Emissions Trading Authority (DEHSt, in German) is the body responsible not only for the allocation of emission allowances and the management of their auctioning, but also for monitoring the annual reporting and the surrender of allowances, sanctioning the parties that fail to meet their obligations in the German ETS through fines, freezing accounts in the national emissions trading registry, among other possible sanctions.[101] The mentioned body is part of the German Environment Agency.[102].

Compliance.Enforcement.4 - Determine which federal bodies will be involved in monitoring compliance with SBCE rules

Determine which federal bodies, in addition to the Management Body and the Interministerial Committee on Climate Change, will be involved in monitoring compliance with SBCE rules.

SBCE Law

- According to the Law, the federal agencies competent to monitor and enforce the rules of the SBCE will be subject to the law and its further regulation (Art. 39).

[101] Deutsche Emissionshandelsstelle, 2024
[102] ICAP, 2024a, p. 49.

Policy considerations

The indication of the federal bodies to be involved with compliance monitoring consists in a political-driven decision, and the choosing of the agency should be guided by the expertise necessary for the exercise of the monitoring functions.

It is possible to identify a miscellaneous of government bodies involved in ETS enforcement in other jurisdictions. It seems that most of them attribute certain or total powers to the equivalent of the Brazilian Ministry of Environment and Climate Change (MMA), as Germany does. Another option is to attribute certain enforcement powers to other government bodies related to compliance and/or verification processes, such as the PROFEPA as Mexico is planning to do.

Timeline considerations

It is recommended that the decision is made simultaneously with the structuring and creation of the sanctioning system, ideally during Stage I. This way, the monitoring, sanctioning, and enforcement functions can be distributed most effectively among the involved public agencies.

Responsible agency

The delegation of additional functions to existing federal bodies is within the powers of the ministry under which the intended public agency is located. For instance, the delegation of monitoring tasks to the Brazilian Institute of Environment and Renewable Resources (IBAMA) should be exercised by the Ministry of the Environment and Climate Change (MMA), to which IBAMA is subject. Therefore, in the case of monitoring compliance with the SBCE rules, the nomination of the responsible federal body will depend on the political decision involving the Federal Executive Power.

Table 19 - Policy choices and options Compliance.Enforcement.4

Activity	Policy Options	Jurisdiction	Description
Compliance.Enforcement.4: Determine which federal bodies will be involved in monitoring compliance with SBCE rules	**Option A:** Attribute certain or total enforcement powers to the equivalent of the Brazilian Ministry of Environment and Climate Change.	**Germany**	• The German Emissions Trading Authority (Deutsche Emissionshandelsstelle, or DEHSt), established as a division of the German Environment Agency (Umweltbundesamt, or UBA), concentrates matters such as allowance allocation decisions, emissions reporting, and sanctioning.
	Option B: Attribute certain enforcement powers to other government bodies related to compliance and/or verification processes	**Mexico**	• Art. 111 of the Mexican General Climate Change Law attributes to the Federal Environment Protection Attorney of the Secretary of Environment the functions of inspection and surveillance of the regulated companies.

Compliance.Enforcement.5 - Define the procedure to estimate the gross revenue of companies or corporate groups subject to the sanctioning rules

To measure applicable fines, it is necessary to define the procedure to estimate the gross revenue of companies or corporate groups subject to the sanctioning rules.

SBCE Law

The Law establishes that:

- Obligation to Report Gross Revenue: Companies, groups, or conglomerates subject to SBCE penalties must report their gross revenue from the year preceding the initiation of the sanctioning administrative process. This information is required to determine the maximum applicable fine (Art. 37, §2)
- Management Body's Authority to Estimate Revenue: If an entity fails to report its gross revenue within the stipulated timeframe, the SBCE Management Body has the prerogative to estimate the revenue to proceed with the fine calculation (Art. 37, §2)
- Fine Cap Determination: The maximum fine amount is determined based on gross revenue as follows:
- Fines cannot exceed 3% of the entity's gross revenue from the prior year, adjusted by the Special Settlement and Custody System (SELIC) rate. In cases of recidivism, the fine can be progressively increased to a maximum of 4% (Art. 37, §1, I)

.Policy considerations

The Law does not indicate the terms for the estimate of the gross revenue of regulated agents that will be subject to the applicable sanctions in case of non-compliance with the SBCE rules. Therefore, a new procedure must be created, or an existing procedure applicable in other circumstances by the Federal Government may be adapted.

By establishing a standard procedure for such estimates, the system provides transparency and legal certainty in the enforcement of sanction, which mitigate the risks of future judicial disputes on the matter.

Timeline considerations

It is recommended that the procedure in question is established preferably between Stage I of the SBCE implementation) and Stage II when, in theory, there will be no mandatory measures and, therefore, no application of fines.

Responsible agency

The Management Body would be responsible for holding this task, as it is originally competent for setting the regulatory act on sanctions and penalties, according to Art. 35 of the Law.

Summary Table 14 - Enforcement and sanctions

Building Block 14: Enforcement and sanctions					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Compliance.Enforcement.1 – Issue regulation to govern the compliance cycle	• Mapped processes, procedures and functions for the MRV Compliance Cycle, approval of the monitoring plan and the reconciliation of obligations • The regulatory act that provides the description of the administrative process, timelines, obligations, functions and regulatory interventions by the Management Body	CIM Management Body	Stage I	NA	• The European Union
Compliance.Enforcement.2 – Issue a regulatory act for sanctions	• The regulatory act shall provide a description of administrative infractions and their respective penalties, rules of procedure for the sanctioning process, rules for the application of penalties, among other provisions.	Management Body	Stage II	Option A: Make-good provisions	• Québec • California
				Option B: Define a mix of fixed multipliers and fixed penalties	• China National ETS • Korea • Austria • New Zealand
				Option C: Define fixed penalties	• Shanghai Pilot
Compliance.Enforcement.3 – Create an administrative structure for sanctioning	• Create an administrative structure for sanctioning, judgments at first and second instances by the Management Body and CIM, respectively, and application of penalties.	The CIM and the ministry that will be pointed to implement the Management Body	Stage I	A1 Option B: Define a mix of fixed multipliers and fixed penalties	• China National ETS • Korea • Austria • New Zealand
				A1 Option C: Define fixed penalties	• Shanghai Pilot

Building Block 14: Enforcement and sanctions					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Compliance.Enforcement.4 – Determine which federal bodies will be involved in monitoring compliance with SBCE rules	• Determine which federal bodies will be involved in monitoring compliance with SBCE rules. • The indication of the federal bodies is a political-driven decision, and the choosing of the agency should be guided by the expertise necessary for the exercise of the monitoring functions.	The ministry under which the intended public agency is located.	Stage I	A3 Option A: Attribute certain or total enforcement powers to the equivalent of the Brazilian Ministry of Environment and Climate Change.	• Mexico
				A3 Option B: Attribute certain enforcement powers to other government bodies related to compliance and/or verification processes	• Ukraine
Compliance.Enforcement.5 – Define the procedure to estimate the gross revenue of companies or corporate groups subject to the sanctioning rules	• Define the procedure to estimate the gross revenue of companies or corporate groups subject to the sanctioning rules, for measuring applicable fines, in cases where the regulated entity does not provide the information by the required deadline.	Management Body	Stage II	NA	NA

5. SBCE operation: Allocation, market and registry

Section Summary

CBE allocation rules will impact the efficiency and fairness of the SBCE. While the cap determines overall emissions reduction, allocation influences abatement incentives, competitiveness, and cost distribution. The government can allocate allowances through free distribution, auctioning, or a combination of both, with international experience favouring a transition toward auctioning over time. Clear objectives, such as preventing carbon leakage, ensuring cost-effective abatement, and generating revenue for climate action must guide allocation decisions.

A well-functioning market requires clear trading rules. Financial institutions and regulatory oversight must be carefully managed. Financial players can enhance market liquidity and provide risk management tools but may introduce complexity. Over-regulation can increase compliance costs, while under-regulation risks fraud and manipulation. A strong governance framework is necessary to oversee trading and enforcement, ensuring market credibility. A robust registry system is essential for market transparency and integrity. It must be legally and institutionally integrated within the SBCE framework, ensuring secure tracking of emissions allowances, transfers, and compliance.

Allowance prices fluctuate based on supply, demand, and economic conditions. Policymakers must ensure stability while preserving market flexibility, considering the use of price or supply adjustment measures to prevent excessive volatility.

Building Block 15: Free Allocation – Priority Activities

- **The first NAP of the SBCE will rely on free allocation -verified data, robust baselines and benchmark methodologies will be a priority.** Grandparenting allocation requires a clearly defined historical reference period and verified emissions data to prevent distortions. Benchmarking approaches must establish sector-specific performance baselines and methodologies. International best practices will be very important in defining these regulatory elements, as well as a transparent stakeholder engagement.
- **The Management Body could develop a transition plan to gradually phase out free allocation.** The Management Body and the CIM could outline the timeline and criteria for shifting from free allocation to auctioning, ensuring predictability for businesses. With time, free allocation and support measures to mitigate carbon leakage risks should be limited to vulnerable sectors, after empirical studies and transparent impact assessments.

Building Block 16: Auctioning – Priority Activities

- **Auctioning could be introduced after the second NAP; the Management Body will need to establish a well-structured auctioning system. In preparation, pilot auctions can be used for the regulator to test processes and gain practical insights before the first live**

auctions are held. Auction operations can also be a good candidate for outsourcing to established operators, as they are a technical and specialized process.

- **Before Stage III, the Management Body and the CIM will need to assess the potential revenue from auctioning and its allocation.** Proceeds should be used to fund emissions reductions, just transition initiatives, and other climate-related policies, with clear governance on revenue use.

Building Block 17: Trading SBCE assets – Priority Activities

- **Market rules are set to ensure efficient and transparent trading of SBCE units.** Well-defined regulations should govern primary and secondary markets, ensuring market stability and preventing speculative risks, including the role of SBCE assets as financial products. Regulatory coordination with financial authorities is essential to integrating emissions allowances into broader financial markets while ensuring investor protection.
- **Trading platforms must be secure and well-regulated.** The Management Body must establish and oversee trading infrastructure, ensuring compliance with anti-fraud and anti-market manipulation regulations.

Building Block 18: Market Oversight – Priority Activities

- **A strong governance framework must be implemented to oversee the carbon market.** Clear responsibilities must be assigned to the Management Body and relevant financial regulators to ensure compliance, prevent fraud, and maintain market stability.
- **Monitoring mechanisms must be established to track market activity.** Regular market surveillance, automated reporting tools, and independent oversight bodies should be used to detect and mitigate risks in trading activities.

Building Block 19: Registry – Priority Activities

- **A centralized registry must be established to track SBCE regulated emissions and assets.** The development of registry functionalities for tracking verified emissions are a priority for Stage II, while those for tracking, trading and holding allowances can be developed on later stages, before NAP I. The registry functionalities can be modular and grow in complexity with time. The SBCE registry will need to be interoperable with voluntary markets and international compliance systems like Article 6 of the Paris Agreement and CORSIA.
- **Selection of an ETS registry procurement approach should be decided early.** The decision of procurement depends on several factors, including cost, security, functionality, and the degree of control required by the regulatory authority. The Management Body should reach to other public agencies and international governments to leverage existing infrastructure and best practices.

Building Block 20: Price Stabilization Mechanisms – Priority Activities

- **Consider the cautious use of price stabilization mechanisms:** Careful consideration of the conditions for implementing stabilization mechanisms is essential before deciding on their use to ensure regulatory certainty and market confidence.

Figure 13 - SBCE operation: Allocation, market and registry - Activities identified on the thematic area

SBCE Operation: unit allocation, trade and registry		Timeline			
		Stage I	Stage II	Stage III	Stage IV
BB15. Allocation of allowance					
	Operation.Allocation.1 Determine free allocation rules - grandparenting				
	Operation.Allocation.2 Determine free allocation rules – setting benchmarking rules				
	Operation.Allocation.3 Define the trajectory of free versus auctioned allowances				
BB16. Auctioning					
	Operation.Auctioning.1 Prepare the transition to an auction system				
	Operation.Auctioning.2 Design auctions for the SBCE				
BB17. Trading SBCE assets					
	Operation.Trading.1 Define market participation				
	Operation.Trading.2 Define the use of SBCE assets as financial products on the secondary market				
	Operation.Trading.3 Define modalities and platforms for trading SBCE units and securities				
BB18. Market oversight					
	Operation.Oversight.1 Implement oversight mechanisms on the secondary market				
	Operation.Oversight.2 Establish the governance framework for market oversight				
BB19. Registry					
	Operation.Registry.1 Specify and develop the SBCE Central Registry				
BB20. Price stabilization mechanisms					
	Operation.Stabilization.1 Define conditions under which price stabilization mechanisms should be used				
	Operation.Stabilization.2 Agree stabilisation mechanisms				

BB15. Free allocation

Operation.Allocation.1 – Determine free allocation rules - Grandparenting

After determining the number of CBEs to be distributed for each commitment period under the cap, rules for how the CBEs will be allocated need to be defined. The activity outlined in this subsection focusses on the use of grandparenting during the first National Allocation Plan.

SBCE Law

The Law sets out that:

- The first National Allocation Plan (NAP) will allocate all allowances free of charge (Art. 50).
- Article 21, VII states that the allocation of allowances (CBEs) may consider the relationship between emissions and production, as well as variations in emissions due to market-driven production increases or capacity expansion of regulated installations.
- Beyond this, there are no provisions in the Law detailing the specific methods or conditions for free allocation of allowances.

Policy considerations

The Management Body needs to determine for each sector and emission source which type of free allocation is adequate. It can choose between three types: Allocation based on historical emissions (grandparenting), fixed historical benchmarked allocation, or output-based benchmarked allocation. In this activity, the focus will be on considerations for the use of grandparenting

Grandparenting is a method for distributing emissions allowances based on historical emissions, making it independent of future production levels or emissions reduction efforts, so long as the firm remains operational. It is common for new ETSs to use grandparenting as the approach to free allocation in the beginning as it has lower administrative and data requirements than benchmarking and it helps to mitigate financial losses from stranded assets.[103] It can be an approach that is easier to implement, especially for homogenous hard-to-abate sectors or if the process of setting benchmarks is expected to be sensitive. However, it has notable downsides, including weakened incentives for emissions reduction, windfall profits, and barriers to new market entrants. If sectors are heterogeneous in their emissions profiles, there could be unused potential for decarbonization of emission-intensive installations and benchmarking is more appropriate to unlock this potential. Because of these limitations, grandparenting is often replaced by benchmarking or auctioning once better data and institutional capacity are available.

The following factors are important to consider if this method is chosen for specific sectors and/or time-periods:

Setting the base year: A crucial step in implementing grandparenting is selecting the historical period (base year) used to determine emission levels for allocation. The base year for grandparenting can be the first or second year of Stage III or an average of both. An average across years can balance fluctuations in the economic cycle, while selecting a single year would

[103] PMR, ICAP, 2021.

require ensuring that year is representative and free from major economic disruptions. For grandfathering, the following aspects should be considered:

- **Avoiding strategic behaviour**: If firms anticipate grandparenting, they may artificially inflate emissions before the base year to secure a larger allocation. It is crucial that the base year is set in the past, ideally before any anticipation of SBCE implementation, to avoid perverse incentives to inflate emissions or delay reductions. This can be mitigated by using the most historical base year possible, thereby reducing the risk of distorting behaviour in anticipation of the policy.
- **Ensuring fairness**: The base year should reflect a representative period for all firms in the sector, preventing arbitrary advantages or disadvantages.
- **Managing lobbying pressures**: If the base year is subject to change, firms may engage in political lobbying to influence allocation decisions in their favor.

Data availability and reliability: The Management Body may need to prioritize accurate data collection and verification of reporting to set accurate baselines:

- **Historical data collection:** At the early stages, accurate, standardized, or verified emissions data may be lacking. Collecting reliable reports may require retroactive data reconstruction or industry cooperation. Jurisdictions like the EU, condition entities to conducting energy audits in order to receive free allowances, which in turn benefits the data collection process.
- **Sectoral inconsistencies:** Some industries may have better historical data than others, leading to inconsistencies in initial allocation.
- **Risk of misallocation:** If emissions data is inaccurate or manipulated, firms may receive too many or too few allowances, creating inefficiencies in the market. See Design.Cap.2 - Define banking rules for ways to deal with intertemporal misallocation between commitment periods.

Addressing changes in sectoral activity: Because grandparenting relies on past emissions rather than current or future activity, it may not align well with evolving economic conditions, to mitigate these risks, some systems introduce adjustment mechanisms (e.g., periodic recalculations). Rules from the management body should include provisions to deal with the following scenarios:

- **Over-allocation to declining firms:** Companies that contract (close facilities/reduce output) after the base year may continue receiving allowances beyond their needs, which could lead to surplus allowances being sold for profit without meaningful emissions reductions.
- **Impacts on stranded assets:** While grandparenting can cushion financial losses for firms with long-term capital investments (e.g., power plants), it may extend the life of high-emitting assets, delaying necessary transitions to low-carbon infrastructure. A roadmap for other types of allocation, or technical requirements that condition the free allocation for instance by requiring regulated entities to adopt defined energy efficiency measures

Managing market distortions and carbon leakage:

- **Competitiveness**: Since grandparenting does not change marginal costs, firms still face economic pressures to relocate operations to jurisdictions with less stringent carbon policies (carbon leakage).

- **Barriers to new entrants**: Firms that lack historical emissions data may be excluded or receive disproportionately fewer allowances, reducing competition and innovation. The Management Body may introduce **reserve pools** of allowances for new entrants or phase in auctioning mechanisms to ensure fairer market access.

Given the challenges associated with grandparenting, it is typically seen as a temporary mechanism before shifting to the other types of benchmarking or auctioning. The Management Body policy roadmap should consider a transition strategy, where grandparenting is used to help industries adjust while minimizing disruptions to carbon pricing effectiveness in the following period.

An implementing regulation by the Management Body on free allocation of allowances should contain the decisions taken on policy questions, as well as the technical requirements and calculation methods for allowances allocation under grandparenting.

Timeline considerations

If allowance allocation and trading are to start at the beginning of the first NAP, free allocation rules and calculation method will need to be finalized by the end of Stage III. It is possible to delay allowance allocation until data for the second year of Stage III are fully processed and analysed.

Responsible agency

This activity is within the core responsibilities of the Management Body when deciding on the rules for the first NAP.

Table 20 - Policy choices and options Operation.Allocation.1

Activity	Policy Options	Jurisdiction	Experience
Operation. Allocation.1 - Determine allocation rules	Choice A: Benchmarkng	EU ETS	• Grandparenting was used as the main type in the first two phases (alongside auctioning). • Windfall profits through an overallocation of free allowances, especially through grandparenting, was a source of criticism for the EU ETS. [104]
	Choice B: Conditionality of free allocation	EU ETS	• Installations need to undergo an energy audit as mandated by the EU Energy Efficiency Directive and implement recommended energy efficiency measures. • The 20% highest emitters in their sector need to submit climate-neutrality plans laying out how emissions reduction will be achieved in future. • If these conditions are not met, free allocation of allowances is reduced by 20%.

[104] Carbon Market Watch, 2016.

Operation.Allocation.2 - Determine free allocation rules – benchmarking rules

After determining the number of allowances to be allocated, rules for how the allowances will be allocated need to be defined. The activity outlined in this subsection focusses on the establishment of benchmarking rules.

SBCE Law

The Law sets out that:

- The first National Allocation Plan (NAP) will allocate all allowances free of charge (Art. 50).
- Article 21, VII states that the allocation of allowances (CBEs) may consider the relationship between emissions and production, as well as variations in emissions due to market-driven production increases or capacity expansion of regulated installations.
- Beyond this, there are no provisions in the Law detailing the specific methods or conditions for free allocation of allowances.

Policy considerations

Benchmarking is a more efficient method of free allocation in ETSs compared to grandparenting. While grandparenting can be simple to implement, it discourages early adopters of clean technologies and may create windfall profits for high emitters. Benchmarking, by contrast, allocates allowances based on emissions intensity standards, ensuring that firms are rewarded for efficiency rather than past emission levels. This approach aligns with best practices observed in ETS programs such as Phase 3 and 4 of the EU ETS, the California Cap-and-Trade Program, and Québec's system under the Western Climate Initiative (WCI). Benchmarking requires detailed production and emissions data, making its implementation more complex but ultimately more effective in preserving abatement incentives and avoiding windfall profits.[105]

Setting the benchmarks: To implement benchmarking, regulators must develop methodologies that ensure fairness and accuracy for allowance allocation. Product-based benchmarks, where allowances are allocated based on the emissions intensity of a specific product, are the most precise but require extensive sectoral data. In cases where product benchmarks are infeasible, such as industries with heterogeneous production processes, default benchmarks based on energy input, fuel type, or process efficiency are commonly used. International benchmarks (e.g., EU ETS benchmarks, California's sectoral benchmarks) should be studied or considered as templates, ensuring harmonization and reducing competitiveness distortions. It is recommended that throughout the process of selecting the applicable benchmark, the government engages with stakeholders to gather input and avoid implementation setbacks.[106]

Calculation methods of benchmarks would typically be centred around the installations with the lowest emissions under the ETS. This sets the standard for comparison to all installations for a certain type of product. Reliable benchmarks therefore require robust data of emissions of regulated entities.

[105] PMR, 2021
[106] ICAP, 2022

Data availability and reliability: For benchmarking, the received emissions data would be used to determine the desired benchmark representing the lowest x% or the average of emissions intensity or the best available emission intensity, meaning the lowest emission levels achievable with the most advanced and effective technologies or practices for a product or source of emissions.[107] Data should be collected over a representative period (e.g., a three- to five-year rolling average) to avoid distortions from temporary fluctuations in output. Public transparency in benchmark development enhances accountability and prevents manipulation. Regular updates (e.g., every five years) ensure that benchmarks reflect technological advancements and evolving industry standards.

There are two main types of benchmarking:

Fixed historical benchmarked allocation (FHBA) - a static benchmark model that distributes allowances based on a firm's historical production levels and a predetermined sectoral benchmark. Unlike grandparenting, it does not reward high past emissions but instead incentivizes firms with lower emissions intensity. However, because allocations are fixed, FHBA does not adjust for future production changes, meaning firms with declining output may receive excess allowances, while growing firms may receive too few. Some considerations when implementing FHBA:

- **Benchmark calculation:** Regulators must define historical reference periods to calculate firm allocations, ensuring representative output levels and avoiding artificial inflation of emissions data.
- **Periodic updates:** Benchmarks should be updated every few years to reflect technological progress while preventing retroactive penalties for early adopters of low-carbon technologies.
- **New entrants:** Just as with grandparenting, the use of "new entrant reserves" provides fair allocation to new firms, preventing an unfair advantage for incumbents.
- **Over-allocation to declining firms:** Rules are usually established for facility closures, or declining output, so that firms do not profit from selling unused allowances after the stop operations.
- **Sector-specific adjustments:** Regulators should differentiate benchmarks for industries with multiple production methods to maintain comparability and fairness**.**

Output-based allocation (OBA) - a dynamic benchmark model that adjusts allowances based on actual production levels in each compliance period. Unlike FHBA, which is based on historical output, OBA ensures that firms receive allocations proportional to their real-time production. This prevents over-allocation to declining firms and supports production growth while maintaining emissions efficiency. However, because firms receive allowances based on output, OBA weakens the carbon price signal and may reduce incentives for demand-side abatement. Some considerations when implementing OBA:

- **Dynamic allocation:** OBA should link allowance distribution to current production levels, ensuring firms receive allocations proportional to actual output.
- **Preventing distortions:** The Management Body should cap maximum adjustments to prevent excessive allocation when firms rapidly expand production.

[107] While benchmarking typically starts with a simple 'one product, one benchmark' approach in most ETS, complexity often arises due to the challenges of identifying and standardizing products within each sector. This can lead to variations in emission intensities across similar products, making it more difficult to establish consistent and fair benchmarks for each product type.

- **Demand-side abatement:** Since OBA reduces cost pass-through, jurisdictions may implement complementary consumption-based pricing measures to maintain incentives for reducing demand.
- **Treatment of expanding output:** OBA should reward firms for efficiency improvements while allowing fair capacity expansions within benchmark limits.
- **Cap integrity: D**ynamic adjustments must not exceed the total SBCE cap, using adjustment factors or buffers to maintain environmental integrity is recommended.

An implementing regulation by the Management Body on free allocation of allowances should contain the decisions taken on policy questions, as well as the technical requirements and calculation methods for allowances allocation under benchmarking.

Timeline considerations

If allowance allocation and trading are to start at the beginning of the first NAP, free allocation rules and calculation method will need to be finalized by the end of Stage III. It is possible to delay allowance allocation by benchmarking until data for the second year of Stage III are fully processed and analysed.

Responsible agency

This activity is within the core responsibilities of the Management Body when deciding on the rules for the NAPs.

Table 21 - Policy choices and options Operation.Allocation.2

Activity	Policy Options	Jurisdiction	Experience[108]
Operation. Allocation.2. Determine allocation rules	Choice A: Type of benchmark allocation	**EU ETS**	• (tCO_2)/t product • Benchmark stringency: Benchmarks are based on the ten percent most efficient installations in 2016/17. They decrease by an industry-specific annual reduction factor (0.2 % to 1.6 %).
		California Cap-and-Trade	• (tCO_2)/t product • Benchmark stringency: 90% of average or "best in class"
		Québec	• (tCO_2)/t product (weighted average of process emissions, combustion emissions, and other emissions) • Sector level benchmarks: Yes; • Facility specific benchmarks: No • Benchmark stringency: Average performance
		Korea	• ($t CO_2$)/t product and (tCO_2)/t raw material input • Benchmark stringency: Capacity-weighted average
	Choice B: Alternative benchmark approach	**EU ETS**	• Energy-based benchmarks, process benchmarks (as fall back)
		California Québec Korea	• Energy-based benchmarks (as fall back)

Operation.Allocation.3 - Define the trajectory of free versus auctioned allowances

Once an annual cap, i.e. the total supply of allowances (CBEs) to the market including allowance reserves and potential price stabilization mechanisms, is set, policymakers will need to decide how allowances are brought into the market, i.e. allocated to regulated entities.

SBCE Law

The Law sets out that:

- The Management Body is responsible for allocating allowances either free of charge or through auctioning (Art. 11)
- The exact rules for allocation will be established in the National Allocation Plan (NAP) (Art. 24 III)
- The first NAP will allocate all allowances free of charge (Art. 50)

[108] ICAP, 2022

Policy considerations

In line with the approach taken by the Law, free allocation of allowances is often used as primary allocation method for the early stages of a newly developed ETSs as it allows regulated entities to familiarize themselves with the market dynamics and gain practical experience while minimizing the financial burden. Moreover, it gives the regulator time to prepare the rules and platform for auctioning. Auctioning can start in parallel as pilots for some sectors before a system-wide approach is adopted.

Auctioning sends a clear economic incentive to regulated entities to reduce emissions which might be diluted for freely allocated allowances. It further generates revenue for the government and supports price discovery on secondary markets. Free allocation, on the other hand, protects sectors that may, for instance, have difficulty passing carbon costs onto the final price of their products due to the competitive nature of international trade. Free allocation is therefore used to manage carbon leakage. Striking a good balance between the level of free allocation and auctioning is a sensitive distributive matter that needs careful handling. To successfully implement auctioning, a comprehensive assessment and planning phase is essential. It is recommended to implement a phased approach to auctioning, as envisioned by the Law. This helps manage market stability and stakeholder expectations. Table 17 presents the different ways that jurisdictions have introduced auctioning into their systems.

In order to provide clarity for regulated entities, it is recommended that the regulator communicates the timeline for the introduction of auctions, the share of freely allocated versus auctioned allowances after the first NAP and the eligibility for free allocation early. It is essential that eligibility for free allocation is restricted to regulated entities that are particularly exposed to a carbon price, e.g. such as due to a risk of carbon leakage or exposed to additional costs. It should be based on objective, transparent criteria, e.g. a clear formula with pre-defined thresholds for eligibility.

The number of allowances allocated for free should be aligned with the cap trajectory, i.e., it shall not exceed the cap in a specific year. If there is a risk that this condition is not met, provisions for a cross-sectoral correction factor might secure that allocation stays below the cap. If, for instance, production levels of a year are particularly high due to a positive economic development, output-based free allocation can exceed the cap. A cross-sectoral correction factor could then reduce all free allocation by a calculated percentage, such that the cap restriction is met again.

Timeline considerations

The first allocation of allowances will take place in Stage IV as part of the first NAP, following the two years of mandatory reporting in Stage III. The verified emissions data gathered in Stage III will form the basis for the calculation of free allocation of allowances. The number of free allowances that can be allocated also depends on the cap trajectory (see *Building Block 4 BB9. Cap* setting).

Responsible agency

The Law assigns this task to the Management Body.

Table 22 - Policy choices and options Operation.Allocation.3

Activity	Policy Options	Jurisdiction	Description[109]
Operation. Allocation. 3. Prepare the transition to an auction system	**Option A**: Phased introduction of auctioning (Share of free vs. auctioned allowances)	**EU ETS**	• Starting with predominantly free allocation in Phase 1, limited auctioning in Phase 2 (10%), and significantly increased auctioning in Phase 3 (2013-2020)[110] . In Phase 4 (2021-2030), auctioning became the main method of distributing allowances, accounting for at least 57% of the cap. • The system uses a mix of auctioning and benchmarking with an auction share of up to 57%. • A cross-sectoral correction factor ensures this share is met. • Lessons Learned: Gradual increase in auctioning helped manage market stability and stakeholder expectations. Transparent communication and stakeholder engagement were crucial.
		New Zealand	• Industrial free allocation is being phased down. A minimum annual phase-down rate of 1% across all industrial activities applies from 2021 to 2030. That rate will increase to 2% for the years 2031 to 2040, and to 3% for 2041 to 2050. The minimum phase-down rate could be adjusted for activities that are considered at lower risk of carbon leakage alongside other criteria set in the legislation.
		Republic of Korea	• Phase 1: 100% of allowances were allocated for free based on average GHG emissions from 2011 to 2013 for most sectors, with some sub-sectors using benchmarks. • Phase 2: Introduction of auctioning in selected sectors with 3% of allowances auctioned and 97% free allocation for sectors subject to auctioning; EITE sectors continued to receive 100% free allocation if they met specific criteria. • Phase 3: Increase in auctioning with at least 10% of allowances auctioned in eligible sub-sectors, and less than 90% free allocation for sectors subject to auctioning; EITE sectors still received 100% free allocation under revised criteria.
	Option B: Auctions as the primary method for allocating allowances	**RGGI States**	• Since the inception of the Regional Greenhouse Gas Initiative all allowances are sold. In 2023, 92% were sold at auction and a minimum amount were sold at fixed price.
		Europe ETS2 (Road transport and buildings)	• Allowances in the ETS 2 will only be auctioned.

[109] ICAP, 2024b.
[110] Directive 2009/29/EC

Activity	Policy Options	Jurisdiction	Description[109]
	Choice A. Eligibility of free allocation	**EU ETS**	• Selected industrial sectors receive free allocation. • The so-called *Carbon Leakage List* naming these sectors is determined with an objective formula based on trade and emissions intensity of industrial sectors.[111] • Power plants are excluded from free allocation as they are not at risk of experiencing carbon leakage. • Airlines received free allowances when the sector was first covered. This is now phasing out.
		California	• California uses leakage risk tiers to determine the level of free allocation provided to industrial facilities. Initially risk tiers received 100% allocation, but planned reductions for medium and low-risk tiers were delayed and ultimately kept at 100% through 2030 to address carbon leakage concerns effectively. • Auction share: ~70% of total California allowances were made available through auction in 2023.
		Québec	• First to Third compliance periods (2013 – 2020): Free allocation was based on recent production levels and historical emission averages, with 100% assistance for EITE sectors. Electricity and fuel distributors had to buy all their allowances, except for certain pre-2008 contracts. • Fourth compliance period (2021 – 2023): Assistance factors were set by trade exposure and emissions intensity, categorizing industries into low (90%), medium (95%), and high (100%) carbon leakage risks. • From 2024 Onwards: New rules will gradually decrease free allocations. Reductions are determined by a 2.34% cap decline, carbon leakage risk, the proportion of fixed process emissions, and a modulation adjustment factor to balance the reduction over time.
		New Zealand	• Free allocation is based on output and intensity-based benchmarks, for 26 eligible industrial activities. Activities are deemed eligible if both EITE criteria are met. Highly emissions-intensive activities (over 1,600 tCO_2e per NZD 1 million [USD 610,000] of revenue) receive 90% free allocation. Moderately emissions intensive activities (over 800 tCO_2e per NZD 1 million [USD 610,000] of revenue) receive 60% free allocation. An activity is deemed to be trade-exposed if there is transoceanic trade in the good produced

[111] European Commission, 2024a.

Summary Table 15 - Allocation of allowances

Building Block 15: Free allocation of allowances					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options/Choices**	**International examples**
Operation.Allocation.1 - Determine allocation rules - Grandparenting	• Approach for free allocation determined • Identify best practices for free allocation • Rules and calculation method for free allocation defined incl. base year in the case of grandparenting and potential rules for conditionality of free allocation	Management Body	Stage III	A2 Option A: Type of free allocation: Grandparenting	• EU ETS • California
				A2 Option B: Conditionality of free allocation	• EU ETS
Operation.Allocation.2 - Determine allocation rules - Benchmarking	• Identify best practices for benchmarking • Rules and calculation method for free allocation defined incl. type of benchmarking, benchmarking methodologies	Management Body	Stage III	Choice A: Type of benchmark allocation	• EU ETS • California • Quebec • Korea
				Choice B: Alternative benchmark approach	• EU ETS • California • Quebec • Korea
Operation.Allocation.3 - Define the trajectory of free versus auctioned allowances	• Trajectory of free versus auctioned allowances set (in shares) • Eligibility criteria for free allocation defined	Management Body	Stage IV	Option A: Phased introduction of auctioning (Share of free vs. auctioned allowances)	• EU ETS • New Zealand • Korea
				Option B: Auctions as the primary method for allocating allowances	• RGGI • EU ETS2
				Choice A. Eligibility of free allocation	• EU ETS • California • Quebec • New Zealand

BB16. Auctioning

Operation.Auctioning.1 - Prepare the transition to an auction system

International best practices have shown that free allocation methods may be successfully reduced or phased out in favour of allowance allocation through auctioning. Auctions enable governments to generate revenue that can support various objectives, such as enhancing other climate policies, addressing distributional concerns, and building public support for the ETS. Additionally, auctions reduce the potential for political lobbying, facilitate the implementation of price or supply adjustment measures (PSAMs), and improve the overall economic efficiency of the ETS. The latter includes better price discovery, increased market liquidity, reduced risk of distortions, incentivizing early action, and greater market transparency. [112]

SBCE Law

The Law sets out that:

- Allowances will be distributed either free of charge or through auctions or other administrative instruments (Art. 11, §1).
- The Management Body is responsible for setting regulations and determining the allocation methods for each commitment period (Art. 8 XII).
- The Management Body oversees auctions and manages the auction platform, but the Law does not specify whether it can delegate auction operations to a facilitating firm such as a stock exchange in Brazil.
- The principle of gradual implementation of auctioning is emphasized throughout the Law (Art. 4 V).
- Paid allocation of allowances will be subject to a maximum limit set in the National Allocation Plan (NAP), ensuring a smooth transition between commitment periods and providing predictability for operators (Art. 10; Art. 21, §1 I).
- Stage IV involves the first NAP, with only free allocation, while Stage V marks the full implementation of the SBCE, including the introduction of auctioning (Art. 50).
- Auction proceeds contribute to the SBCE's income, which includes payments from auctions or other administrative instruments and is allocated according to the provisions of the Law (Art. 27).

Policy considerations

The introduction of auctioning in the SBCE is an important step to strengthen market efficiency, enhancing price discovery, and ensuring the fair distribution of costs and benefits. A gradual and well-planned transition can minimize disruptions while aligning with best practices from international ETSs. The following activity outlines key steps for integrating auctioning into the SBCE:.[113] A clear

[112] PMR ICAP, 2021 PP. 108
[113] IEA, 2020

Economic studies and pre-analyses: Economic modelling serves as a tool for analyzing the potential costs and impacts of auctioning. These studies help to:

- Assess economic impacts on regulated sectors, identifying vulnerable industries and potential mitigation measures such as partial free allocation or transition assistance programs.
- Estimate expected auction revenues, supporting strategic planning on how funds will be used for climate projects, energy transition, or financial support for affected communities.
- Analyze cost-benefit distribution, evaluating the macroeconomic effects of auctioning on GDP, employment, and investment, as well as the distribution of costs across consumers, businesses, and government.

These analyses must consider data availability, technical expertise, implementation time, and financial resources. As economic models are not precise predictive tools but rather decision-support mechanisms, they should be used to inform policy, not replace it.

Tailored approaches for different sectors: Not all sectors have the same ability to pass through carbon costs or absorb the impacts of auctioning. To address carbon leakage risks, the SBCE can consider:

- Temporary free allocation for industries at risk, following examples like the EU ETS, which gradually increases auctioning while retaining some free allocation for exposed industries. [114]
- Revenue recycling or transition assistance for sectors disproportionately affected by auctioning, which can either complement or substitute the use of free allocation.
- Best practices and sector-specific strategies to ensure a gradual transition that supports economic stability while reinforcing climate objectives.

Operation of auction platform: Delegating auctioning to an established platform can reduce workload of the Management Body. If delegation is not possible or desired, the auction platform can be set up in a simple format, depending on market participants and auction design. Limited participation allows for a less complex auction platform. Under the Québec Cap-and-Trade System, auctioning and trading are handled by different entities. Auctions are conducted by the Western Climate Initiative, Inc.[115], that is the framework organization for the ETSs in California, Québec, and Washington.[116] Allowances trading in turn is facilitated by stock exchanges like the Intercontinental Exchange (ICE).

Pilot auctions and market trials: including market simulation and testing of different auction designs, can provide practical insights into auction design and operation. This helps in refining auction platforms and mechanisms for large-scale implementation. This activity should be considered in *Building Block 5.5 BB5. Knowledge development Activity 1 "Identify capacity needs and prepare a capacity building plan"*.

[114] ICAP, 2024c.
[115] WCI, 2024

[117] Schleich, et.al. 2009

Effective stakeholder engagement and communication: Engagement is essential in the phasing-in of auctions. This involves the Regulatory Affairs Committee as well as broader participation of stakeholders and experts under the PTAC. Providing clear information about the transition timeline, implementation steps, and expected impacts helps manage stakeholder expectations and reduces resistance.

Continuous monitoring of market responses: Making necessary adjustments to the auction schedule ensure that the transition does not lead to market disruptions. Adopting processes for adjustment as part of the regulation helps in maintaining market confidence.

Timeline considerations

Regulatory instruments in Stage I, should stipulate the phased approach with specific milestones for increasing auctioning shares.

Conducting empirical studies on carbon cost pass-through and sector-specific impact assessments should be conducted during Stage IV. Also, during Stage IV the Management Body should consider pilot auctions, conducting initial auction implementations on a small scale to gather practical insights. During this stage, the operationalization of an auction platform should begin.

During the drafting of the regulation for auctioning in Stage IV, including *Building Block 0 BB16.* Auctioning *Activity 2 Design auctions for the SBCE*, there should be stakeholder consultations with industry stakeholders, regulatory bodies, and other relevant parties through consultations, workshops, and surveys, also showing the outcomes of the empirical studies mentioned above.

Responsible agency

This activity is within the core responsibilities of the Management Body when deciding on the SBCE regulation and dispositions for the NAPs.

Operation.Auctioning.2 - Design auctions for the SBCE

Depending on the type and number of participants allowed in auctions as well as the size of the ETS, the Management Body can choose between a number of design options for the auctions.

SBCE Law

The Law sets out that:

- The Management Body is responsible for setting allocation regulations and determining allocation methods for each commitment period (Art. 8 XII).
- It is also tasked with conducting auctions and managing the auction platform, ensuring transparent and efficient auctioning of SBCE assets (Art. 11).
- Additionally, the Management Body establishes methodologies for defining reference values for SBCE asset auctions, ensuring alignment with market conditions and regulatory objectives (Art. 8 XII).

Policy considerations

There are different policy considerations to be explored and addressed when defining the rules for ETS auctions. The Management Body must specify the objectives of the auction, such as price signalling, efficient allocation, simplicity, transparency, credibility, and revenue raising. Additionally, auctions must align with the broader regulatory framework and market objectives.[117] They should be adaptable to specific market conditions and regulatory goals, ensuring they support the overall effectiveness and credibility of the SBCE. Clear, consistent rules and strong regulatory oversight are also essential for maintaining participant confidence and market integrity, this is to be addressed in *Building Block 5.3* ***Erro! Fonte de referência não encontrada.***...

- **Frequency and schedule:** Determining the frequency and schedule of auctions balances market stability and participant access. Frequent auctions ensure a steady flow of allowances into the secondary market, preventing volatility and enhancing liquidity.[118] However, too many auctions can increase transaction costs and risk low participation, so a balanced approach tailored to the specific SBCE market dynamics is essential.
- **Price determination:** Price determination methods in auctions significantly impact market behaviour and price signals. The price rule can be uniform, where all winners pay the same price, or discriminatory (pay-as-you-bid), where winners pay the prices, they bid. Uniform price auctions, where all successful bidders pay the market-clearing price, are favoured in ETSs because they reduce strategic bidding and provide clear, consistent price signals that reflect the true cost of emissions. This method supports efficient market functioning and reliable price discovery. Additionally, reserve prices can be set to prevent strategic behaviour such as bid shading and collusive agreements.[119]
- **Bidding format:** The choice between static (single-round or sealed-bid) and dynamic auctions (ascending or descending clock auctions) influences transparency and competition in the auction process. Sealed bid auctions, where participants submit bids without knowing others' bids, are widely used in ETSs for their simplicity and ability to minimize collusion. Dynamic auctions, involving iterative rounds of bidding, allow for better price discovery as bidders can adjust their bids based on observed behaviour. Furthermore, the auction format can be one-sided, where the government is the sole seller, or double, where multiple sellers, including firms, participate. [120] Additionally, auctions can be sequential or simultaneous, particularly when different types of units are sold, with simultaneous auctions better supporting efficient price generation.[121]
- **Participation:** Defining who can participate in the auctions is critical for ensuring broad competition and fair market access. Eligibility criteria should balance inclusivity with the need for creditworthy participants to ensure serious bidding. Rules should also address reporting requirements, client representation, and compliance to maintain a robust and credible auction process. Participation should ideally be non-discriminatory, allowing all registry account holders, including installation operators, financial services providers,

[117] Schleich, et.al. 2009
[118] PMR ICAP, 2021 PP. 106
[119] PMR ICAP, 2021 PP. 106
[120] Schleich, et.al. 2009
[121] Benz et.al., 2008

NGOs, and private individuals, to bid.[122] Additional mechanisms to address market manipulation and fraud will be discussed in *Building Block 5.3* ***Erro! Fonte de referência não encontrada.***.

- **Publication of information:** Publishing detailed auction results, including winning prices and volumes immediately after the auction helps maintain market confidence and supports price discovery. Clear communication of auction rules and procedures ensures that all stakeholders are well-informed and can participate on an equal footing. Information dissemination should also include auction schedules and any changes to ensure continuous participant engagement. [123]
- **Partially subscribed auctions:** Handling undersubscribed auctions requires predefined rules to manage unsold allowances effectively. Strategies may include auction cancellations, redistribution of allowances in future auctions, or utilizing reserve prices to maintain price floors. These mechanisms prevent market disruptions and ensure that the supply of allowances remains stable and predictable.[124]
- **Holding and purchase limits:** Some ETSs regulate that market participants can only bid for or acquire a limited number of allowances in auctions or on the secondary market and bank only a limited number of allowances in their registry accounts.[125] While this increases control over the market, the intervention might limit the efficient functioning of the market. In the worst case, a binding holding limit could reduce allowance prices and lead to a postponement of emissions reductions.[126] In a big system like the EU ETS, it is unlikely for an individual bidder to bid for a large share of an auction lot. In smaller markets, or in a market with a few covered entities with a large share of covered emissions, a single bidder might have a substantial influence on an auction and the resulting price signal. It is recommended to determine the concentration of potential allowances on large emitters before stipulating auctioning rules under the SBCE.

Timeline considerations

The drafting of the regulation for auction rules and auction design should happen during Stage IV.

Responsible agency

This activity is within the core responsibilities of the Management Body when deciding on the SBCE regulation and dispositions for the NAPs.

[122] PMR ICAP, 2021 PP. 106
[123] Schleich, et.al. 2009
[124] Ibid,106
[125] PMR, ICAP, 2021, p. 168f.
[126] Schleich, et.al. 2009

Table 23 - Policy choices and options Operation.Auctioning.2

Activity	Policy Options	Jurisdiction	Description[127]
Design auctions for the SBCE	Frequency	Québec	• Emission units are auctioned quarterly
		EU ETS	• Auctions are conducted daily by the European Energy Exchange (EEX)
	Format	New Zealand	• Auctions follow a sealed-bid, single-round format. The clearing price is set at the lowest successful bid and allowances are sold to all successful bidders at this price
		EU ETS	• Uniform price auctions with single rounds and sealed bids.
	Participation in auctions	Republic of Korea	• Participation in auctions is subject to some limitations. Only companies that do not receive all their allowances for free are eligible to bid, according to a list of eligible bidders published by the Ministry of Environment.
		Switzerland	• Auctions are open to entities covered by the Swiss ETS and the EU ETS, as well as to non-compliance entities allowed to place bids in the EU ETS
		EU ETS	• Compliance entities and non-compliance entities.
	Minimum Price	United Kingdom ETS	• Auctions have a GBP 22 (USD 27.50) Auction Reserve Price (ARP), below which allowances will not be sold.
		New Zealand	• The auctions include a confidential reserve price. If the lowest successful bid is below the reserve price the auction fails and all allowances on offer are rolled forward to the next auction within the same calendar year or cancelled if it is the last auction of that year
	Maximum bid quantities	Republic of Korea	• : Bidders can purchase a maximum of 15% of the allowances on offer.
		California and Québec	• In auctions, a single market participant can only submit a bid for up to 25% of the total number of auctions allowances. For nonregulated entities the limit is 4%.
	Partially subscribed auctions	Québec	• Units that remain unsold after an auction may be offered for sale again when the price at two consecutive auctions settles above the minimum price.
		United Kingdom	• Unsold allowances are over to the next four auctions, up to a limit of 125% of allowances originally intended for sale at those auctions.

[127] ICAP, 2024b.

Summary Table 16 - Auctioning

Building Block 16: Auctioning					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
A1. Prepare the transition to an auction system	• SBCE regulation should estipulate the introduction of auctions for allocation • Economic modelling on key macro-economic variables, impact assessment of introducing auctions, and revenue estimation. • Empirical studies on carbon cost pass-through and sector-specific impact assessments • Stakeholder consultations with industry stakeholders • Decide on an external provider of the auction platform	Management Body	Stage IV	NA	NA
A2. Design auctions for the SBCE	• Draft rules for auctioning and auction design	Management Body	Stage IV	Frequency	• Québec • New Zealand • California • RGGI • EU ETS
				Format	• New Zealand • EU ETS
				Participation in auctions	• Republic of Korea • Switzerland • EU ETS
				Minimum Price	• United Kingdom ETS • New Zealand
				Maximum bid quantities	• Republic of Korea • California and Québec
				Partially subscribed auctions	• Québec • United Kingdom

BB17. Trading SBCE assets

Emission units within the SBCE include allowances distributed by the Management Body through auctions, or free allocation, as well as registered CRVEs. These units can be traded among market participants, with the purpose of ensuring that the lowest-cost mitigation options are utilized to reduce emissions within the designated timeframe. Market design can support this process by ensuring liquidity and reducing transaction costs in different ways.

Operation.Trading.1 - Define market participation

Decisions about market participants in the market greatly affect efficiency. Firms with obligations under an ETS must engage in the market, but other entities, including financial market participants, could also play an important role in lowering transaction costs, enhancing liquidity and offering risk-management products.[128]

SBCE Law

The Law sets out provisions governing the transfer and sale of SBCE assets, CBEs and CRVEs. These transactions must comply with regulations set by the SBCE Management Body (Art. 13). Section III – "The Assets that Make Up the SBCE" defines ownership, transfer, and market participation for different entities, which may engage in the SBCE market as follows:

- Operators subject to compliance reconciliation under the SBCE, responsible for meeting emissions reduction or removal obligations (Art. 18).
- CRVE project generators, including natural or legal persons, indigenous peoples, and traditional peoples and communities who own or utilize property for emissions reduction or removal projects (Art. 17).
- CRVE project developers, which may include public authorities participating in jurisdictional REDD+ market-based carbon credit programs (Art. 17).
- Financial institutions, which provide book-keeping services for SBCE assets when traded on financial and capital markets (Art. 15).
- Other market participants, as transactions in SBCE assets are permitted on financial and capital markets (Art. 16).

Additionally, Article 18 stipulates that entities may voluntarily cancel carbon credits and SBCE assets, not only for compliance with reconciliation obligations but also for other self-imposed climate commitments.

Policy considerations

A major policy decision for both primary and secondary markets is whether participation in auctions and secondary markets shall only be allowed to compliance entities or opened to other participants. Different ETS frameworks include both compliance entities and financial intermediaries such as investment firms, banks, stockbrokers, and individuals interested in investing in climate assets. These participants can enhance market liquidity, provide hedging to

[128] PMR, ICAP, 2022.

reduce price risk, aggregate demand to reduce transaction costs for smaller firms, and offer financial market expertise. However, opening market participation to financial actors and other participants results in risks of excessive speculative activity that could artificially affect prices, increasing volatility and creating destructive practices.[129] To manage these risks, some ETSs limit market access to compliance entities only, excluding financial intermediaries. Others restrict transactions of financial instruments to qualified participants on registered exchanges. Some allow broader market access but impose stricter regulatory controls on non-compliance entities, requiring authorization, registration, reporting, record retention, and regulatory oversight. See Table 21 for international experience on market access.

The classification of SBCE assets as securities facilitates the involvement of financial actors in the market. During pilot Stages or the initial operation of an ETS, financial market participants may sometimes be restricted from trading.[130] Adopting the principle of gradual implementation, it is recommended to consider progressively opening the market to more sophisticated participants, similar to the experience in the EU ETS[131] and the Korean ETS. Participation restrictions can help maintain control over trading behaviour and limit misconduct, depending on the market oversight body's institutional strength during the early stages of SBCE trading. [132]

When deciding what entities can participate in an Emissions Trading System (ETS), several main policy considerations must be considered. These include:

- **Market liquidity and efficiency:** Secondary markets are the primary source for buying allowances for many compliance entities. For example, the EU ETS had only 48 unique bidding entities in auctions in 2021 (34 compliance entities and 14 financial actors), compared to 400-700 active participants per month on secondary markets[133]. More participants, including financial intermediaries, can enhance liquidity, making it easier to buy and sell emission units. This will depend on both the number of covered entities under the SBCE, as well as on the availability of units for trading on the market.
- **Risk management:** Allowing the participation of sophisticated financial institutions can help manage risks through derivative products, though it requires stringent oversight.
- **Inclusiveness and accessibility**: For example, market access for smaller compliance entities can be improved with the help of intermediaries.
- **Regulatory capacity and resources**: The capacity of regulatory bodies to manage and oversee the market influences policy decisions. Sufficient resources and time are required to establish and enforce regulations for broader market participation.
- **Market integrity and prevention of manipulation**: Ensure the market is not manipulated by limiting participant eligibility. For example, Kazakhstan restricted market access following instances of price manipulation. Stringent eligibility criteria, including Know Your Customer (KYC) provisions can help maintain market integrity.
- **Compliance and administrative burden**: Balance the need for comprehensive participation with the administrative burden on regulators and participants. Ensure the Management Body and the compliance entities have the necessary capacity and training to engage

[129] Hintermann, 2017
[130] PMR, ICAP, 2022.
[131] European Securities and Markets Authority, 2022.
[132] ICAP, 2024d.
[133] European Securities and Markets Authority, 2022, p. 54.

in the market effectively, this should be considered in *BB5. Knowledge development Activity 1 "Identify capacity needs and prepare a capacity building plan"*.

Timeline considerations

To ensure a well-functioning SBCE market, it would be important to review and clarify the provisions of The SBCE Law, to clearly identify potential market participants. This should happen in Stage I. Engaging with potential market participants, such as compliance entities, financial institutions, and other stakeholders, will provide valuable input on market design and participation rules. Finally, developing a comprehensive regulatory framework, including detailed regulations for eligibility, registration, and oversight, and establishing mechanisms to monitor and control speculative activities in Stage III.

Responsible agency

This activity is within the core responsibilities of the Management Body when deciding on the SBCE regulation and dispositions for the first NAP. Table 24 Policy choices and options Operation.Trading.1

Activity	Policy Options	Jurisdiction	Description[134]
Operation. Trading.1 Define market participation	**Option A:** Only compliance entities	**China**	• Currently, only compliance entities. The Draft Interim Regulations indicate that other types of institutions or individuals may be allowed in the market later, without a specified timeline.
	Option B: Compliance entities and non-compliance entities	**EU ETS**	• The EU ETS allows compliance and non-compliance entities to participate. Including banks, investors, brokers, and other service providers

		California	• Covered entities, opt-in covered entities, and Voluntarily Associated Entities can participate in the program. Voluntarily Associated Entities are approved individuals or entities that intend to:
			  • purchase, hold, sell, or retire compliance instruments but are not covered under the program
			  • operate an offset project registered with CARB; or
			  • provide clearing services and derivative clearing services as qualified entities.

		Québec	• Covered entities, including covered entities that opt into the system (both emitters), and non-compliance entities and individuals (participants). Participants can register to:
			  • purchase, hold, sell, or retire compliance instruments but are not covered under the program
			  • operate an offset project registered with the Ministry; or
			  • provide clearing services and derivative clearing services as qualified entities.
			  • Emitters and participants must have an account in the Compliance Instrument Tracking System Service (CITSS). Additional eligibility criteria apply according to the regulation

		New Zealand	• Any individual or organization can own and trade NZUs, if they hold an account with the NZ ETS Registry.
		RGGI	• Compliance entities, non-compliance entities (domestic and international), and individuals can participate if they provide a financial security.

[134] ICAP, 2024b

Operation.Trading.2 - Define the use of SBCE assets as financial products on the secondary market

As discussed in the previous activity, allowing the financial sector and other participants to join the carbon market makes these markets operate more like financial markets, necessitating increased oversight for this new trading segment. The financial sector offers products that can be traded in an ETS secondary market. One kind of these products are derivatives, also called secondary securities, which are contracts whose value is derived from changes in the price of allowances or credits used for offsetting. These derivatives are a crucial type of tradable asset in some ETSs. However, while they significantly enhance market liquidity, trading derivatives is considered riskier than trading in the spot market and can be more prone to speculative behaviour.

SBCE Law

The Law sets out that:

- SBCE assets, when traded in financial and capital markets, are classified as securities and are regulated under Law No. 6,385 (7 December 1976) (Art. 14).
- Private transactions of SBCE assets and carbon credits outside financial and capital markets are permitted, and in such cases, they are not subject to regulation by the (Comissão de Valores Mobiliários, CVM) (Art. 14, Sole Paragraph).
- The CVM is responsible for regulating SBCE asset trading within financial and capital markets (Art. 16). CVM's responsibilities include:
    - Requiring that SBCE assets and carbon credits traded on organized markets be held in custody at a central depository, in accordance with Art. 23 of Law No. 12,810 (15 May 2013).
    - Providing exemptions from specific registration requirements under Articles 19 and 21 of Law No. 6,385 (7 December 1976).
    - Defining special requirements for registering and admitting SBCE assets in financial and capital markets.
    - Establishing specific disclosure and information rules applicable to SBCE asset trading.
- The CVM may require that SBCE assets traded on securities markets be registered with authorized financial institutions (Art. 15).
- Bookkeepers are responsible for registering ownership, transfers, and encumbrances related to SBCE assets (Art. 15, §1).

The SBCE Management Body is responsible for regulating the interoperability of bookkeepers' records with the SBCE Central Registry, ensuring accurate data integration and tracking (Art. 15, §2).Policy considerations

By classifying SBCE assets as securities, the Law integrates these environmental instruments into the broader financial market framework. This is significant as it provides a structured and regulated environment for trading these assets, ensuring market stability and investor protection. Moreover, mandating SBCE assets be registered with authorized financial institutions ensures that these transactions are monitored and regulated by experienced entities. This enhances transparency and accountability in the trading of these assets.

Furthermore, the Law assigns the responsibility for regulating SBCE asset trading on capital and financial markets to the CVM, which will establish provisions for registrations and special requirements for admission to the securities market of the assets that make up the SBCE when traded on the financial and capital markets.

Derivatives, which can constitute a significant share of transactions in markets, like in the EU ETS, include forward sales, futures, swaps, and options. The benefits of derivatives depend on the sectors covered by the SBCE. Derivatives are valuable for firms that are seeking certainty on future costs. For instance, electricity generators sell their product in advance to industrial installations, meaning they have a high demand to hedge their carbon price risks. Derivatives enable firms to manage risks associated with carbon price fluctuations, ensuring profitability by locking in costs and revenues. [135] Additionally, futures markets influence current carbon prices by reflecting future price expectations, fostering arbitrage and improving price discovery. This intertemporal substitution ensures the guaranteed future sale or purchase of allowances.

Despite their benefits, derivative trading is riskier than spot trading due to a perceived lack of transparency and higher speculative behaviour. Therefore, the government may also choose to restrict the types of products traded in carbon markets, especially in the initial stages of the SBCE implementation.

The Law does not explicitly assign a faculty to the Management Body to regulate or limit the use of specific financial products over SBCE securities, and it appears that this would fall under the jurisdiction of the CVM. Financial participation could entail risks to the environmental integrity of the SBCE, for example through market concentration, manipulation, and excessive speculation. These dynamics can lead to price changes unrelated to market fundamentals, such as abatement costs, thus reducing the price signal's effectiveness in incentivizing emissions reductions. For instance, if prices are distorted due to speculative trading or manipulation, entities may face weakened incentives to decarbonize, undermining the scheme's environmental goals, or lose confidence on the price signal.[136] These impacts should be considered by the Management Body and communicated to the CVM. It is recommended that both the CVM and the Management Body evaluate the risks and benefits of allowing or conditioning the trade of derivatives to enable compliance entities to hedge their carbon price risks.

Timeline considerations

To ensure a well-functioning SBCE market, it's recommended to review and clarify the provisions of SBCE Law, identifying any gaps and ambiguities related to the possibility of regulating financial products linked to SBCE securities. As part of this process, a coordinated workplan should be developed between the SBCE Management Body and the CVM to guide the integration of carbon and financial markets. This workplan should outline roles, responsibilities, timelines, and necessary regulatory adjustments to enable the secure and effective use of financial instruments. This should happen in Stage I.

In Stages III and IV, the Management Body should develop best-practice studies and cost-benefit analysis of incorporating derivatives in the different stages of the SBCE. Considering the

[135] ESMA, 2021
[136] Quemin & Pahle, 2023

covered sectors and the regulatory framework, including oversight, and mechanisms to monitor and control speculative activities.

Responsible agency

The primary responsibility for regulating and overseeing the SBCE market falls to the CVM and the SBCE Management Body. These entities will establish the necessary frameworks, ensure compliance, and oversee the trading platforms and regulatory requirements to facilitate a well-functioning and transparent carbon market.

Operation.Trading.3 - Define modalities and platforms for trading SBCE units and securities

Trading in secondary markets can refer to direct trading between entities, over the counter (OTC) trading that is facilitated by a broker, or trading on established platforms, like stock or commodity exchanges. The advantage of organized trading is that it can be regulated, and it provides information for price discovery, reducing uncertainty for market participants.[137]

SBCE Law

The Law sets out that:

- SBCE assets can be traded in financial and capital markets and are classified as securities (Art. 16)
- Trading of SBCE assets is subject to the regulatory framework established by the Securities Market Law (Law No. 6,385 of 7 December 1976)
- Private transactions of SBCE assets outside financial and capital markets are permitted and are not subject to CVM regulation (Art. 14, Sole Paragraph)
- While the Law does not explicitly mandate a preference for organized exchanges over the counter (OTC) markets, it does reinforce the use of structured trading platforms by requiring custody at a central depository for organized market trades (Art. 16, I).

Policy considerations

Based on the provisions of the SBCE Law, SBCE assets can be traded bilaterally, over the counter (OTC), and on exchanges. While the Law allows for the coexistence of these formats, it does not specify how exchange-based trading should be implemented or how responsibilities should be allocated between the SBCE Management Body and the CVM. Given this, further work is needed to operationalize these mechanisms within the current legal and institutional framework. Additionally, considering the parallel development of Brazil's voluntary carbon market and the existence of various trading platforms, the integration of these systems could be addressed early in the SBCE's implementation. Early planning can help avoid market fragmentation and enable infrastructure and regulatory alignment from the outset.

To that end, the following activities could be considered in the early phases of SBCE implementation:

[137] PMR, ICAP, 2021.

- Define the institutional roles and coordination mechanisms between the SBCE Management Body and the CVM for regulating and supervising exchange-based and OTC trading of SBCE assets.
- Identify legal and regulatory requirements for enabling exchange-based trading and integration with existing market platforms, including the voluntary market.
- Plan the integration of trading platforms with core SBCE infrastructure, particularly the Registry, including specifications for linkages with central securities depositories and custodial services.
- Map the necessary information flows between systems and institutions, including real-time data sharing, transaction reporting, and verification procedures.
- Assess platform authorization criteria and infrastructure readiness, including the potential role of existing exchanges and brokers.
- Develop a phased strategy for transitioning or expanding from OTC trading to exchange-based platforms, based on market maturity, liquidity, and participation.
- Draw from international best practices and implementation experiences (see Table 22) to inform technical planning and regulatory design.

A trading platform can be operated by a stock exchange, a commodity exchange, or any authorized financial entity. The Law does not mandate whether trading allowances and carbon credits should be on the same or separate platforms, leaving this decision to market participants and regulatory considerations. Integration of trading platforms, auction systems, and registries may enhance market efficiency. However, the SBCE Law does not explicitly require such integration, leaving it to regulatory discretion.

Timeline considerations

The definition of trading formats and platforms needs to occur in Stage III, prior to the First NAP, when trading will begin.

Responsible agency

The primary responsibility for regulating and overseeing the SBCE market falls to the CVM and the SBCE management body. These entities will establish the necessary frameworks, ensure compliance, and manage the trading platforms and regulatory requirements to facilitate a well-functioning and transparent carbon market.

Table 25 - Policy choices and options Operation.Trading.3

Activity	Policy Options	Jurisdiction	International Experience and lessons learned[138]
Operation.Trading.3. Define modalities of trading SBCE units and securities	**Option A**: Dedicated trading platforms, without financial trading	**China**	• Carbon emissions allowances can be traded on a dedicated trading platform managed by the Shanghai Environment and Energy Exchange. Due to financial market-related regulations, other products (e.g. derivatives) are currently not allowed
		Switzerland	• Allowances are not tradable on regulated markets but may be traded over the counter.
	Option B: External trading platform, with financial products trading	**EU ETS**	• Spot, futures, options, and forward contracts (OTC) are traded on the secondary markets. Besides the EEX, futures are traded on ICE ENDEX and Nasdaq.
		UK ETS	• UK allow market participants to trade contracts for the delivery of allowances on specified dates in the future (UK allowance futures). Trading is managed by ICE Futures Europe.
		Québec	• Companies can trade directly over the counter. There are also financial derivatives that are traded in platforms such as the Intercontinental Exchange (ICE), the CME group or the Nodal exchange.
		New Zealand	• Most NZUs are traded on the secondary market. Trades can take place directly between companies (OTC) or via a trading platform. Trades can be on a spot basis or through forward contract.
		California	• Allowances, offsets, and financial derivatives are traded in the secondary market in the Intercontinental Exchange (ICE) or the CME group platforms. Any company qualified to access ICE or CME can trade directly or through a future commission merchant. Companies can also trade directly over the counter but must have a CITSS account to take delivery of compliance instruments.

[138] PMR, ICAP, 2021.

Summary Table 17 - Market design: trading assets under the SBCE

Building Block 17: Trading SBCE assets					
Activity	**Key outputs**	**Lead agency**	**Time-line**	**Options**	**International examples**
Operation.Trading.1 - Define market participation	• Review and clarify the provisions of SBCE Law, identifying any gaps and ambiguities related to market participants.	Management Body	Stage I	Option A: Only compliance entities	• China
	• Stakeholder engagement with compliance entities, financial institutions, and other potential participants • Regulatory framework, including eligibility, registration, and oversight, and establishing mechanisms to monitor and control speculative activities	Management Body	Stage III	Option B: Compliance entities and non-compliance entities	• EU ETS • California • Québec • New Zealand • RGGI
Operation.Trading.2 - Define the use of SBCE assets as financial products on the secondary market	• Review and clarify the provisions of SBCE Law, on the possibility of regulating financial products linked to SBCE securities.	Management Body, CVM	Stage I	NA	•
	• Best-practice studies and cost-benefit analysis of incorporating derivatives in the different stages of the SBCE.	Management Body	In Stages III and IV	NA	• EU ETS • California
Operation.Trading.3 - Define modalities and platforms for trading SBCE units and securities	• Definition of modalities and trading platforms	Management Body, CVM	Stage III,	Option A: Dedicated trading platforms, without financial trading	• China • Switzerland
				Option B: External trading platform, with financial products trading	• EU ETS • UK ETS • Québec • New Zealand

BB18. Market Oversight

Market oversight controls and rectifies the functioning of primary and secondary markets for allowances and potentially allowed derivatives, protecting the markets from misconduct. Effective market oversight ensures that the trading of emission units is transparent, fair, and efficient, thereby maintaining market confidence and promoting investment in low-cost abatement opportunities. It encompasses a range of activities, including the regulation of market participants, monitoring of trading activities, enforcement of compliance, and dissemination of market data to stakeholders.

Operation.Oversight.1 - Establish the governance framework for market oversight

Market oversight involves regulating market access and implementing safeguards against volatility and fraud. This function is distinct from compliance oversight related to emissions reporting, data management, and the accreditation of carbon crediting methodologies. Due to this differentiation, a specialized governance framework is required.

SBCE Law

The Law sets out that:

- The SBCE Management Body is responsible for regulating the transfer of ownership and cancellation of SBCE assets (Art. 13).
- It has broad enforcement powers, including applying sanctions and handling first-instance appeals for non-compliance under the SBCE (Art. 8).
- It is mandated to manage the SBCE Central Registry, ensuring the tracking of national transactions of SBCE assets and the data management of operators (Art. 23).
- It is responsible for regulating the interoperability of bookkeepers' records with the SBCE Central Registry, ensuring alignment when assets operate in financial and capital markets (Art. 15, §2).
- The SBCE Management Body may define additional functionalities for the registry as needed to fulfill its role (Art. 24, VII).
- The Securities and Exchange Commission (CVM) is responsible for regulating SBCE asset trading in financial and capital markets (Art. 16).
- The CVM may require SBCE assets traded in financial and capital markets to be booked with authorized financial institutions to ensure proper recording and management of ownership and transfers (Art. 15).

Policy considerations

The 2022 *Governance of ETS Report* from PMI and ICAP highlights the main actors and their functions in market oversight in other systems.[139]

[139] PMR, ICAP, 2022.pp 27

Table 26 - Actors in ETS Governance (oversight)

Actor		Function	International example
Public	ETS Administrator	Overall management of the ETS	• California Air Resources Board (CARB), • German Emissions Trading Authority (DEHSt)
	Lead Executive Agency	Political oversight and coordination, executive rulemaking	• German Ministry for the Environment, Nature Protection and Nuclear Safety (BMU)
	Other Executive Agencies	Offer guidance, support and scientific input on select issues	• U.S. Commodity Futures Trading Commission • (CFTC), Japanese Statistics Bureau, Netherlands Environmental Assessment Agency (PBL)
	Delegated Support Entity	Support on delegated tasks	• Western Climate Initiative, Inc. (WCI, Inc.), • Regional Greenhouse Gas Initiative, Inc.(RGGI, Inc.)
Public-Private Partnerships	Exchanges	Offer platform for trading of emission units and derivatives, sometimes also clearing and auctioning services	• European Energy Exchange (EEX), • Intercontinental Exchange (ICE)
	Brokers	Market making by facilitating transactions in emission units and derivatives, usually for non-standardized transactions and smaller volumes; aggregating transactions	• Commodity trading firms, specialized dealers and brokers
Private	Banks	Lending and financing, hedging counterparty	• Commercial banks, investment banks, credit unions
	Compliance Entities	Subject to compliance obligations	• Utilities, industrial facilities

Adapted from PMR, ICAP, "*Governance of Emissions Trading Systems*". pp.23

From our understanding of the SBCE Law, market oversight rulemaking functions are distributed between different public agencies, ensuring effective regulation of SBCE asset trading across primary, secondary, and financial markets.

- **The SBCE Management Body** has broad rulemaking functions on the primary and secondary markets of SBCE assets, including the authority to establish provisions for market access, holding limits on CBEs, and transparency and reporting requirements for operators. It should be further analyzed whether this authority extends to regulating non-covered market participants, such as financial intermediaries (brokers, traders, investment firms), as the Law appears to grant the CVM exclusive jurisdiction.
- Bilateral transactions of SBCE assets are allowed and are not subject to regulation by CVM. Article 14 explicitly states that private transactions outside financial and capital markets are permitted, meaning these transactions do not fall under CVM jurisdiction. Since CVM

does not regulate private transactions, the SBCE Management Body appears to be the only relevant authority overseeing bilateral trade.

- Article 13 grants the SBCE Management Body rulemaking authority over the transfer and cancellation of SBCE assets, suggesting it may issue rules and guidelines for bilateral trading. It should be clarified whether the Management Body has the faculties to regulate bilateral trading among other market participants outside of operators and CRVE holders. Additionally, the Management Body operates the SBCE Central Registry, which tracks national transactions, suggesting that all trades would still need to be recorded for compliance purposes and might be subject to interoperative regulations.
- **The CVM** plays a key role in overseeing the trading of SBCE assets in financial and capital markets. CVM is the exclusive authority responsible for regulating SBCE asset trading in these markets, ensuring market integrity, transparency, and financial oversight
- **Other authorities:** In addition to the Management Body and the CVM, other authorities may play a role in market oversight. Competition authorities could oversee collusive behaviour in auctions or secondary markets, given its role in monitoring financial practices in public markets.

In the international experience not all oversight functions have been exercised by government authorities. California and Québec have relied on a non-profit corporation, the Western Climate Initiative, Inc. (WCI,Inc.), for the administration of allowance auctions, independent market monitoring and oversight services. The WCI also provides help desk services to market participants. The RGGI States rely on a non-profit corporation, the Regional Greenhouse Gas Initiative, Inc., which monitors and hosts the registry and centralizes communication functions between the States and Stakeholders. Neither WCI Inc. or RGGI Inc have executive, normative, compliance or enforcement functions, which are attributed exclusively to the jurisdiction of the corresponding State.[140] In the EU Emissions Trading System (EU ETS), Member States have delegated the auctioning of emission units to the European Energy Exchange (EEX), a private exchange that operates under a Joint Procurement Agreement or through bilateral arrangements with different EU member states[141]. The European Securities and Markets Authority (ESMA) is responsible for monitoring both primary and secondary markets for EU allowances. In light of increasing energy prices in 2021, the European Commission tasked ESMA to conduct a comprehensive analysis of the integrity of the European carbon market.[142]

It is recommended that the government identifies oversight responsibilities and fostering cooperation with other regulatory bodies. The Management Body should determine whether cost sharing from centralizing and outsourcing operations offers net savings compared to setting up and managing tracking systems and auctioning platforms.

Timeline considerations

- Defining oversight responsibilities from the Law needs to be undertaken as early as possible and should be included in the SBCE Guidelines to be provided by the CIM in Stage I.

[140] PMR, ICAP, 2022.pp 41
[141] PMR, ICAP, 2022.pp 41
[142] European Securities and Markets Authority, 2022.

- In Stage III, the Management Body should conduct a study on the different public-private partnerships for outsourcing oversight, auctioning and trading functionalities, considering the role of the CVM in authorizing financial institutions in booking SBCE assets.
- In Stage III, the Management Body should issue guidelines, rules and formats for bilateral trading of SBCE assets.
- In Stage III, the CVM should determine the provisions for authorized financial institutions to book SBCE assets in accordance with the applicable Law.
- In Stage III, the CVM should enact the dispositions for SBCE assets traded in capital and financial markets.
- In Stage III, the SBCE should define agreements with other agencies, to strengthen competition and avoid market manipulation.

Responsible agency

Responsibilities are divided on the sub-section above.

Operation.Oversight.2: Implement oversight mechanisms on the secondary market

The scope of ex-post market oversight depends significantly on the types of market participants allowed to trade and the holding and position limits defined by regulations on auctioning and trading (see sections 4.2 and 4.3). Markets with stricter *a priori* regulations exhibit less scope for market misconduct. Various jurisdictions have evolved their market oversight regulations, registry infrastructure, and broader legal frameworks to protect good-faith participants from misconduct and provide greater market certainty.

SBCE Law

The Law sets out that:

- The Management Body regulates the SBCE asset market and implements its instruments, in line with the provisions of the Law and CIM guidelines (Art. 8 I)
- The Management Body has sanctioning powers, including the authority to impose penalties and enforce compliance with SBCE regulations (Art. 8)
- The Management Body maintains and operates the SBCE Central Registry, ensuring the consolidation of GHG emissions data and transaction records for SBCE assets (Art. 23)
- An act of the Management Body will regulate the transfer of ownership and cancellation of SBCE assets (Art. 13)

Policy considerations

Drawing on examples from established systems, additional controls, security measures, and regulatory practices should be considered in the market design to bolster market integrity.

In addition to those identified in *Building Block 4.4* ***Erro! Autoreferência de indicador não válida.***, the following infrastructure requirements on the Central Registry for market oversight should be considered:

- **Enhanced controls for account opening:** Standardized Know-Your-Customer (KYC) checks on the Registry. The EU ETS defined centralized regulation that included obligations for registering market participants.[143]
- **Increased transaction security measures**: Implementation of waiting periods for transaction execution and advanced authentication methods to enhance security.
- **Faculties for registry administrators**: Empowering administrators to suspend or block accounts with suspicious activity.
- **Regulatory faculties:** In addition to stringent surveillance, market oversight involves defining the transaction data collected to detect unusual trading patterns.[144] Market access typically requires participants to comply with reporting requirements, with their operations subject to scrutiny by advanced software tools.[145]
- It is important to note that the establishment of further reporting obligations for non-obligated operators or CRVE project generators or developers could be outside the scope of the Management Body's authority. If so, regulation should be established by the other authorities, including the CVM. Clarification of roles and responsibilities between government entities should be part of Activity 1 of this Building Block.
- There is a potential trade-off between effective market oversight, which requires robust data, and the confidentiality of firms' market behavior. Data collection through the registry should align with market oversight while considering confidentiality concerns.
- **Avoid fraudulent activities**: market oversight rules could include the following specific regulatory acts and provisions:[146]

    - Consider the establishment of an independent market monitor: To oversee allowance auctions and trading activities.
    - Develop a legal framework in collaboration with other agencies, to build registry and oversight functions against fraud and market manipulation, including clear prohibitions on collusive or fraudulent practices.
    - Align the Central Registry operations and faculties to oversight provisions.
    - Align market provisions with international standards: Seeking collaboration with international agencies and ministries to ensure consistency and integrity across markets.
    - In some jurisdictions, good-faith participants are protected by recognizing the irrevocability of registry transfers, even when asset origins are questionable.

Timeline considerations

The competent authority should seek to identify best practices and engage with international agencies during Stage III of SBCE implementation

During Stage III, oversight mechanisms should be considered in the establishment of auctioning and trading regulation, in the organizational and functional regulation for the Central Registry.

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[143] European Commission, 2013
[144] European Union, 2014
[145] Market access is often conditioned to reporting requirements and accepting scrutiny by advanced software tools.
[146] PMR, ICAP, 2022.pp 56

Responsible agency

According to the Law, the Management Body and the CVM have faculties in market regulation and oversight.

Summary Table 18 - Market oversight

Building Block 18: Market oversight					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
Operation.Oversight.1 - Establish the governance framework for market oversight	• Defining oversight responsibilities from the Law needs to be undertaken as early as possible and should be included in the SBCE Guidelines to be provided by the CIM in Stage I.	CIM, Management Body	Stage I	NA	NA
	• Study on the different public-private partnerships for outsourcing oversight, auctioning and trading functionalities, • Determine the provisions for authorized financial institutions to book SBCE assets in accordance with the applicable Law. • Enact the dispositions for SBCE assets traded in capital and financial markets. • Define agreements with other agencies.	Management Body CVM	Stage III	A1 Option A: Delegated Support Entity	• California • Québec • RGGI
				A1 Option B: Relying on other executive agencies	• California • Québec • Japan • Germany • The EU
Operation.Oversight.2 - Implement oversight mechanisms on the secondary market	• Consider the establishment of an independent market monitor: • Develop a legal framework: In collaboration with the other competent authorities. • Align the Central Registry operations and faculties to oversight provisions. • Align market provisions with international standards.	Management Body, Executive Branch and Securities Commission	Stage III	NA	NA

BB19. Registry

Operation.Registry.1 - Specify and develop the SBCE Central Registry

The emissions registry is essential for the operation of an ETS, and is used to manage, record, verify data related to emissions and trading activities. Its purpose is to support accuracy and transparency in the tracking of emissions, allowance holdings, transactions and obligations.

SBCE Law

The Law establishes that:

- The SBCE management body is responsible for maintaining a digital platform for the SBCE Central Registry (Art. 23).
- The registry will:
    - Receive and consolidate information on GHG emissions and removals (Art. 23, I).
    - Ensure accurate accounting of the granting, acquisition, holding, transfer, and cancellation of SBCE assets (Art. 23, II).
    - Trace national and international transactions, including ITMOs (Art. 23, III).
- The SBCE Central Registry must allow for:
    - Management of emissions and removals data from each installation or regulated source (Art. 24, I).
    - Tracking allowances held by each operator (Art. 24, II).
    - Periodic reconciliation of obligations (Art. 24, III).
    - Obtaining information on CRVE transactions within Brazil to ensure compliance with international climate commitments (Art. 24, IV).
    - Interoperability with other registries, including Art. 6 mechanisms and independent certification systems (Art. 24, V).
    - Disclosure of information in open data format, in line with the Digital Government Law (Art. 24, VI).
    - Any other functions established in a specific act of the SBCE management body (Art. 24, VII).
- CRVEs and CBEs must be registered in the SBCE Central Registry to be legally recognized (Art. 10, sole paragraph; Art. 44).
- The transfer of ownership and cancellation of SBCE assets will be regulated by the SBCE management body through the SBCE Central Registry (Art. 13).
- Annual emissions reports validated by a conformity assessment body must be recorded in the SBCE Central Registry (Art. 33).
- Any use of SBCE assets for voluntary offsetting results in their cancellation in the SBCE Central Registry (Art. 45).

Policy considerations

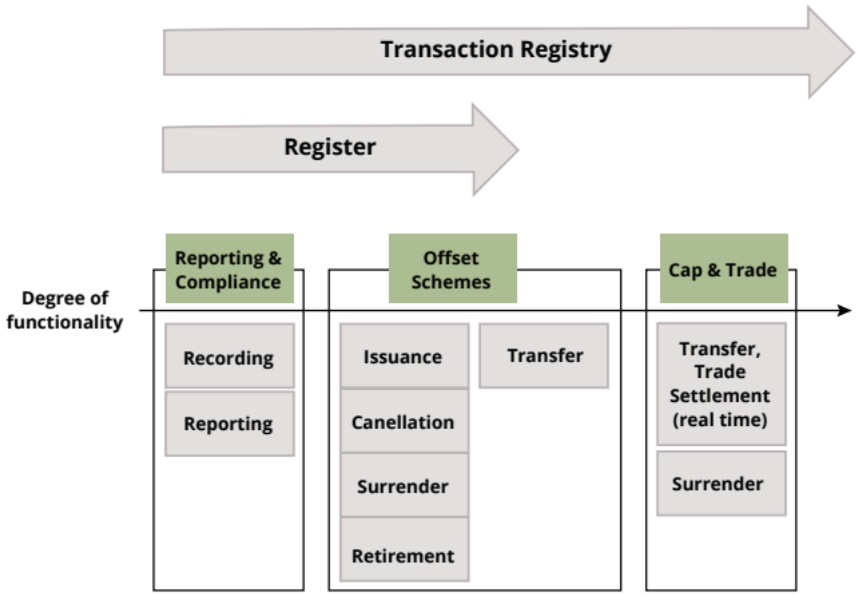
The World Bank and Forest Carbon Partnership Facility's 2016 report on *Emissions Trading Registries*[147] provides useful categorization to begin defining the requirements for the SBCE Central Registry. Using the definitions from that report, the specifications in the Law suggest that the registry will need to incorporate the following functionalities:

A registry plays a crucial role in environmental market mechanisms by tracking verified emissions and/or environmental units and ensuring transparency and accountability in emissions trading systems. The specific functionalities required for a registry depend on factors such as the number of regulated entities, available resources, and the stage of implementation of the ETS. The functions that the legal framework will need to support include:

- **Reporting and compliance database:** A fundamental function of the Central Registry will be to serve as a reporting database. It must support the transparency of the market mechanism by ensuring that verified emissions and compliance data are accurately recorded and accessible to the authorities and relevant stakeholders. This functionality requires categorization of registry users and opening unique accounts.
- **Record the creation (registration) or issuance (serialization) of an SBCE asset;** This function ensures that units are issued (created), allocated, recorded, and tracked in a transparent and accountable manner. In an ETS, the issuance of units is a government function carried out according to predefined rules, under the responsibility of the registry administrator. These units may represent allowances to be allocated under the cap. Issuance follows clear accounting principles to ensure compliance with regulations. Once issued, allowances are distributed according to allocation methodologies to the relevant accounts, provided there are no restrictions (e.g., blocked or closed accounts).
- **Record the unit's surrender, cancellation, and retirement;** This function ensures the orderly cancellation of carbon units, marking the final stage in their lifecycle. Cancellation can be triggered manually by an authorized representative to comply with regulatory requirements, such as surrendering allowances against verified emissions, or for voluntary offsetting. It may also be mandated by authorities in cases of overissuance or administrative corrections.
- **Facilitate transfers of the underlying unit (including tracking):** The ability to transfer carbon units is a fundamental feature of an ETS registry, enabling the movement of allowances between market participants while ensuring transparency, regulatory compliance, and accurate tracking of ownership changes. Transfers may occur for compliance, trading, or voluntary offsetting purposes, and the registry must facilitate these transactions securely and efficiently.
- **Data management system**: There may also be a requirement for a data management system in the event that additional data is required to be recorded, for example data relating to the environmental integrity of removal units.

[147] World Bank, 2016.

Figure 14 - Platform Functionalities



Source: *Partnership for Market Readiness (PMR) and Forest Carbon Partnership Facility (FCPF). 2016. Emissions Trading Registries: Guidance on Regulation, Development, and Administration. World Bank, Washington, DC.*

The design and implementation of the SBCE Central registry require careful consideration of several factors. One of the most important decisions involves determining the level of complexity needed for the system. A simple registry may operate with minimal automation, serving as a basic tool for recording emissions and compliance data. In contrast, a more sophisticated registry must handle high transaction volumes, integrate with multiple databases, and provide automated verification and security measures.

- **Level 1: Basic Registry:** This level includes minimal user interaction and basic accounting tools. There is no online user access, and all registry operations are handled manually by an administrator. Reports are generated periodically and published for oversight. This level is suitable for small-scale programs with low transaction volumes and minimal risk exposure.
- **Level 2: Semi-Automated Registry:** This registry level incorporates online access for users, enabling them to check account balances and submit requests, though final validation is still performed manually by the administrator. The system may have limited interoperability with other platforms. It is suitable for moderately sized carbon markets with medium transaction volumes and a need for enhanced transparency.
- **Level 3: Fully Automated Registry:** This level features complete automation, with seamless integration into other trading and emissions reporting systems. Transactions are processed instantly without manual administrator intervention. It is designed for large-scale emissions trading systems where high transaction volumes require a sophisticated and secure infrastructure to manage compliance and market risks.

Another critical factor is the market scope and connectivity of the registry. Some systems may operate as standalone national platforms, while others must integrate with international emissions trading markets. These registries connect multiple jurisdictions, allowing the transfer of emissions allowances between different systems. This model enables cross-border trading,

enhances market liquidity, and provides greater flexibility for compliance entities. The California-Quebec linked ETS, managed through the Compliance Instrument Tracking System Service (CITSS), is an example of a successfully linked registry. This requires compatibility with greenhouse gas inventories and other environmental data systems to ensure efficient data exchange and compliance tracking. However, linked registries require harmonization of market rules, legal structures, and regulatory frameworks to ensure smooth interoperability.

Finally, financial sustainability is a key consideration, with funding sources ranging from government budgets to transaction fees imposed on registry users.

The challenge for the Brazilian government is to develop a registry which meets the requirements set out in the Law, and delivers on the policy considerations outlined above. Consideration should also be given to the procurement of the Central Registry. The selection of an ETS registry procurement approach depends on several factors, including cost, security, functionality, and the degree of control required by the regulatory authority. The primary procurement options include:

- **Developing a Custom Registry:** This approach involves designing and building a registry system from scratch to meet specific ETS requirements. It offers maximum flexibility, data sovereignty, and tailored functionalities but requires significant investment in time, financial resources, and technical expertise. Jurisdictions such as the European Union have opted for this solution.
- **Adapting an Existing Registry:** Some ETS programs choose to modify an existing registry solution to align with their policy and technical needs. This approach reduces development costs and implementation time while allowing for some degree of customization. The New Zealand Emissions Unit Register (NZEUR), for example, was adapted from pre-existing registry frameworks. In this case of Brazil this could entail adjusting existing registries, such as the Programa Nacional de Relato de Gases de Efeito Estufa (PNR-GEE) initiative for mandatory MRV led by the Ministry of Economy and the MMA, for the reporting functionality.
- **Software as a Service (SaaS):** Under this model, a third-party provider manages and hosts the registry system, offering access through a subscription or licensing agreement. SaaS solutions can be rapidly deployed and reduce administrative burdens, but they may limit regulatory control over system modifications and data management.
- **Shared Registry Solutions:** In some cases, multiple jurisdictions share a common registry platform to reduce costs and enhance interoperability. The Western Climate Initiative (WCI), covering California and Quebec, and the Consolidated System of European Union Registries (CSEUR) are notable examples of this approach.

Timeline considerations

The implementation of the SBCE Central Registry in Brazil requires a structured approach balancing regulatory compliance, technical capabilities, and market readiness. The development of the registry can be mapped into the following timeline:

Stage I: Planning and Regulatory Framework (Year 1-2)

Establish governance, define regulatory guidelines, and assess procurement options. Conduct feasibility studies, engage stakeholders, and secure funding to support registry development.

The registry should be defined and specified during this phase to ensure a smooth transition into implementation.

Stage II: Development MRV functionalities (Year 3)

Develop and integrate core functionalities with MRV systems. Conduct pilot testing. The registry must be operational in time for testing during Stage II, Preparing for Emissions Reporting, allowing for a robust system ready for mandatory emissions reporting in Stage III.

Stage III: Implementation and Market Integration (Year 4-5)

Launch the registry, mandate registration for regulated entities. Scale up operations, monitor performance. Development expanding to include trading capabilities as needed.

Stage IV and beyond: Optimization and Expansion (Beyond Year 6)

Enhance registry capabilities, align policies with evolving market needs, and incorporate automation. Expand functionalities to support international standards.

Responsible agency

Management Body

Table 27 - Policy choices and options Activity 1 BB 4.4

Activity	Policy Options	Jurisdiction	Description
Activity 1. Specify and develop the SBCE Central Registry	**A1 Option A**: Develop a new bespoke registry for Brazil	• United Kingdom	The UK developed its own software at the outset of its emissions trading scheme, called the Greenhouse Gases Registry for Emissions Trading Arrangements (GRETA). GRETA was also used by EU member states for the EU ETS[148].
	A1 Option B: Share or adapt a registry developed by another jurisdiction or other organisation	• Mexico • Chile • UNDP	Germany provided technical support and software to assist Mexico in developing its *Registro Nacional de Emisiones* (RENE)[149] Chile adapted an existing registry through the World Bank's PMR programme to support the implementation of its carbon tax[150] The UNDP has made its National Carbon Registry available as an accredited digital public good[151]
	A1 Option C: To outsource individual or all registry functions to an external operator.	• No jurisdictions identified	

[148] Department for the Environment, Food and Rural Affairs, 2004
[149] GIZ 2018
[150] World Bank, 2020
[151] UNDP, 2023

Summary Table 19 - Registry

Building Block 19: Registry					
Activity	**Key outputs**	**Lead agency**	**Timeline**	**Options**	**International examples**
A1. Specify and develop the SBCE Central Registry	• Technical specification of the SBCE Central Registry • Functioning SBCE Central Registry	Management Body	Stage I – specify registry Stage II – develop and implement registry	A1 Option A: Develop a new bespoke registry for Brazil	United Kingdom
				A1 Option B: Share or adapt a registry developed by another jurisdiction or other organisation	Mexico Chile
				A1 Option C: To outsource individual or all registry functions to an external operator.	

BB20. Price stabilization mechanisms

Operation.Stabilization.1 - Define conditions under which price stabilization mechanisms should be used

Price stabilization mechanisms can help support confidence and regulatory certainty in emissions trading systems by providing guard rails on the prices or the supply of allowances. This activity seeks to define the conditions under which price stabilization mechanisms could be used in the SBCE.

SBCE Law

The Law sets out that:

- Price stabilization mechanisms (PSMs) allow the Management Body to intervene in the SBCE asset market to reduce price volatility (Art. 2 XVII)
- The Management Body is responsible for defining and implementing PSMs for the assets that make up the SBCE (Art. 8 XVI)
- The National Allocation Plan (NAP) will establish provisions for managing and operating PSMs to ensure economic incentives for reducing emissions or removing GHGs (Art. 21 V)

Policy considerations

Unlike in tax mechanisms, in market creation mechanisms like ETSs, the carbon price is not known in advance and will be the result of demand and supply factors. So, long-term stability

and a degree of price predictability in the market for allowances in the SBCE will support businesses to make informed decisions regarding their operations and investments in low-carbon technologies to reduce emissions. In practice, this means avoiding excessive price volatility (i.e. allowance prices dropping too low or rising too high) by adjusting the allowance supply. Such adjustments should be based on clear and predetermined rules, rather than government discretion.[152]

In practice, the use of PSMs can be justified in certain scenarios. Unanticipated macroeconomic and technology shocks, interference from other climate policy instruments, and imperfect or asymmetric information can lead to an oversupply of allowances, resulting in excessively low prices that weaken the incentive to reduce emissions. Conversely, an undersupply of allowances can drive prices too high, imposing burdensome compliance costs on regulated entities and potentially threatening their viability. In both situations, the integrity of the system is at risk, making the implementation of a PSM necessary.[153]

Before deciding on the best mechanism for Brazil to maintain price stability, it is critical to get an idea of the prices and allowance volume anticipated in the scheme to meet its objectives.[154]

This assessment should draw on existing analysis of the SBCE's role in reducing emissions, including economic models, to establish a projected price path for allowances based on the expected emissions reductions over time. Defining the price pathway as a range is advisable to accommodate uncertainties inherent in this type of assessment.

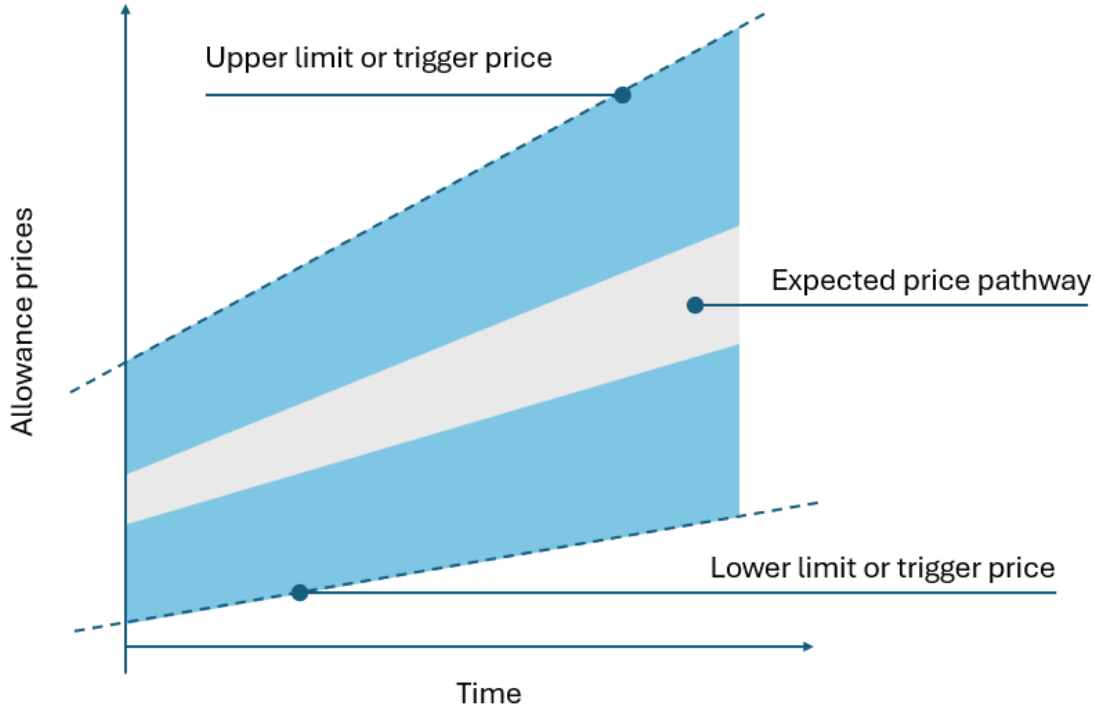
Once the expected price pathway is identified, upper and lower limits or triggers must be set. There should be a margin between the expected prices and the trigger prices, to ensure that the control mechanisms are rarely called into action. Upper limits are typically defined based on economic impact and political economy, with economic assessments providing essential information, although the final decision is ultimately political. Lower limits, on the other hand, are defined according to the emissions reductions the system needs to deliver over time, again based on economic modelling.

Another option is quantity-triggered mechanisms, where the number of allowances in circulation are tracked. If the circulating allowances exceed a trigger threshold, allowances are removed from the auction to reduce supply. If the allowances are below a low trigger threshold, additional allowances can be auctioned to increase supply. The design of quantity-triggered mechanisms depends on an assessment of when the market is over- and under supplied.

The figure below illustrates the upper limits, expected price pathway, and the lower limits.

[152] ICAP, 2024b
[153] PMR ICAP, 2021
[154] PMR ICAP, 2021

Figure 15 - Illustration of upper limits, expected price pathway, and lower limits in emissions trading



Source: made my authors

Timeline considerations

The PSMs would ideally be in place before allowances are allocated to compliance entities and can be traded. This would mean establishing the PSMs during Stage III of the SBCE.

Responsible agency

Management Body.

Table 28 - Policy choices and options Operation.Stabilization.1

Activity	Policy Options	Jurisdiction	Description[155]
Operation.Stabilization.1 - Define conditions under which price stabilization mechanisms should be used	**Option A**: Allowance prices excessively high	Canada	Alternative option for compliance at a federally fixed rate if allowance prices exceed a threshold
		New Zealand	Additional allowances made available to the market if auction prices exceed a threshold
		European Union	Additional allowances made available at the discretion of the regulator if allowance prices are deemed excessively high. If entities are not able to meet obligations after all additional allowances have been made available, they may utilize an alternative compliance option based on a fixed price.
		Washington	Additional allowances are made available to the market if auction prices exceed a threshold
		Canada	Alternative options for compliance (always available)
	Option B: Allowance prices excessively low	New Zealand	Allowances are only sold at auction if a reserve price is met
		Washington	Allowances are only sold at auction if a reserve price is met
	Option C: Allowance holdings or supply are excessively high	New Zealand	Allowances which remain unsold at auction after one year are cancelled
		European Union	Allowances are removed from the auction volume when the total number of allowances in circulation is excessively high
		Canada	Allowances are removed from the auction volume if the auction price settles too low.
	Option D: Allowance holdings or supply are excessively low	European Union	Allowances are added to auction volumes when the total number of allowances in circulation is excessively low

[155] ICAP, 2024b

Operation.Stabilization.2 - Agree price stabilization mechanisms

SBCE Law

Art. 8 XVI tasks the Management Body with the definition and implementation of PSMs for assets traded in the SBCE.

Policy considerations

The previous activity sought to define the conditions under which stability mechanisms should be used in the SBCE. Having decided those conditions, it is then necessary to determine the most appropriate mechanisms. In a broad sense, the options are [156]:

- **Price ceilings and stability reserves** represent a price above which allowances will not be sold. They are typically applied during unit auctions, whereby all units are released if the bid price hits a threshold. These can be supported by stability reserves, which represent an additional quantity of allowances held by the government and released if the market price crosses a threshold price. They seek to moderate prices by increasing supply.
- **Alternative compliance options**. This refers to cases where compliance entities are presented with options other than surrendering allowances when meeting their obligations. These can take the form of fixed-rate payments into a dedicated fund, or cash payment direct to the jurisdiction. These options regulate prices by reducing demand for allowances as prices approach or exceed the fixed-price option.
- **Price floors** represent a price below which allowances will not be sold. They are often implemented as a reserve price at auction with the unsold allowances placed in a dedicated reserve or cancelled permanently. Auction reserve prices are applied to allowances sold by the government and do not restrict prices on the secondary market.

We recommend an assessment be made of this range of options, in order to identify the most appropriate options for the Brazilian context.

Timeline considerations

The PSMs would ideally be in place before allowances are allocated to compliance entities and can be traded. This would mean establishing PSMs during Stage III of the SBCE.

Responsible agency

Management body

[156] ICAP, 2024b

Table 29 - Policy choices and options Operation.Stabilization.2

Activity	Policy Options	Jurisdiction	Description[157]
Operation.Stabilization.2 - Agree stabilisation mechanisms	**Option A**: Price ceilings and stability reserves	**European Union**	Market Stability Reserve. The MSR adjusts auction volumes according to the number of allowances in circulation (TNAC). If TNAC is above a threshold, allowances are removed from the auction volume and placed in the MSR. If the TNAC is below a threshold, units are added to the auction volume from the MSR. If the MSR allowance holding reaches an upper threshold, allowances above the threshold are cancelled. Cost Containment Reserve: The CCR can be used on a discretionary basis. It has not yet been utilized.
		New Zealand	Cost Containment Reserve (CCR, operates as a market stability reserve): If a predetermined price is reached at auction, a specified quantity of allowances is released from the CCR. Allowances which remain unsold after a year are cancelled.
		Washington	Allowance Price Containment Reserve (APCR): Additional units are auctioned from the APCR in the event that the settlement price in the previous auction meets a price threshold. APCR units can only be used for compliance and not traded. Emissions Containment Reserve (ECR). Up to 10% of allowances can be withheld from an auction and placed in the ECR if the auction price settles below the ECR trigger price.
	Option B: Alternative compliance options	**Canada**	Excess Emissions Charge compliance option (operates as an alternative compliance option). Entities have the option to meet compliance obligations by making Excess Emissions Charge payments at the rate determined by the Canadian government. This acts as a ceiling on allowance prices.
		Washington	Price Ceiling Units. Price ceiling units are made available if there are no units available in the APCR, and entities do not hold sufficient allowances to meet their obligations. Price ceiling units are sold at a fixed price which increases year on year.
	Option C: Price floors	**New Zealand**	Price floor. The price floor operates as a reserve price at auction, representing a minimum accepted bid.
		Washington	Auction Floor Price. The Auction Floor Price operates as a reserve price at auction.

[157] ICAP, 2024b

Summary Table 20 - Price stabilization mechanisms

Building Block 20: Price stabilization mechanisms					
Activity	**Key outputs**	**Lead agency**	**Time line**	**Options**	**International examples**
Operation.Stabilization.2 - Define conditions under which price stabilization mechanisms should be used	• Indicative price path for allowances • Trigger levels for excessively low or excessively high prices • Trigger conditions for excessively constrained or excessively abundant supply	Management Body	Stage III	A1 Option A: Allowance prices excessively high	• Canada • New Zealand • European Union • Washington • Canada
				A1 Option B: Allowance prices excessively low	• New Zealand • Washington
				A1 Option C: Allowance holdings or supply are excessively high	• New Zealand • European Union • Canada
				A1 Option D: Allowance holdings or supply are excessively low	• European Union
Operation.Stabilization.2 - Agree stabilisation mechanisms	• Preferred options for stabilization mechanisms	Management Body	Stage III	A1 Option A: Price ceilings and stability reserves	• European Union • New Zealand • Washington
				A1 Option B: Alternative compliance options	• Canada • Washington
				A1 Option C: Price floors	• New Zealand • Washington

6. Annexes

Annex I – Foundations of the SBCE

Brazil's climate policy context

Brazil's greenhouse gas emissions profile is distinct compared to many other countries due to the significant contribution of forestry and agriculture, which account for 52% and 24% of its total emissions respectively. This is in contrast to typical national emissions profiles where energy use for electricity, heating, cooling, transport, and industry dominates emissions. In 2020, Brazil's gross GHG emissions were approx. 2.16 $GtCO_2e$. However, the country's natural ecosystems removed about 0.6 $GtCO_2$, resulting in net emissions of 1.52 $GtCO_2e$. Brazil's energy sector produces notably few emissions, with 46% of its total energy supply and 82% of its electricity generated from renewable sources as of 2019.[158]

Brazil's response to the challenge presented by this unique profile has been ambitious and comprehensive. In 2007, the National Plan on Climate Change was published, and is now being reviewed within the framework of the Temporary Working Group on Mitigation – GTT Mitigation.[159] The National Policy on Climate Change (PNMC) Law was enacted in 2009 (Law nº 12,187/2009 and serves as the country's principal legal framework for addressing climate change through mitigation and adaptation strategies. It sets out objectives for efficiency improvements, renewable energy generation, sustainable biofuels use, reductions in deforestation rates, and minimizing socio-economic costs of climate change. Among its lines of action, the PNMC calls for stimulating the development of a Brazilian market for emissions to reduce anthropogenic GHG emissions from various sources.[160]

The ETP promotes a shift toward a sustainable development model that supports inclusive economic growth and improved quality of life, especially for vulnerable populations. Deployed through a multilevel governance structure, the plan operates via a broad set of instruments: financial, fiscal, regulatory, administrative and operational, as well as monitoring and enforcement. The ETP addresses the systemic impacts of the current resource-intensive model, including climate-related disasters and ecosystem degradation. The SBCE is considered a key implementation instrument for the Plan.[161]

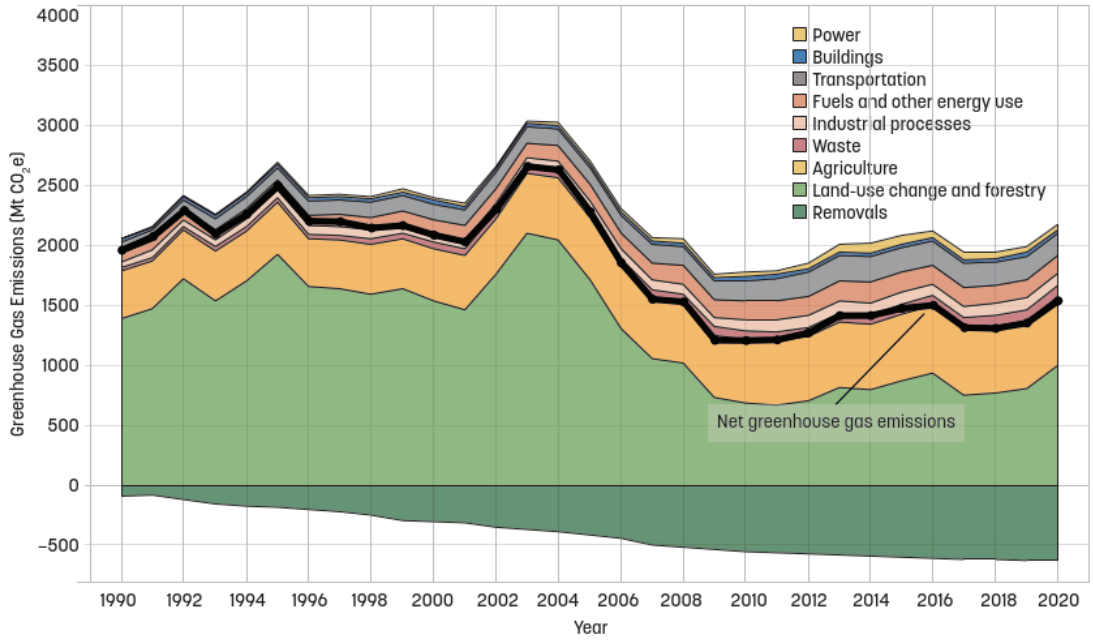
Brazil's nationally determined contribution (NDC) was updated in 2024 considering the Ecological Transformation Plan (ETP) and pulls together the main headlines of its current climate change policy. The NDC establishes economy-wide targets to reduce emissions to[162]:

- 1.32 $GtCO_2e$ by 2025, consistent with a 48% reduction on 2005 levels; and
- 1.20 $GtCO_2e$ by 2030, consistent with a 53% reduction on 2005 levels.
- The updated NDC introduced a new 2035 target of reducing emissions between 59% and 67% below 2005 levels.

[158] World Bank, 2023.
[159] Ibid.
[160] Campos de Andrade, 2022.
[161] Governo Federal, 2025
[162] Federative Republic of Brazil, 2024

- The NDC also commits Brazil to achieve climate neutrality by 2050.[163]
- Brazil's updated 2024 NDC promotes sustainable, inclusive economic development by leveraging biodiversity, renewable energy, and regional potential. In the same spirit, ETP (Decree 12.223/2024) formalized commitments across Brazil's executive, legislative and judicial branches.[164]

Figure 16 Sectoral breakdown of GHG emissions in Brazil 1990-2020.



Source: World Bank staff calculations, based on SEEG data[45]

The NDC delineates the main sectoral approaches to achieving the national targets. In the forestry sector, it calls for the enforcement of the Forest Code and the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm), which aims for zero deforestation by 2030.[165] To support this, the Permanent Interministerial Commission for the Prevention and Control of Deforestation was established by Decree 11,367/2023 to coordinate interministerial efforts to curb deforestation, promote the reforestation of 12 million hectares by 2030, and enhance sustainable forest management.[166]

The NDC also highlights specific actions in the land-use sector, including the Sustainable Development Plan for Low Carbon Agriculture (RenovaAgro), which replaces the previous Plan ABC+. This plan advocates for recovering degraded lands, employing nitrogen-fixation

[163] This target was defined through modeling using the BLUES (Brazil Land-Use and Energy System) model, ensuring cost-effectiveness and feasibility across sectors..
[164] Federative Republic of Brazil, 2024a

[165] World Bank, 2023.
[166] Federative Republic of Brazil, 2024.

projects, increasing soil carbon storage, promoting no-till farming, and integrating forestry, crops, and livestock through agroforestry practices.[167]

Brazil aims to raise the share of sustainable biofuels to about 18% and renewables to about 45% of its energy mix by 2030, along with a 10% improvement in electricity sector efficiency. As of 2024, renewables represent 49.1% of the energy mix and 89.2% of the electricity mix. The National Energy Plan (PNE 2050) acknowledges the necessity to increase the energy supply to meet an escalating demand, even when accounting expected increase in energy efficiency over the coming decades.[168] Despite progress in integrating solar and wind power through mechanisms such as variable renewable electricity auctions (VER) and fiscal incentives[169], Brazil continues to expand its fossil fuel industries and is positioned to become a leading oil producer, which will increase the challenge of meeting its NDC and maintaining its commitment to the 1.5°C target.[170]

The transportation sector is another focus, the National Logistics Plan (PNL) and are expected to benefit from [biofuels, electrification, and hydrogen], with expanded infrastructure and clean transport strategies such as the "Green Mobility-Mover" program.[171] The NDC recognizes the importance of promoting efficiency improvements, enhanced infrastructure, and better public transit services. The RenovaBio program has been highlighted for boosting biofuel production by leveraging market incentives for decarbonization.[172]

Climate governance in Brazil was reinforced by Decree No. 11.550, which established a permanent Interministerial Committee on Climate Change (CIM) in June 2023. The CIM is tasked with coordinating governmental actions under the UN Framework Convention on Climate Change, guiding policy development across sectors affecting GHG emissions, and overseeing the country's climate strategies, including financing and policy updates.[173] The CIM is now supported by a Scientific Advisory Board and the new Climate Plan, which includes National Adaptation and Mitigation Strategies and a transversal strategy addressing just transition, socio-environmental impacts, and transparency.

Independent observers highlight several areas for focus to improve Brazil's efforts to align with the 1.5°C limit.[174] These include addressing financial constraints, developing specific emissions limits and targets across various sectors, and setting out clear strategies for meeting its emissions reduction objectives. The World Bank's 2023 *Brazil Country Climate and Development Report*, identifies four key recommendations for Brazil's achievement of its climate commitments. To reduce its exposure and vulnerability to climate change risks, Brazil should adopt a multi-dimensional strategy encompassing structural reforms, economy-wide policies, sectoral investments, and financial mobilization. Structural reforms aimed at boosting productivity and efficiency can transition Brazil to a growth path that lessens environmental pressures. These reforms need to be supplemented by economy-wide policies that incentivize

[167] Federative Republic of Brazil, 2024c.
[168] Ministerio de Minas e energía, 2020.
[169] World Bank, 2023.
[170] SEI, 2023.
[171] Federative Republic of Brazil, 2024.
[172] World Bank, 2023.
[173] Federative Republic of Brasil, 2023b.
[174] CCPI, 2024.

households and businesses towards low-carbon and resilient practices. Sector-specific interventions, particularly in land use and the power sector, are crucial to capture targeted opportunities, necessitating appropriate regulations, policies, and investments. Finally, ensuring these investments are financeable requires mobilizing public and private capital directed at priority areas.[175]

SBCE Policy Drivers

Emissions Trading Systems (ETS) serve as a critical instrument in the global effort to combat climate change. The recently released International Carbon Action Partnership (ICAP) Emissions Trading Worldwide Status Report reported 36 operational ETSs worldwide, with an additional 14 jurisdictions, including Brazil, in the process of developing their own ETS frameworks.[176] In general terms, carbon pricing policies, including ETSs, work by integrating the social costs of carbon emissions into economic decision-making. This integration encourages businesses to reduce their greenhouse gas (GHG) emissions in an economically efficient manner. ETSs align economic activities with emission reduction targets, coupling decarbonization efforts with economic development. Below are the main policy considerations for implementing ETSs:

1 **ETSs drive emissions reductions**: An ETS targets specific reductions in GHG, with evidence showing that existing systems have effectively driven down emissions, even when accounting for external factors.[177]
2 **Clear reduction paths**: The quantity-based approach of ETSs ensures that emissions stay within or below the cap set for covered sectors. Jurisdictions with an ETS typically implement progressively declining caps, when these are credible and aligned with national climate targets, they delineate a transparent path for mid- to long-term emission reductions.[178]
3 **Cost-effective abatement**: Carbon pricing facilitates emissions reductions by aligning the marginal costs of abatement with the carbon price. This approach decentralizes decision-making, effectively bridging the information gap between the government and polluters.[179]
4 **Flexibility**: An ETS provides firms with the flexibility to decide where and when to reduce emissions, prioritizing cheaper abatement options first. This flexibility allows participants to undertake emission reductions when these are most economically viable and adjust to changing economic conditions.
5 **Supports low-carbon development**: By decoupling emissions from economic growth, ETSs facilitate the transition to a low-carbon economy and supports countries in moving away from carbon-intensive development paths with no detectable contractions in economic activity.[180] Evidence shows that countries with carbon prices on average have annual carbon dioxide emissions growth rates that are about two percentage points lower than countries without a carbon price. [181]

[175] World Bank, 2023.pp, 21
[176] ICAP, 2024
[177] See Murray, B. and Maniloff, P., 2015; Bel, G. and Joseph, S., 2014.and Marion Leroutier, 2022.
[178] Alexander Eden, et.al 2018
[179] OECD, 2023.
[180] Jonathan Colmer, et.al., 2024
[181] R., Burke, 2020

6 **Promotes innovation**: An ETS sets a price on carbon emissions, creating financial incentives for investments in low-carbon technologies. This pricing mechanism makes green technologies more competitive against fossil-based alternatives and drives innovation, with evidence showing a surge in low-carbon patenting among regulated firms under the European Union ETS compared with non-regulated firms.[182]

7 **Revenue generation**: ETSs also generate government revenue through the auctioning of allowances. ICAP's Emissions Trading Worldwide Status Report (ICAP, 2024) highlights a record USD 74 Billion raised from carbon allowance auction sales in 2023 worldwide. This additional funding stream can be utilized to further climate action, reduce other taxes, or provide compensation to low-income households and groups adversely affected by environmental policies. [183]

8 **Co-benefits**. ETSs can have positive synergies with public health, energy security, job creation and land-use change objectives.

Previous technical work for Brazil under the PMR

The 2020 Partnership for Market Readiness (PMR) Brazil Project, led jointly by the Ministry of Economy and the World Bank, aimed to support the decision-making process on whether to adopt carbon pricing in Brazil. It did this by analyzing alternative suites of climate policy instruments to identify which policy package would generate the most favourable socioeconomic impacts while achieving the NDC.

The PMR project concluded that it would be feasible and beneficial to implement an ETS in Brazil. Impacts on key macroeconomic variables under different modelling scenarios suggest higher GDP growth, investment rates, and poverty reduction with the implementation of an ETS compared to other policy packages.

The PMR also suggested the following policy considerations:

- Gradualism to assist in implementation (2 to 5 years). Simplicity of design for first Stage and focus on capacity and institutional building.
- Use of flexibility and competitiveness mechanisms to prevent negative impacts such as higher inflation in high-price scenarios.
- Supply of offsets of forest origin could unlock investment and expand efficiency of mitigation policy.
- Use of stability mechanisms, exemption of exported products, and free allocation for trade exposed industries could reduce negative impacts.

The PMR work was developed through three main technical components:

- Component 1: Preparing sectoral studies and proposing design options for carbon pricing instruments.
- Component 2: Impact Assessment comprised of economic modelling and a Regulatory Impact Assessment (RIA).
- Component 3: Stakeholder engagement, comprised of dissemination of the studies developed under components 1 and 2, and on stakeholder consultation.

[182] Calel, R. et.al.,2016.
[183] IPCC, 2023

- A transversal component included a series of legal and institutional analyses on the implementation and development of required regulation.

Building on the PMR outcomes, Brazil has received bridge support under the Just In Time (JIT) window of the Partnership for Market Implementation (PMI). Through this initiative, the World Bank has supported the development of key studies and activities related to the SBCE's approval and implementation, including the support in this implementation roadmap.

The SBCE in the international carbon pricing environment

The Law provides for the development of a compliance emissions trading system, while establishing a framework for carbon credit use under SBCE compliance and international trade. The roadmap is focussed on the elements required to implement the ETS in Brazil. It uses the name SBCE to refer to the ETS including its overlap with the carbon credits (CRVEs) used for SBCE compliance

A broader carbon pricing environment provides important context for the development of the SBCE. This is made up of two key areas:

1. Markets for the international or domestic trade of carbon credits. These carbon credits are often used to monetize reductions in emissions so that they can be traded, either on the voluntary market or for compliance purposes.
2. International carbon tariffs, including the EU CBAM. These systems impose an emissions price on goods imported to jurisdictions where a carbon price is in place and seek to equalize the emissions costs for imported and domestically produced goods.

Carbon credits and the SBCE

Brazil has gained substantial experience with international carbon markets, mainly through a long involvement with the Clean Development Mechanism (CDM) established under the Kyoto Protocol. As of April 30th, 2024, Brazil is the third-largest host country in issued Certified Emission Reductions (CERs) for registered CDM project activities, with more than 200 million issued credits between 2007 and 2024.[184] Brazil is also a key player in the voluntary carbon market, as the second-largest supplier of nature-based solutions (NBS) credits in 2023.[185] Brazil will likely continue having a significant role in both markets.

The SBCE provides for two main interactions with carbon crediting markets and international cooperative mechanisms:

- Through trading and use for compliance obligations, i.e. as offsets, in the system. The Law envisages this happening through verified credits called Certificates of Verified Emission Reduction or Removal (CRVE).
- Through the sale of CRVEs and SBCE allowances (CBEs) to other jurisdictions or firms under the mechanisms envisaged by Art. 6 of the Paris Agreement.

The specific policy considerations for the use of carbon credits under the SBCE including the gatekeeping function focussed on ensuring only reputable credits are allowed into the system are part of *Building Block 2.0 BB10. Integration of CRVEs to the SBCE.* This block considers the

[184] CDM.
[185] Climate focus, 2024.

role that carbon credits play in meeting the objectives of the SBCE. It does not consider the establishment of crediting mechanisms and institutions required for the issuance of credits.

Allowing credits into the SBCE will effectively increase the quantity of gross emissions that can be produced within the cap of the scheme and should be carefully considered against its overall emissions reduction objectives. Selling SBCE BCEs and CRVEs under the Art. 6 mechanism would reduce the quantity of emissions that could be produced within the cap and should equally be carefully considered. Sale through Art. 6 requires each country party to the agreement to ensure that the transfer of the mitigation outcome is compliant with the rules and guidelines established by the Conference of the Parties, including the establishment of a process to authorize the use of Internationally Transferred Mitigation Outcomes (ITMOs), as well as to adjust their national inventories to reflect the mitigation transfer to avoid double counting. This accounting process is called corresponding adjustment.

International carbon tariffs and the European Union Carbon Border Adjustment Mechanism (EUCBAM)

By proactively engaging in carbon pricing, Brazil not only aligns with global climate policy trends but also protects its export competitiveness by anticipating international market shifts towards more stringent environmental standards. International carbon tariffs are mechanisms designed to impose costs on the carbon emissions associated with imported goods. These tariffs aim to level the playing field between domestic producers, who may be subject to stringent environmental regulations and carbon pricing, and foreign producers, who might operate under less strict standards. The goal is to prevent "carbon leakage," where businesses relocate to countries with laxer emissions regulations, undermining global efforts to combat climate. Countries like the UK and the US, while not yet implementing an international carbon tariff, are actively exploring options and participating in international discussions to address carbon leakage and promote fair and effective climate action.

The European Union has implemented the first international carbon tariff, The EU's Carbon Border Adjustment Mechanism (CBAM) has been designed to level the playing field within the domestic European market between European industries and importers by imposing a charge on the carbon content of imported goods. The aim is to replace free allocation of allowances in the EU ETS by CBAM pricing on imported goods. This initiative aims to mirror the domestic carbon price put in place through the EU ETS, discourage the relocation of production to countries with laxer emission standards (thereby preventing "carbon leakage"), and stimulate global reduction in carbon emissions.

In practice, products entering the EU will be assessed for their carbon footprint, with importers required to purchase certificates matching the emissions of these goods unless offset by existing carbon pricing in the country of origin. The PMR project identified several of the export products covered by CBAM which may be important to Brazil; aluminium, cement, pig iron and steel. Any carbon price paid under the SBCE will reduce compliance costs under CBAM.[186]

[186] ICC Brazil, 2023,

Annex II – ICVCM Carbon credit assessment framework

Table A 1CCP Assessment framework

Part I	Requirements for carbon-crediting programs (crediting mechanism level assessment)	
A	Governance	• Effective governance requirements
		• Public engagement, consultation and grievances
		• Effective registries (retirement and addressing erroneous issuance)
		• Information requirements
		• Robust independent third-party validation and verification requirements
B	Emissions impact	• Methodology and approval process
		• Requirements for quantifying GHG emission reductions or removals
		• Ex-post determination of emission reductions or removals
		• No double issuance (double registration)
		• No double use requirements
C	Sustainable development benefits and safeguards	• Assessment and management of environmental and social risks
		• Labour rights and working conditions
		• Resource efficiency and pollution prevention
		• Land acquisition and involuntary resettlement
		• Biodiversity conservation and sustainable management of living natural resources
		• Indigenous Peoples, Local Communities, and cultural heritage
		• Respect for human rights, stakeholder engagement
		• Gender equality
		• Robust benefit-sharing
		• Cancun Safeguards
		• Ensuring positive SDG impacts
Part II	**Requirements relating to (project) categories (methodology-level)**	
B Emissions impact	Additionality	• Additionality demonstration
		• Existing host country legal requirements (legal additionality)
		• Consideration of carbon credits (prior consideration)

		• Additionality approaches: Investment analysis, Barrier analysis or Market penetration/common practice
		• Additionality approaches: Standardised approaches
		• Additionality for Jurisdictional REDD+: Demonstration of new mitigation actions or enhanced implementation of ongoing mitigation
		• Jurisdictional REDD+: Consideration of carbon credits
	Permanence	• Categories to which permanence requirements apply
		• Compensation for reversals
		• Monitoring and compensation period
		• Compensation mechanism
		• Jurisdictional REDD+ Permanence
	Robust quantification	• Robust quantification of emission reductions or removals
		• Boundary for the mitigation activity
		• Determination of the baseline scenario and quantification of baseline emissions or removals
		• Quantification of emissions or removals from the mitigation activity
		• Quantification of emissions or removals from the mitigation activity
		• Attributability of the quantified emission reductions or removals to the mitigation activity
		• Aggregate duration of all crediting periods
		• Monitoring approaches
	No double-counting	No double issuance (overlapping claims)
		No double claiming with mandatory domestic mitigation schemes
		No double claiming of GHG mitigation arising from other environmental credits
C Sustainable development benefits and safeguards	Safeguards	Safeguards
		Sustainable Development benefits
	Contribution to net zero transition	Categories incompatible with contribution to net zero transition
		Contribution to net zero transition

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