Carbon Market Opportunities and Article 6

03 September, Baku

Agenda

Time	Session Title
09:00–09:10	Welcome Remarks Mr. Virender Kumar Duggal, Principal Climate Change Specialist, ADB
09:10–09:50	Session 1 –– Carbon Markets in the Context of Climate Policy Architecture
09:50–10:30	Session 2 –– Landscape of Carbon Market Opportunities
10:30–10:50	Coffee/Tea Break
10:50–12:05	Session 3 –– Deep Dive on Article 6 of the Paris Agreement

Session 1 – Carbon Markets in the Context of Climate Policy Architecture

What is Carbon Pricing?

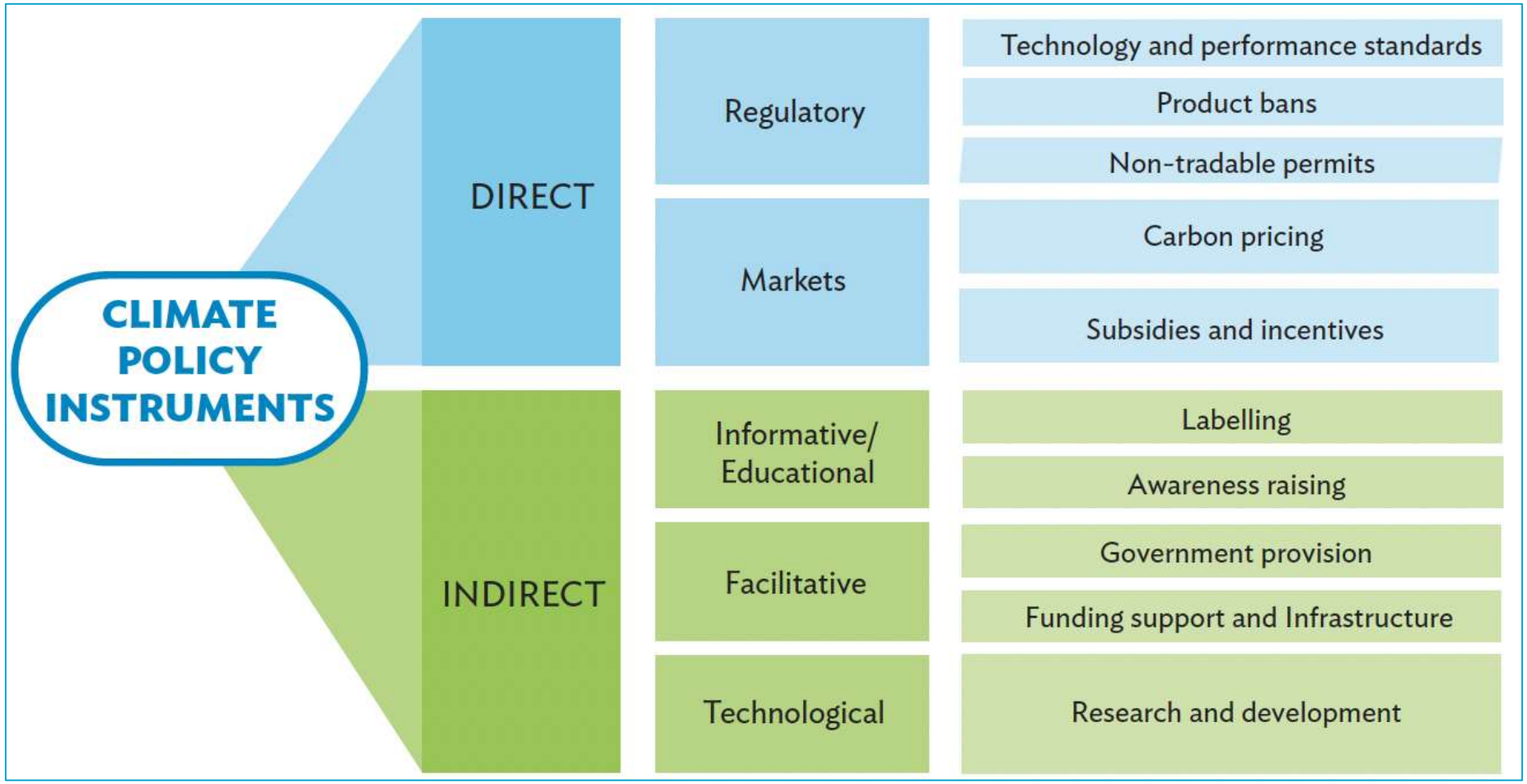
- Carbon pricing **puts a price on carbon dioxide** and/or other greenhouse gas emissions.
- **Indirect or implicit carbon prices** can be generated through instruments that affect emissions through a proxy variable, such as taxes on fuel use based on carbon content

- By making GHG emissions more expensive, economic actors are incentivized to **account for the costs** of their emissions when making commercial decisions.
- Businesses will treat these costs like any other costs and **aim to reduce them** to increase profit margins and/or gain market share.

Carbon Pricing in the Broader Climate Policy Architecture

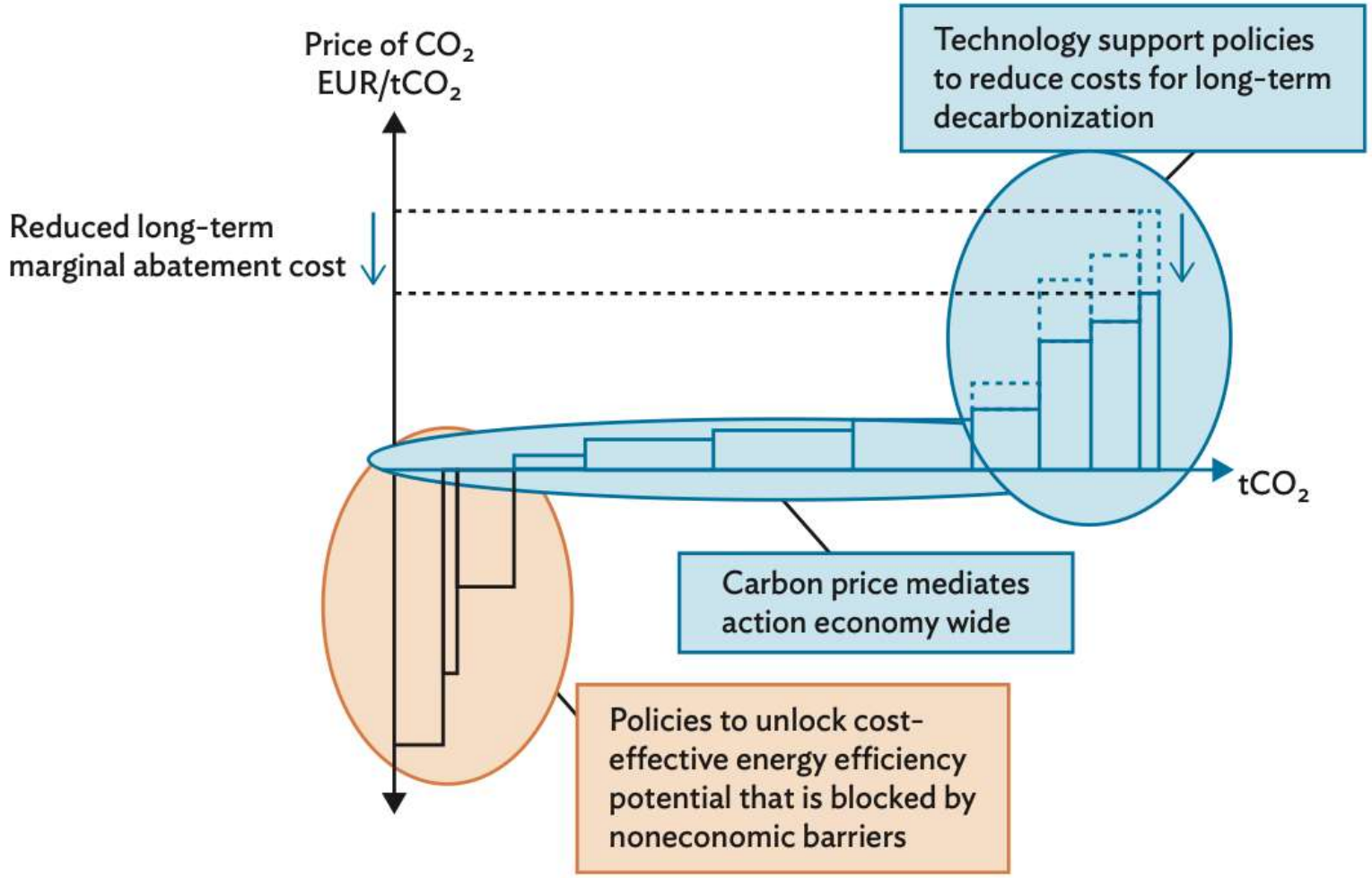
- Carbon pricing is an **integral element** in the overall climate policy architecture
- Carbon pricing can be an effective **green fiscal policy instrument** to facilitate government spending and taxation to influence **green growth**
- To ensure a key role of carbon pricing, policy makers should reflect on what it is designed for and expected to do and design a **policy mix**

Carbon Pricing in the Broader Climate Policy Architecture (Source: Asian Development Bank)



Instrument Choice – Do You Really Need an Instrument?

Schematic of Policy Mix for Addressing Climate Change Mitigation Effectively



CO_2 = carbon dioxide, EUR = euro, t = ton.

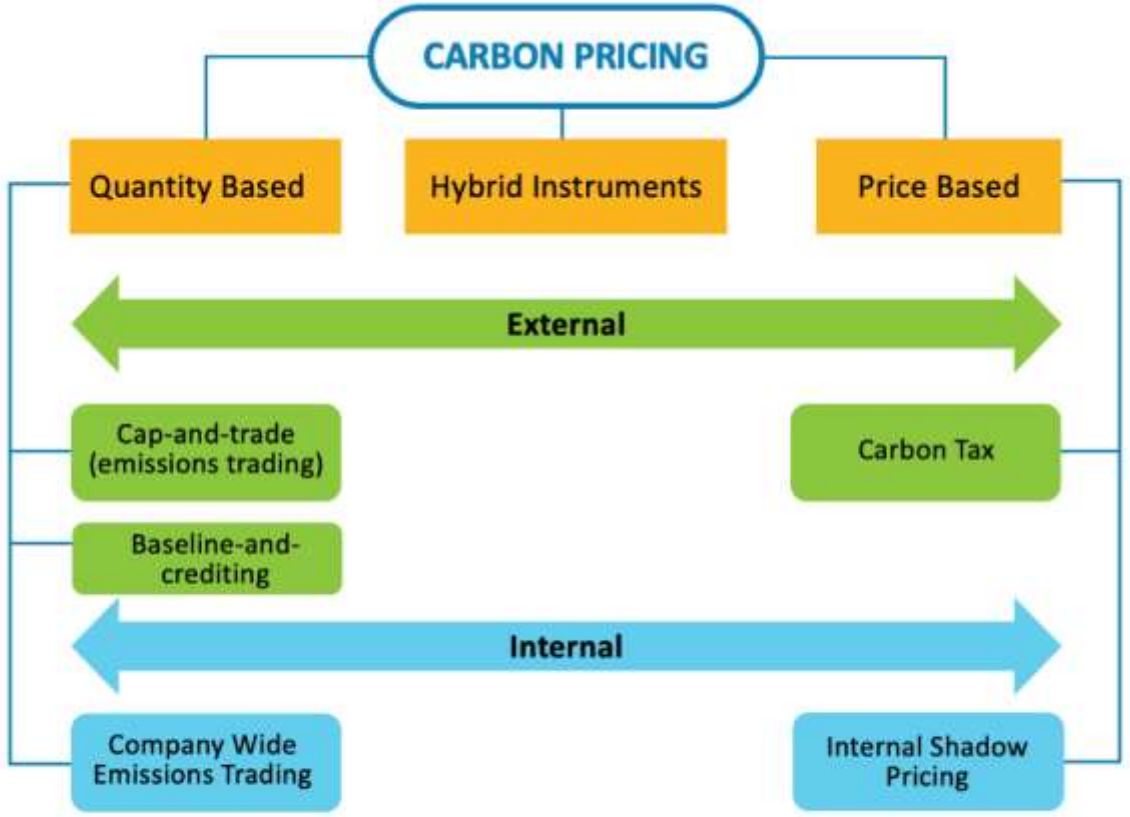
Source: C. Hood. 2013. Managing Interactions Between Carbon Pricing and Existing Policies. Paris: International Energy Agency/Organization for Economic Co-operation and Development.

The Landscape of Carbon Pricing Instruments

There is a **broad landscape** of direct carbon pricing instruments, including carbon taxes, emissions trading, and baseline-and-crediting mechanisms. Carbon pricing can:

- Support the achievement of nationally determined contribution **(NDC) targets cost-effectively** and raise **ambition**.
- Serve as a **powerful and cost-effective driver** for decarbonisation, a just transition, and support the realisation of wider energy policy objectives
- Catalyse the mobilization of **carbon finance** and incentivize the diffusion of **advanced low technologies and solutions** through international financing under **Article 6** of the Paris Climate Change Agreement
- Raise much-needed **revenues** for national governments

Landscape of Direct Carbon-Pricing Instruments



Source: Asian Development Bank

Growing Momentum on Carbon Markets

Carbon Pricing Map for Asia Pacific

- Emissions Trading System
- Carbon Tax
- Hybrid Approach

1. Kazakhstan
2. PRC National ETS
3. Chongqing
4. Beijing
5. Hubei
6. Guangdong
7. Shenzhen
8. Tianjin
9. Fujian
10. Shanghai
11. Republic of Korea
12. Saitama
13. Tokyo
14. New Zealand
15. Singapore
16. Japan
17. Indonesia

Growing momentum on Carbon Markets

- 5 domestic carbon markets implemented and/or announced in the **national level**
- Kazakhstan, New Zealand, the Republic of Korea and PRC have launched National ETS
- Indonesia has announced to implement a hybrid cap-trade-and-tax system
- Viet Nam, Thailand, Philippines and Pakistan are considering **adopting** domestic national carbon markets
- Increased momentum to utilize international carbon markets both under Article 6 of the Paris Agreement and the voluntary carbon market (VCM).
- Domestic voluntary market (T-VER) in Thailand

What is a Carbon Tax?

"A carbon tax is a tax that explicitly states a price on greenhouse gas emissions or that uses a metric directly based on carbon (that is, price per tCO_2e)."

(Source: World Bank, Carbon Tax Guide: A Handbook for Policy Makers)

- By explicitly putting a **price on carbon**, carbon taxes induce polluters to internalize the full social cost of pollution.
- Consumers and taxpayers therefore have **a financial incentive** to reduce their emissions in order to lower their tax obligation.

Carbon Tax: Key Design Elements

Scope
The scope of the carbon tax depends on substances covered.

Point of Taxation
A carbon tax can be levied at any point in the energy supply chain.

Tax and Escalation Rates
The tax rate should also rise over time to reflect the growing damage expected from climate change.

Distributional Impacts
A price on carbon that increases energy costs can have a greater impact on lower-income individuals.

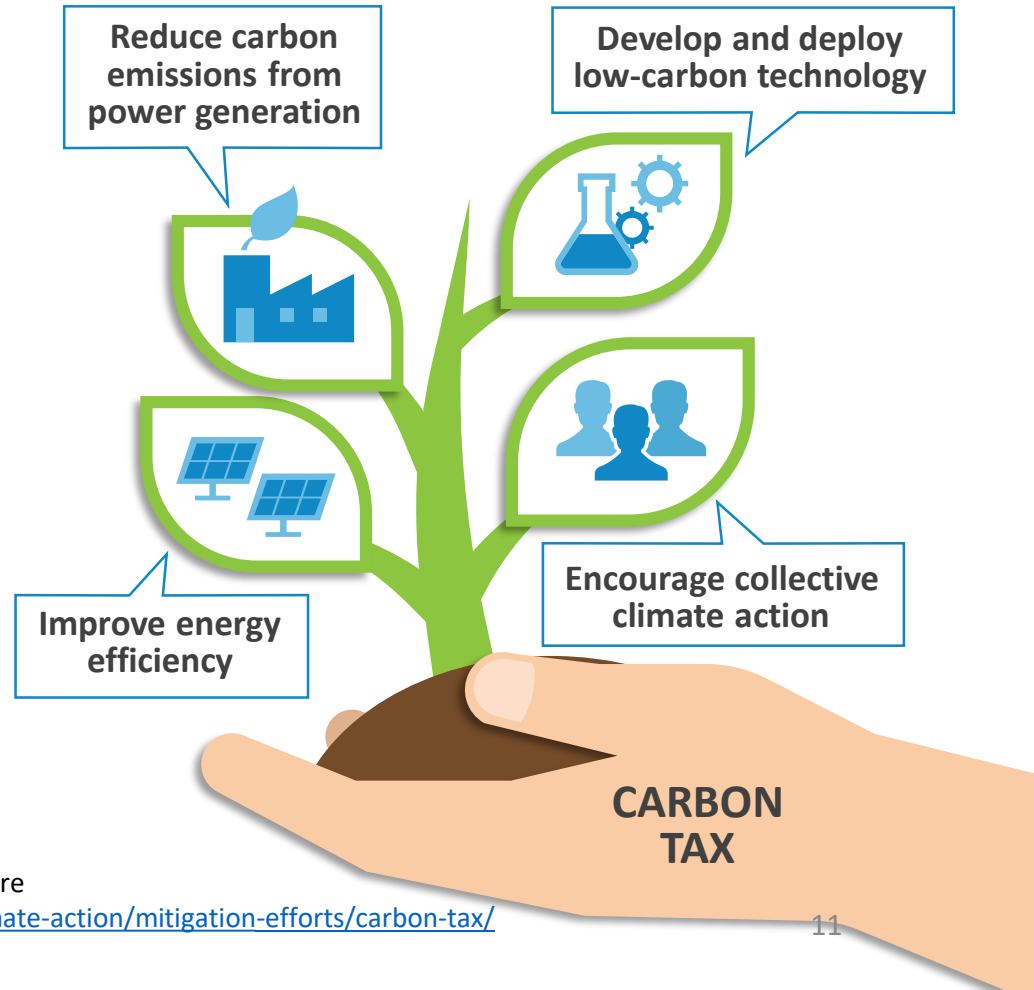
. Competitiveness
Without provisions protecting local production, a carbon price could put domestic energy-intensive, trade-exposed industries (EITEs) at a competitive disadvantage against international competitors that do not face an equivalent price.

Revenues
A carbon tax can raise significant revenue. How that revenue is used will ultimately be a political choice

Singapore Carbon Tax

- A **simple design.** Regulating about 50 of the largest emitters helps limit the administrative burden of the policy instrument
- Carbon tax rate: S$5/$tCO_2e$ from 2019 – 2023. **Increased** to $25/tCO2e in 2024. Will increase to $45/tCO2e in 2026, with a view to reaching S$50-80/tCO2e by 2030 (S$25 ≅ USD19)
- Gradually phasing in the system allows **businesses to adjust** their operations. Tax-liable facilities can offset up to 5% of their emissions using Article-6-compliant carbon credits from 2024.
- A **Climate Friendly Households Program,** introduced in 2020 to complement the tax, provided low-income households with vouchers that offset some of the cost of purchasing energy-efficient refrigerators, LED lights and low-flow shower heads.

Singapore's Climate Action Plan



Source: National Climate Change Singapore
https://www.nccs.gov.sg/singapores-climate-action/mitigation-efforts/carbon-tax/

What are Carbon Markets?

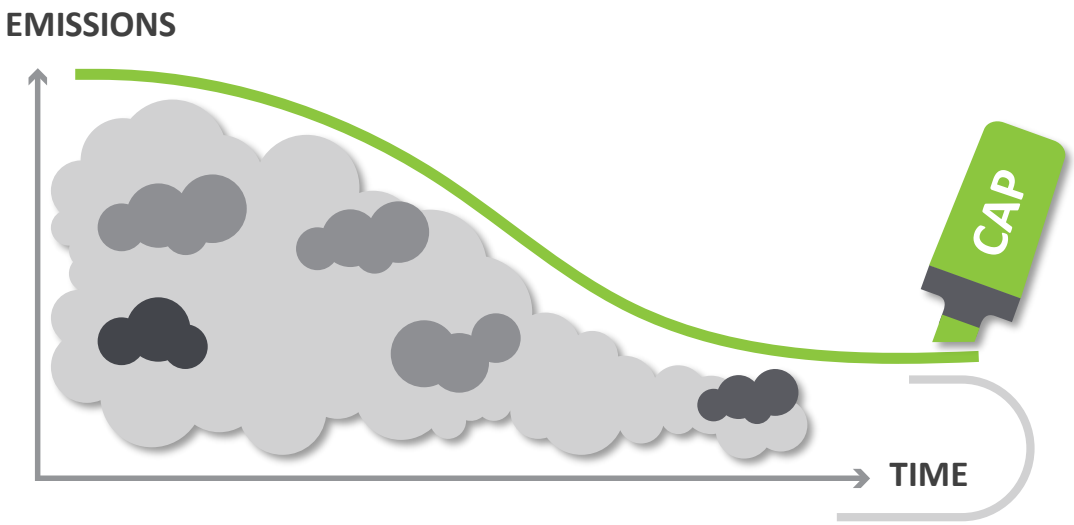
Carbon markets are trading systems in which rights to emit or verified emission reductions are sold and bought as allowances or credits. They are market based-approaches to control GHG emissions by providing economic incentives / liabilities.

- Theoretically acts as a tool for entities to meet GHG reduction obligations flexibly and in the most cost-effective manner
- Two types of carbon markets : **compliance** (e.g. EU Emissions Trading System) and **voluntary** (e.g. corporate net zero targets)
- Two types of approaches of carbon markets: **baseline-and-crediting** (e.g. PACM, JCM) and **emissions trading** (EU ETS, California)

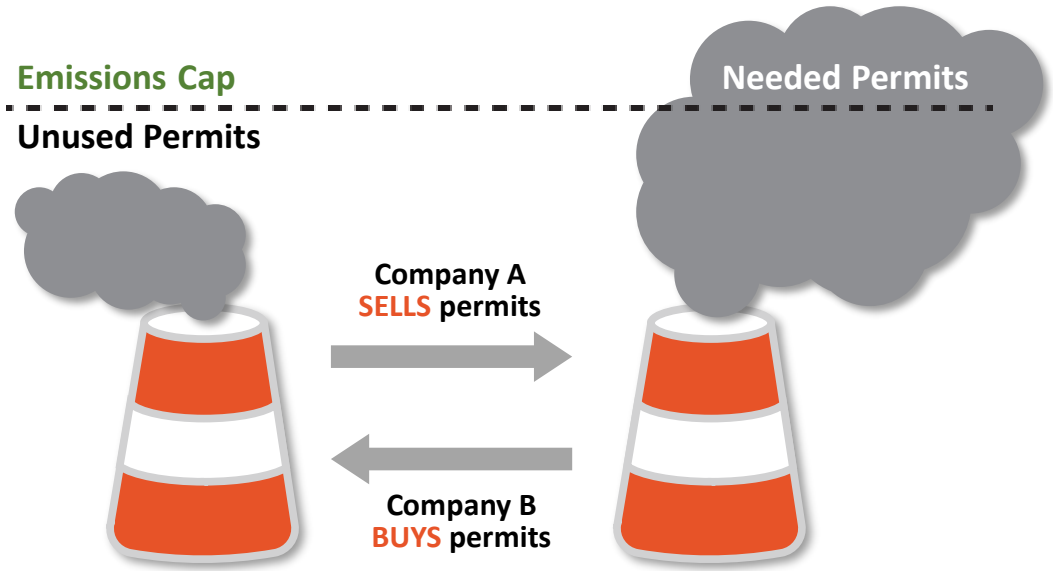
What are Cap-and-Trade Instruments?

- Cap-and-trade involves the commoditization of CO_2 as allowances, which can then be traded in a market, commonly referred to as an emissions trading system (ETS)
- Offset credits from sectors outside the capped sectors can create flexibility for regulated entities to comply
- For both, entities with emissions abatement costs lower cost than the market price for allowances/offset credits can mitigate and sell allowances/offset credits to entities with higher abatement costs
- Offset crediting can be used in conjunction with ETS and carbon taxes (such as in the case of Singapore)

Emissions Trading Systems



Source: ICAP 2019c



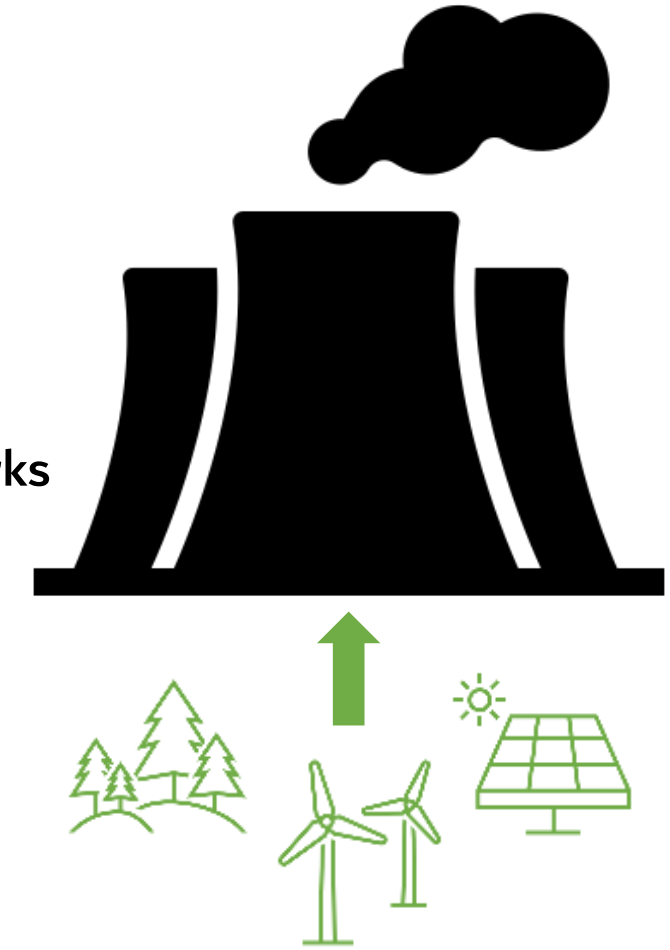
Source: Chandreyee and Velten 2014

- In emissions-trading systems, governments define emissions caps for regulated entities in one or more sectors and issue emission allowances to those entities
- Every year, regulated entities must surrender a quantity of allowances to the regulator corresponding to their emissions. Regulated entities can trade allowances amongst themselves.

Carbon Markets in People's Republic of China

National Emission Trading System

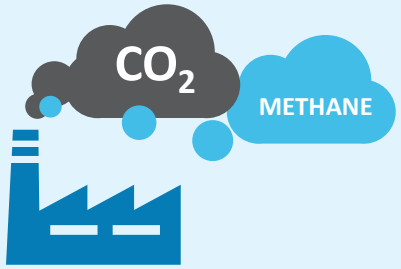
- Began operating in 2021.
- Coverage ≈ 40% country's CO_2 emissions, 5 billion tCO_2.
- 2000+ companies covered with annual emissions of more than 26,000 tCO_2.
- Focus is on power sector (including combined heat and power, as well as captive power plants of other sectors).
- Future scope expected to expand to seven other sectors.
- Output-based benchmarking: with free allocation of allowances using benchmarks based on actual production levels.
- Some borrowing is allowed, banking was allowed in past unclear for future.
- The national ETS builds on the experience of pilot carbon markets implemented in eight regions. The pilots continue to operate in parallel with the national ETS.
- Entities covered by the ETS can use Chinese Certified Emission Reductions (CCERs) from projects not covered by ETS for up to 5% of verified emissions.

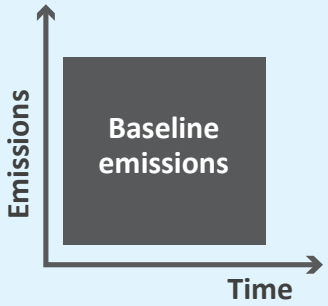


Source: International Carbon Action Partnership, China National ETS Factsheet.

Generation of Carbon Credits – Crediting Mechanism

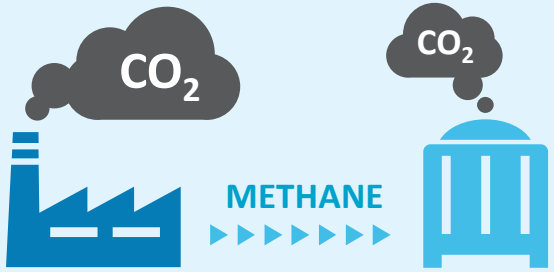
Baseline scenario
Methane is vented from the waste-water plant

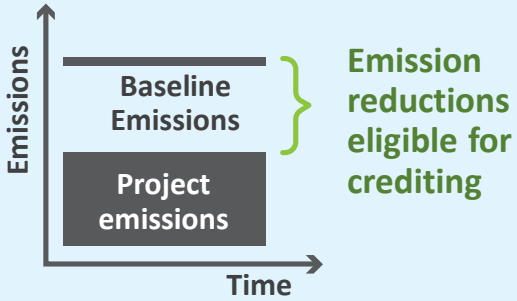




Implementation of emission reduction project

Project scenario
Methane captured and combusted to generate electricity

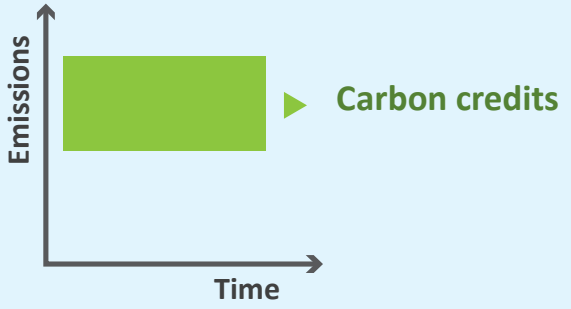




Emission reductions eligible for crediting

Issuance of carbon credits

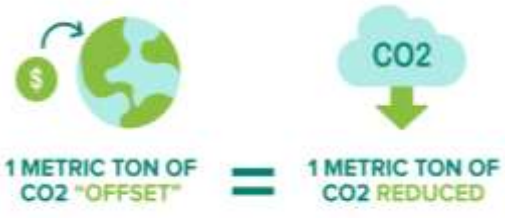
Carbon credits generation
Creation of carbon credits equal to the emissions reduced in tCO_2



A **governing body issues credits** to entities that demonstrated having generated qualifying emission reductions.

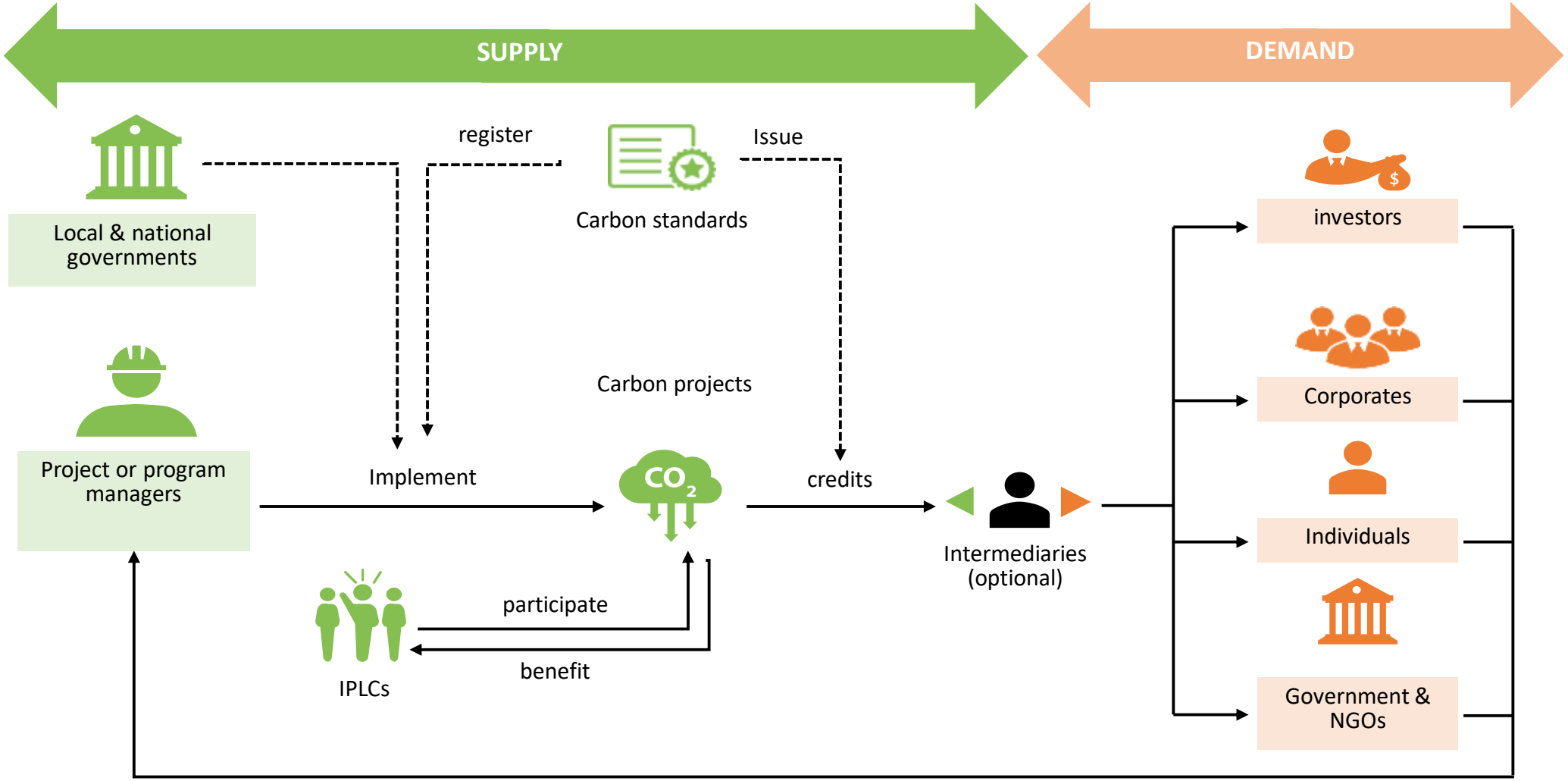
Examples of baseline-and-crediting system: JCM, CDM, PACM. voluntary (Gold Standard, Verified Carbon Standard/Verra)

Basis of emission reductions (credits) = baseline emissions – project emissions – leakage



Source: Adapted from World Bank 2020

Value Chain of Carbon Trading

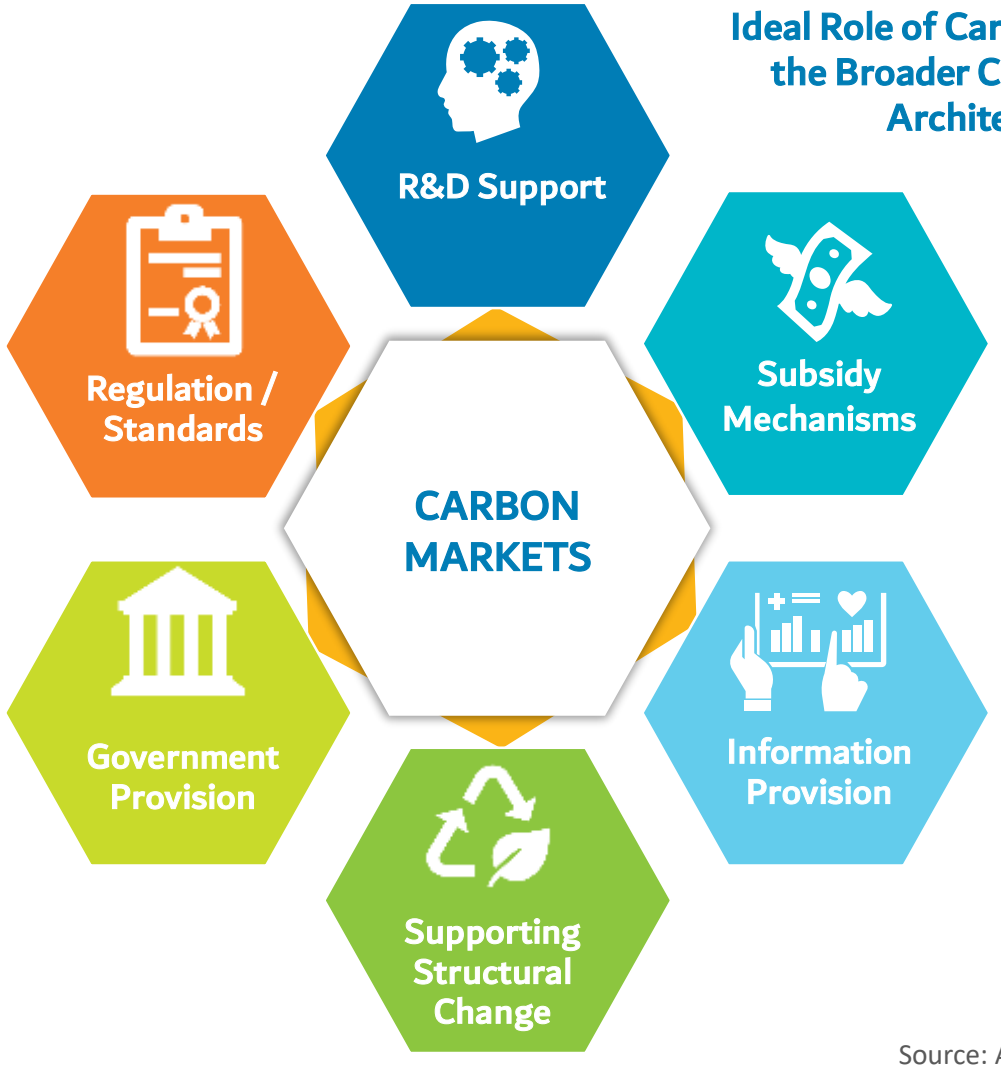


Source: ClimateFocus. VCM Primer

Ensuring Carbon Pricing is Designed in Synergy with other Policy Instruments

1. Carbon pricing and markets form an **integral element** of the broader climate policy architecture but they are not a panacea
2. Carbon markets need to be supported by a **coherent climate policy mix**, and implemented in tandem with supportive policy instruments such as information provisions, phase-out of fossil fuel subsidies etc.
3. By allowing for **policy review** and continuously making improvements, a policy mix will improve over time

Ideal Role of Carbon Markets in the Broader Climate Policy Architecture



Source: Asian Development Bank

Climate Policy Architecture – Example

Policy snapshot

Australia's Climate Policy 2012-2014—Overall Policy Package

Carbon pricing	Carbon equivalent pricing	Credit mechanism	Renewable energy support	Energy efficiency	Innovation support
Electricity, coal/gas use in industry and homes, industrial processes	Transport and some industrial processes	Offset projects in agriculture and forestry	Target for renewable energy share in total energy	Various incentive schemes and information schemes	Government support for R&D and for advanced technology deployment
Start with fixed price (like tax), plan was to turn into ETS	Increase in existing taxes/levies on fuels and some emissions, at regulated rates	Opt-in, voluntary, profit opportunities by selling to industry/electricity sector	Certificate trading scheme; feed-in tariffs at subnational level phased out	At national and sub-national levels; but many abolished at start of carbon pricing	R&D (Australian renewable energy agency), green bank (Clean Energy Finance Corporation)

Discussion Question

What type of climate policy instruments do you think are most relevant to your national context?

(please rank in order of preference)

(a) Regulatory

(b) Markets

(c) Information

(d) Facilitative

(e) Technological

Discussion Question

In the context of regional cooperation at the level of CAREC, what climate policy instruments do you think are most suitable?

(please rank in order of preference)

(a) Regulatory

(b) Markets

(c) Information

(d) Facilitative

(e) Technological

Discussion Question

Which type of carbon pricing instrument do you think is most relevant to your national context?

(please select one)

(a) Carbon tax

(b) Emission trading system

(c) Baseline and crediting mechanism

Discussion Question

Which type of carbon pricing instrument do you think is most conducive for supporting regional cooperation within CAREC?

(please select one)

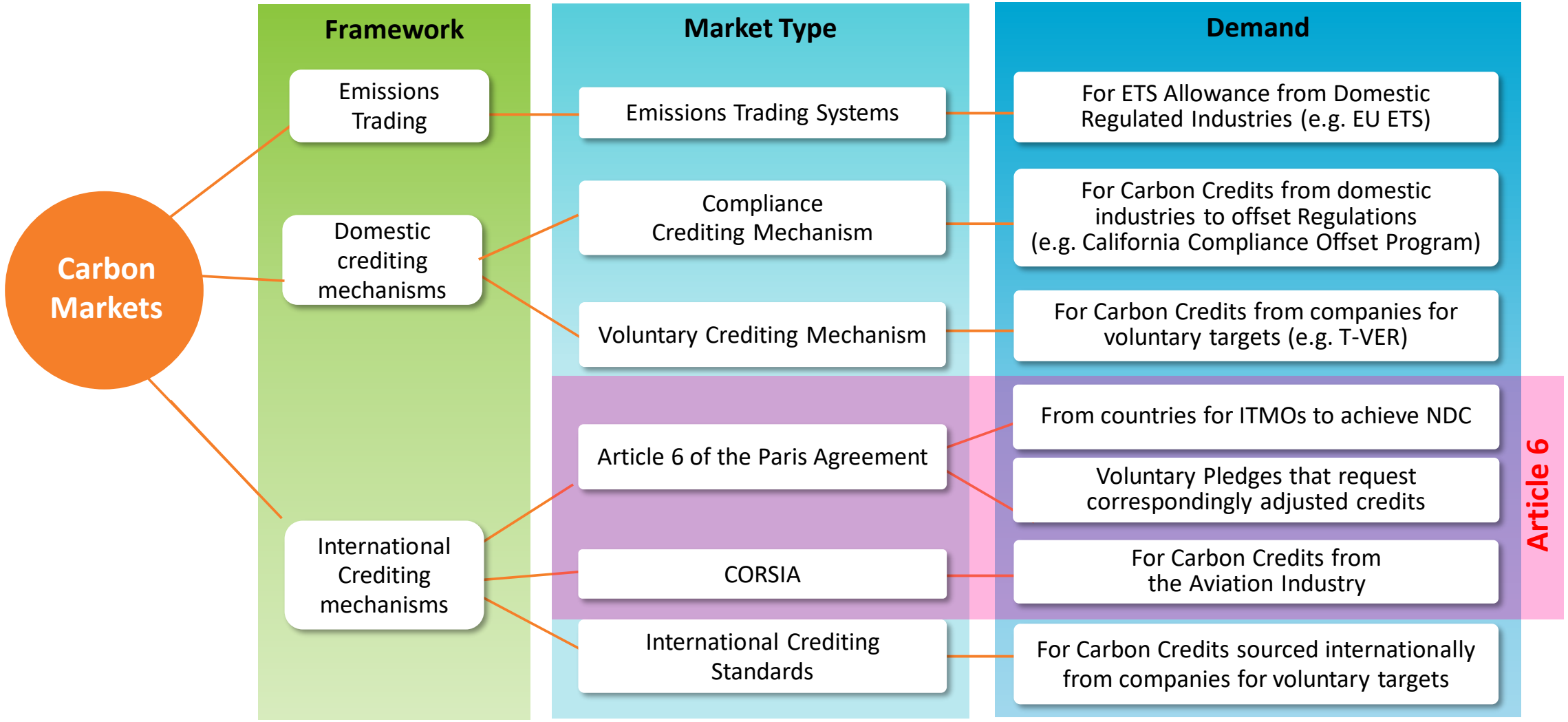
(a) Carbon tax

(b) Emission trading system

(c) Baseline and crediting mechanism

Session 2 – Landscape of Carbon Market Opportunities

Landscape of Carbon Markets



International Carbon Market State and Trends

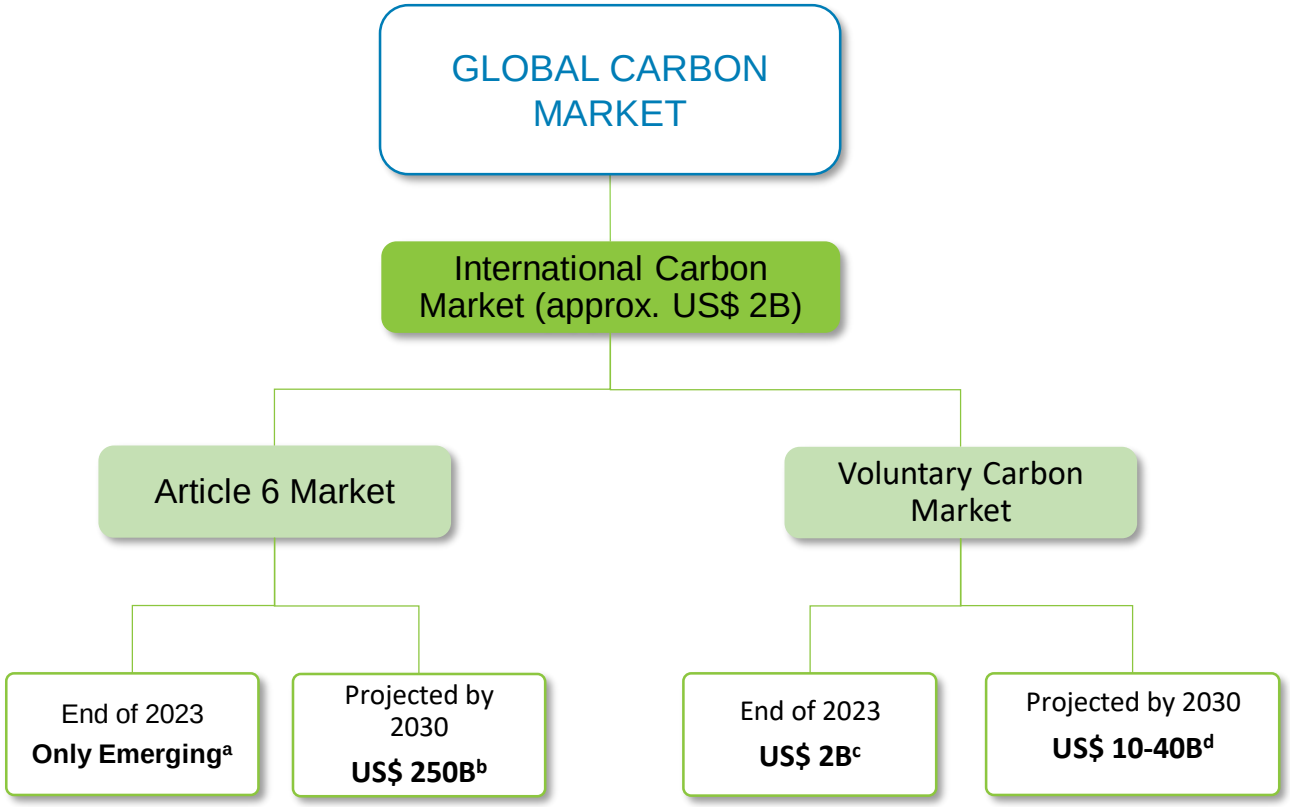
Embryotic stage - Transitioning from Kyoto to Paris.

Article 6 Rules are set for Article 6.2 bilateral mechanism between governments, but the Article 6.4 universal mechanism is not yet in operation. Bilateral G2G agreements for cooperation are emerging (around 86 agreements so far) but more countries need to be involved.

There are several projections on international carbon market size, with some estimates in the trillions of dollars for both Article 6 and VCM by 2050, and they vary based on assumptions used.

Despite the momentum, there are significant bottlenecks in LMICs hindering the scale of carbon markets to meet the financing needs under the Paris Agreement and closing climate finance gaps. Article 6 Rules are still under negotiations and the VCM continues to face significant criticisms and calls for reform.

There is a need to provide LMICs with holistic carbon market support that can help scale high-integrity carbon markets, foster market convergence, and help meet the targets under the Paris Agreement.



[a] World Bank. 2016. State and Trends of Carbon Pricing. Chapter 4. Washington DC. 2016 (*see Figures 14 and 15)*
[b] Using figures on cost savings from Article 6 of the Paris Agreement. International Emissions Trading Association (IETA). The Economic Potential of Article 6 of the Paris Agreement and Implementation Challenges, September 2019. https://www.ieta.org/resources/International_WG/Article6/CLPC_A6%20report_no%20crops.pdf.
[c] BloombergNEF. 2024. Carbon Credits Face Biggest Test Yet, Could Reach $238/Ton in 2050.
[d] Ecosystem Marketplace. 2023. State of the Voluntary Carbon Markets 2023.
[e] BloombergNEF. 2024. Carbon Credits Face Biggest Test Yet, Could Reach $238/Ton in 2050.; Morgan Stanley. *Where the Carbon Offset Market Is Poised to Surge*. 11 April 2023. https://www.morganstanley.com/ideas/carbon-offset-market-growth; BCG. 2023. The Voluntary Carbon Market is Thriving.; McKinsey. 2021. A blueprint for scaling voluntary carbon markets to meet the climate challenge.

Rationale for International Carbon Markets

Cost Effective Emission Reductions	Carbon markets encourages efficient ways of reducing emissions and discourages high-carbon options. By creating a financial incentive, carbon markets promote cost-effective emission reductions and price discovery. International carbon markets allow for countries with high GHG marginal abatement costs to reduce emissions in countries with lower GHG marginal abatement costs.
Generate Domestic Revenue	Domestic carbon markets, including voluntary markets as well as compliance emissions trading systems can generate domestic revenues by putting a price on pollution. International carbon markets can also contribute to domestic revenues or benefits through different tools of benefit-sharing.
Mobilize International Carbon Finance	International markets can mobilize international carbon finance through the sale of carbon credits, which can be an important source of revenue for project developers in low- and middle-income countries (LMICs).
Diffusing Low Carbon Technologies and Solutions	Alongside mobilizing carbon finance, international carbon markets can diffuse advanced low carbon technologies and solutions which are critical in supporting LMICs to implement their low-carbon development strategies.
Crowding in Private Capital and De-Risking Investments	The private sector is a strong demand centre for carbon credits to meet their net-zero targets cost-effectively. In addition, given the risks involved with climate finance, carbon markets can provide an additional source of funding which can provide a justification for taking those additional risks.
Enhanced Ambition and Sustainable Development	Article 6 of the Paris Agreement focuses on international carbon markets. These markets allow countries to enhance their climate actions and achieve their nationally determined contributions (NDCs). Additionally, Article 6 markets are required to promote sustainable development and environmental integrity.

Clean Development Mechanism (CDM)

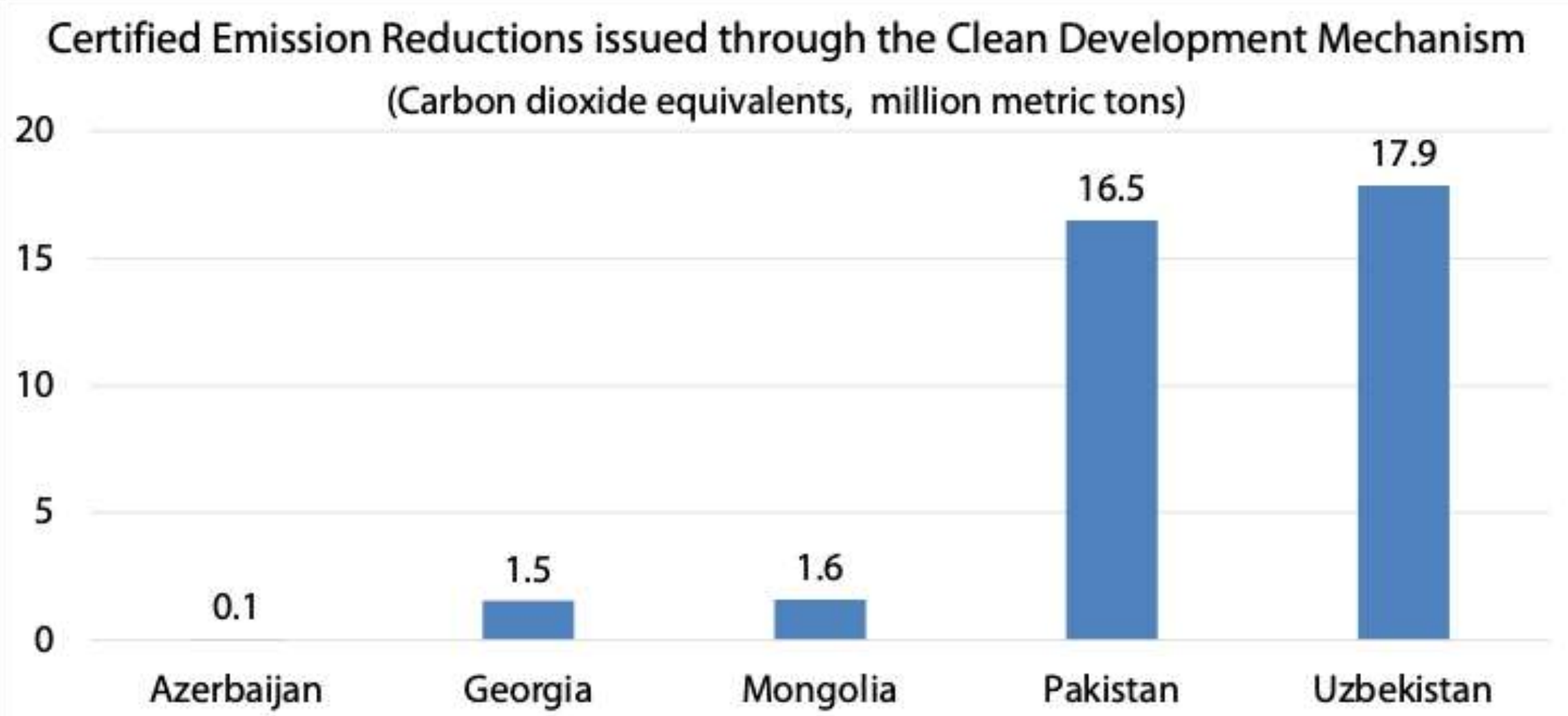
Overview

- Projects from the mechanism can earn **saleable certified emission reduction (CER)** credits, equivalent to one metric ton of carbon dioxide
- It is the first global, environmental investment and credit scheme of its kind, providing a **standardized emission offset instrument**, CERs.
- Examples of CDM projects could include a rural electrification project using solar panels or the installation of more energy-efficient boilers.
- The mechanism **stimulates sustainable development and emission reductions**, while giving industrialized countries some flexibility in how they meet their emission reduction or limitation targets.

Operational details

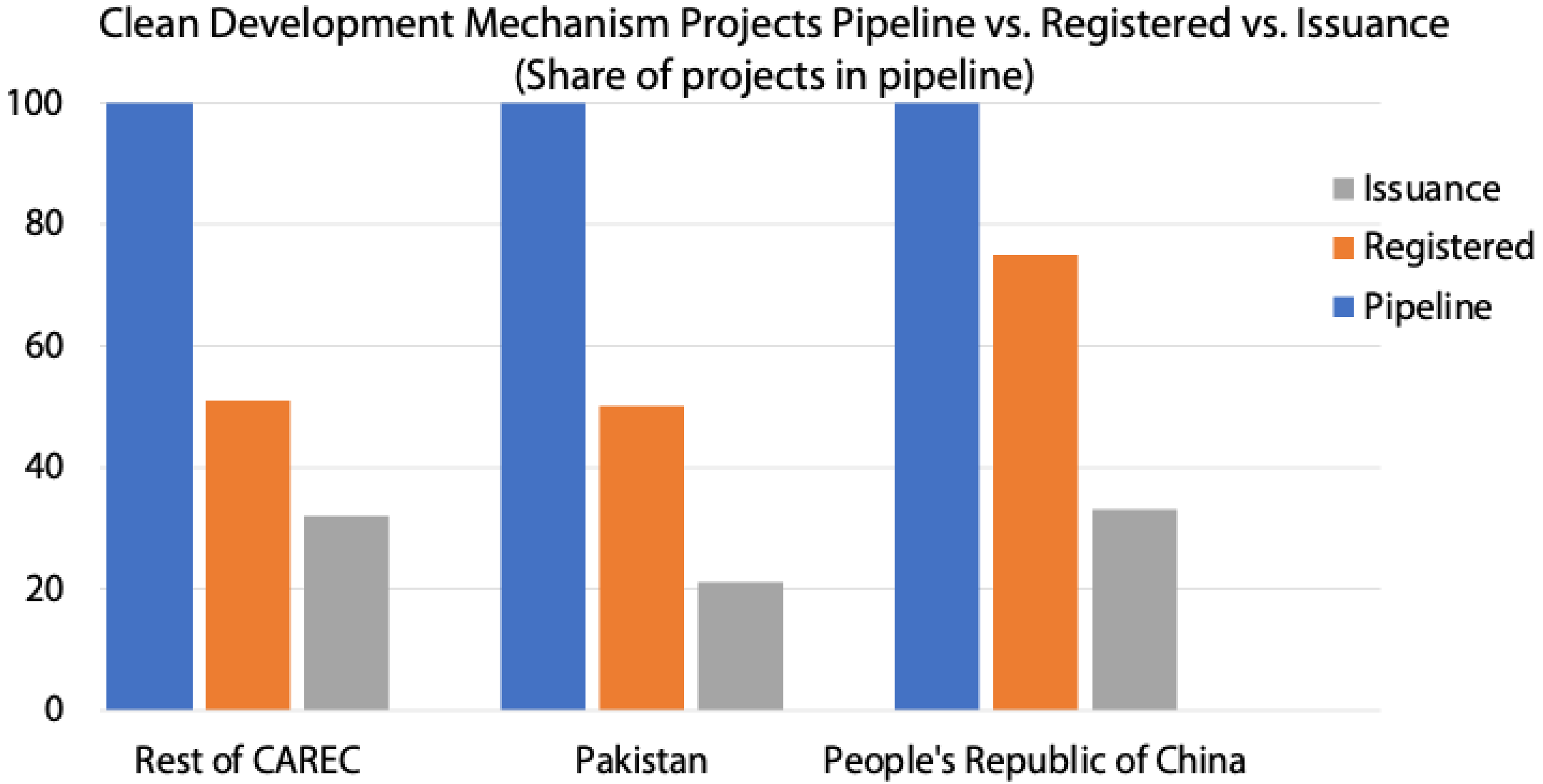
- A CDM project must provide **emission reductions that are additional** to what would otherwise have occurred.
- Projects are **approved by Designated National Authorities**.
- The **mechanism is overseen by the CDM Executive Board** answerable ultimately to the countries that have ratified the Kyoto Protocol.

Issuances of Certified Emission Reductions



Source: United Nations Framework Convention on Climate Change, Clean Development Mechanism Registry Issuance Report as at 31 July 2024.

Clean Development Mechanism Projects



Source: United Nations Framework Convention on Climate Change, Clean Development Mechanism Project Database accessed 22 August 2024.

Article 6 of the Paris Agreement

Host country transfers Article 6.2 units (ITMOs) to **buyer country** through a bilateral agreement

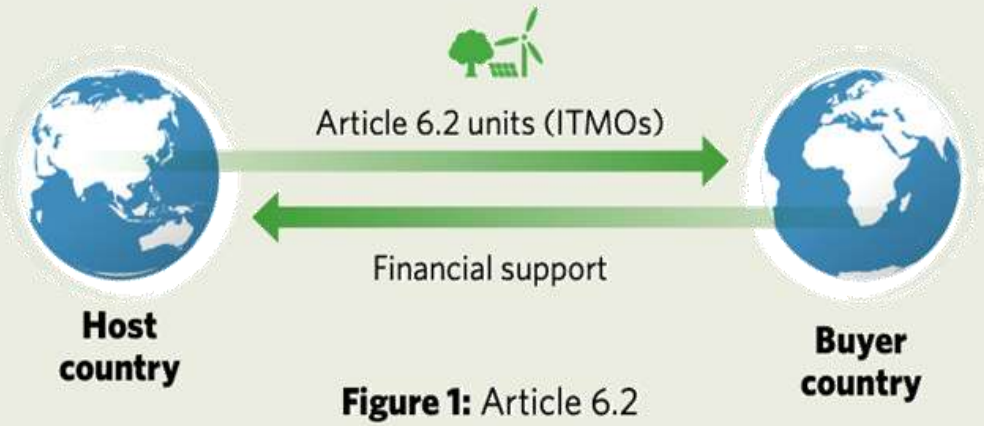


Figure 1: Article 6.2

Article 6.2

Host country generates units through a UNFCCC centralized mechanism and transfers them to buyer country and other buyers

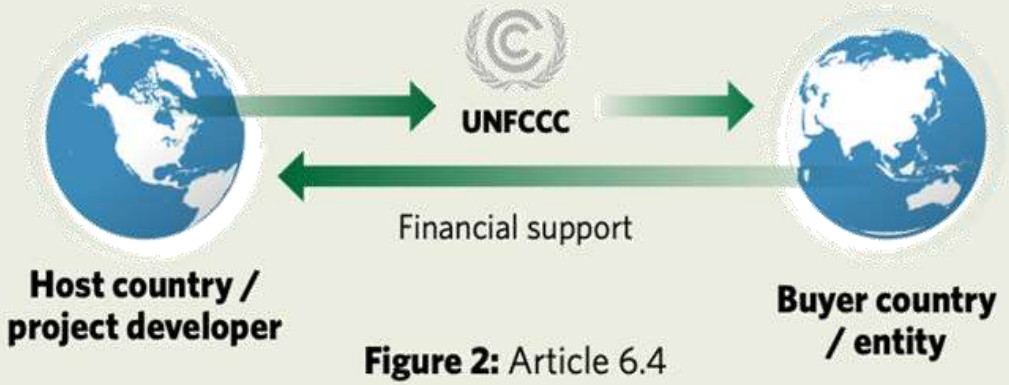


Figure 2: Article 6.4

Article 6.4

Article 6.2 can also involve the private sector under the framework of a bilateral agreement or under "other international mitigation purposes". The Paris Agreement Crediting Mechanism (PACM or Article 6.4) is designed to facilitate the participation of both private and public sectors

Source: Article 6 Explainer by The Nature Conservancy.

CORSIA: Overview

- Carbon Offsetting and Reduction Scheme for International Aviation was adopted in 2016 **to address CO2 emissions from international aviation**.
- CORSIA has applied to international aviation since 1 January 2019 when all airlines were required to **report their CO2 emissions on an annual basis**.
- From 1 January 2021, international flights became **subject to offsetting obligations**.
- Due to COVID-19 pandemic, **the baseline used for CORSIA was 2019 emissions** level for the period of 2021-2023 due to the unprecedented circumstances facing the industry.
- In October 2022, ICAO set **85% of 2019 emissions as CORSIA's baseline** from 2024 onwards.

HARVARD PROJECT ON CLIMATE AGREEMENTS

VIEWPOINTS

The Extraordinary Climate Agreement on International Aviation: An Airline Industry Perspective

George Anjaparidze

October 2019

Summary

The Carbon Offset and Reduction Scheme for International Aviation (CORSIA), adopted by the International Civil Aviation Organization (ICAO) in October 2016, addresses the growth in total CO_2 emissions from international aviation above 2020 levels. Prior to the scheme, there was a high risk that states would introduce climate policies that would lead to a costly patchwork of overlapping and distortive measures. The International Air Transport Association (IATA) played a crucial role in developing workable solutions that helped secure a global approach to addressing CO_2 emissions from international aviation. (ICAO is an international governmental organization, and IATA is a business association.)

No other sector has a climate policy that places an absolute global cap on net CO_2 emissions. A key design feature of CORSIA is that it incorporates the concept of shared responsibility for managing CO_2 emissions. The offset responsibility of individual carriers is, initially in full and later in part, determined by the industry CO_2 growth factor. Furthermore, the scheme is phased in a way that addresses the special circumstances and respective capabilities of developing countries while ensuring uniform treatment of aircraft operators.

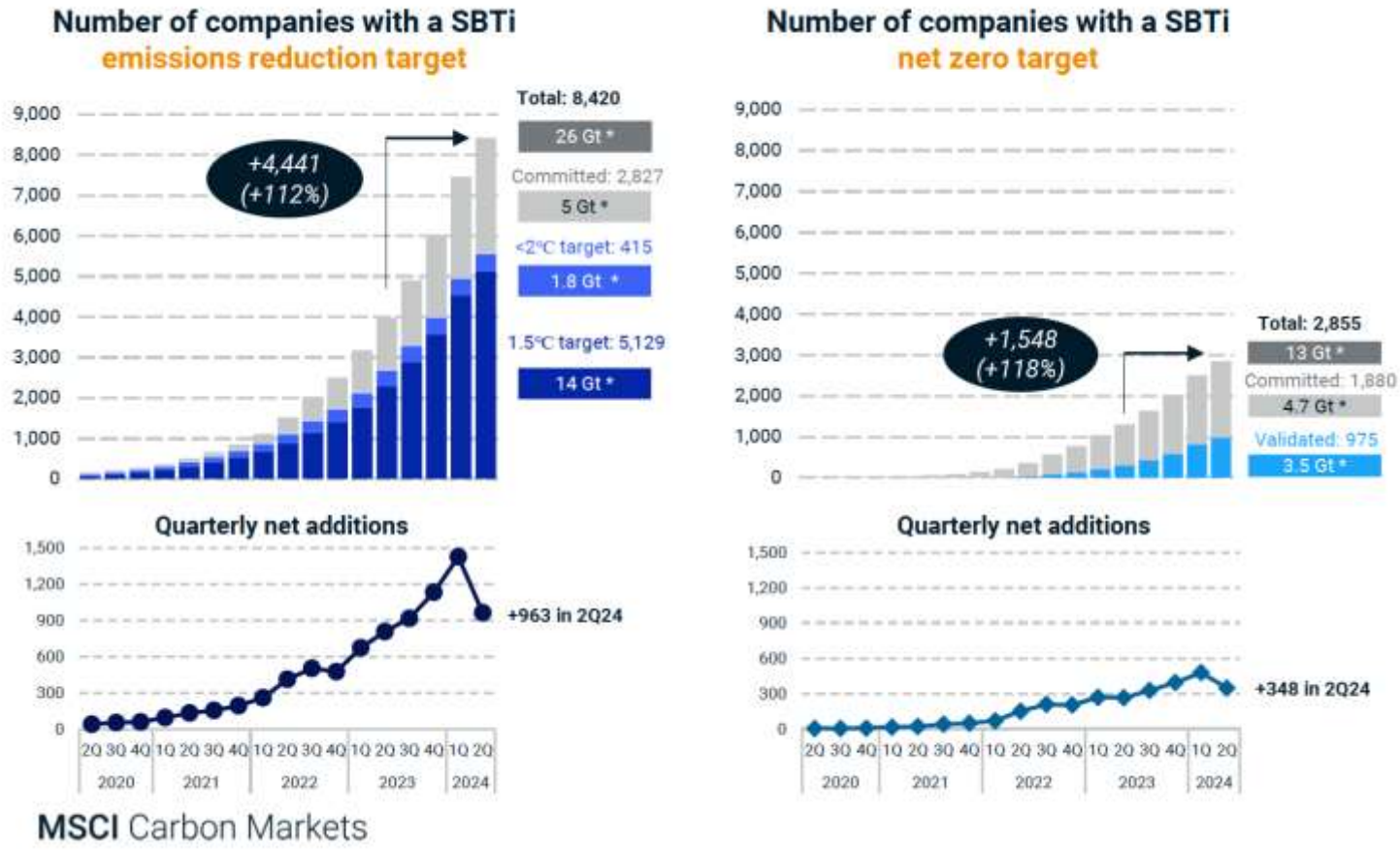
This paper has six sections. It starts by introducing the key relevant characteristics of air transport. The second section provides historical context in which the industry climate change strategy was developed. The third section provides an overview of the technical work of the IATA Climate Change Task Force. The fourth section highlights the key industry decision points taken by IATA members. The fifth section explains the key design features of CORSIA as adopted by ICAO. The last section highlights next steps for CORSIA implementation.

Voluntary Carbon Market (VCM)

The Voluntary Carbon Market (VCM) is a decentralized market where private actors voluntarily buy and sell carbon credits that represent certified removals or reductions of greenhouse gases (GHGs).

The international VCM encompasses the collection of standard bodies, voluntary buyers, and carbon credit generators that sell verified carbon credits to be used for voluntary purposes.

There is an increasing trend among corporates that are focusing on carbon markets to seek high integrity and Article 6 authorized credits.



Sources: SBTi, MSCI Carbon Markets

* Scope 1, 2 and 3 emissions as reported by companies in most recently collected year

Current State and Trends in the VCM (International)

- Average voluntary carbon markets (VCM) credit prices in 2022 were higher than they have been in 15 years (rising by 82 percent from $4.04 per ton in 2021 to $7.37 per ton in 2022).
- The volume of VCM credits traded dropped by 51 percent, from a 2021 peak.
- This price hike allowed the overall value of the VCM to hold relatively steady in 2022, at just under $2 billion.
- Credits connected to nature-based solutions were a primary driver of high market value.
- Credits that certified additional robust environmental and social co-benefits “beyond carbon” had a significant price premium (78% price premium in 2022).
- Newer credits are attracting higher prices, indicating that buyers are seeking newer vintages with more robust recent methodologies.
- CORSIA-eligible project credits gained market value, driven by a 126 percent increase in price.

Source: Ecosystem Marketplace. 2023. Paying for Quality State of the Voluntary Carbon Markets 2023.

Current State and Trends in the VCM (Agriculture Sector)

- The fastest-growing category in 2022 by transaction volume.
- Almost all (96 percent) of Agriculture credits in transactions reported to EM were registered with the VCS standard.
- In 2022, Agriculture credits became the most expensive credits by average price ($11.02), surpassing Forestry and Land Use ($10.14). Alongside, the volume of agriculture credits jumped 283% in 2022 compared to 2021.
- According to Verra, its pipeline for Agriculture projects is still robust, especially for projects under VM42 (Methodology for Improved Agricultural Land Management).

	2021			2022			2021-2022 PERCENT CHANGE			2023 (YTD)
CATEGORY	VOLUME ($MtCO_2e$)	VALUE (USD)	PRICE (USD)	VOLUME ($MtCO_2e$)	VALUE (USD)	PRICE (USD)	VOLUME	VALUE	PRICE	PRICE (USD)
FORESTRY & LAND USE	242,339,151	$1,401,461,426	$5.78	113,253,651	$1,148,848,783	$10.14	-53%	-18%	+75%	$11.21
RENEWABLE ENERGY	214,508,581	$463,950,451	$2.16	92,477,042	$386,054,729	$4.16	-57%	-17%	+93%	$3.97
CHEMICAL PROCESSING & INDUSTRIAL MANUFACTURING	17,253,275	$53,877,016	$3.12	13,338,781	$68,531,895	$5.14	-23%	+27%	+65%	$4.69
HOUSEHOLD / COMMUNITY DEVICES	8,687,821	$46,606,814	$5.36	9,070,331	$77,590,244	$8.55	+4%	+66%	+60%	$7.33
ENERGY EFFICIENCY / FUEL SWITCHING	10,936,656	$23,583,132	$2.16	6,601,354	$35,577,952	$5.39	-40%	+51%	+150%	$3.69
WASTE DISPOSAL	11,647,530	$42,292,142	$3.63	6,207,615	$44,870,139	$7.23	-47%	+6%	+99%	$9.00
AGRICULTURE	987,026	$9,525,119	$9.65	3,783,393	$41,700,362	$11.02	+283%	+338%	+14%	$6.43
TRANSPORTATION	5,405,466	$6,257,391	$1.16	176,338	$770,485	$4.37	-97%	-88%	+277%	-

Figure: VCM Transaction Volumes, Values, and Prices, by Project Category, 2021-2023

Source: Ecosystem Marketplace. 2023. Paying for Quality State of the Voluntary Carbon Markets 2023.

Voluntary market concerns

What do buyers care about?

- Branding value
- Reputational risk
- Delivery
- Simplicity
- Clean transactions

What does the global community care about?

- Additionality
- Tracking and transparency
- Avoiding double counting
- Equity
- Permanence
- No leakage

ASEAN Alliance on Carbon Market

- ASEAN Alliance on Carbon Market (AACM) was formed to **promote scaling Voluntary Carbon Markets** across ASEAN and **support implementation of compliance markets**.

- First private sector-led body of its kind, **advocating for cross-border efforts** in areas of carbon market development

- Foster **regional ecosystem** and act as a **focal point for international partnerships** with activities including capacity building and technical assistance.

Source:: ASEAN Alliance on Carbon Market website, accessed 26 August 2026.

Discussion Question

Did your country realize its potential under the Clean Development Mechanism of the Kyoto Protocol?

(please select one)

a) Fully realized

b) Mostly realized

c) Partially realized

d) Not realized

e) Don't know

Discussion Question

What was the largest challenge in realizing your country's potential from the Clean Development Mechanism?

(please select one)

a) Pipeline development

b) Follow through on implementation of registered projects

c) External factors

d) Other

e) Don't know

Discussion Question

Up to 2030, do you think your country will participate in international carbon markets?

(please select one)

(a) Yes, as a net supplier of carbon credits

(b) Yes, as a net buyer of carbon credits

(c) No

Discussion Question

From a national perspective, what type of carbon market do you expect to be most active in?

(please select one)

(a) Article 6 carbon markets

(b) Voluntary carbon markets

(c) Both equally

(d) Other

(e) None

Discussion Question

In terms of carbon markets, what do you see as the biggest barrier to regional cooperation within CAREC?

(please select one)

(a) Lack of technical capacity

(b) Lack of political will

(c) Lack of incentives to cooperate

(d) Other

Session 3 – Deep Dive on Article 6 of the Paris Agreement

Article 6 of the Paris Agreement

Host country transfers Article 6.2 units (ITMOs) to **buyer country** through a bilateral agreement

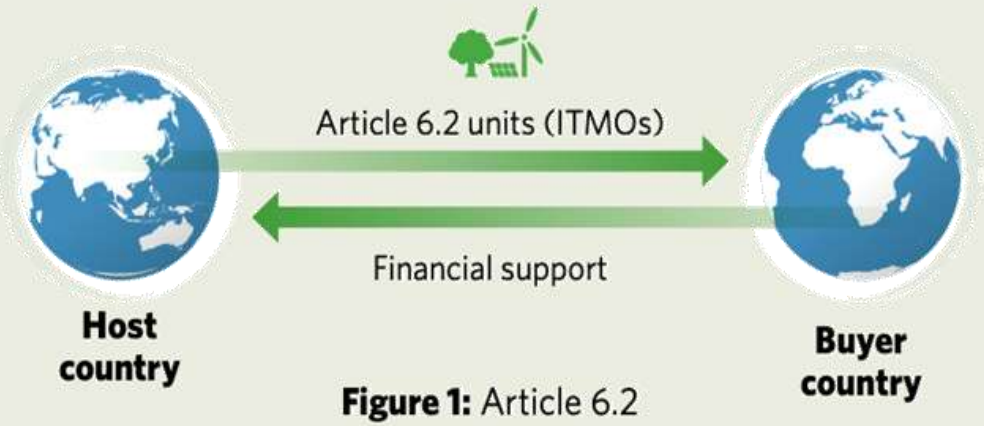


Figure 1: Article 6.2

Article 6.2

Host country generates units through a UNFCCC centralized mechanism and transfers them to buyer country and other buyers

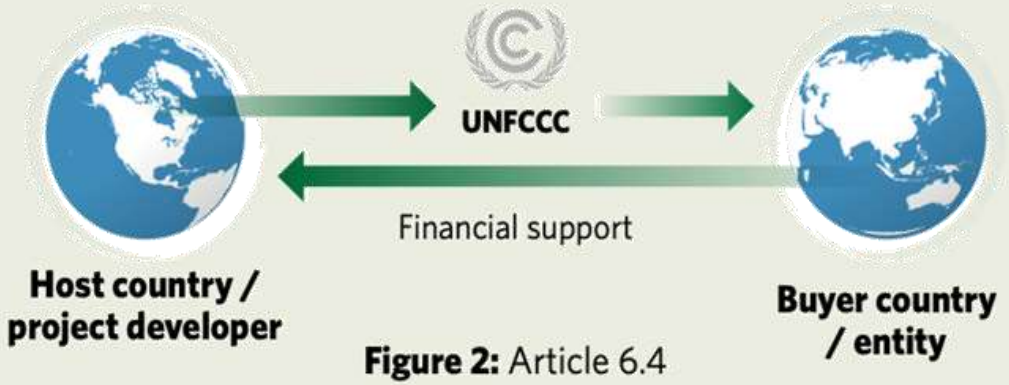


Figure 2: Article 6.4

Article 6.4

Article 6.2 can also involve the private sector under the framework of a bilateral agreement or under "other international mitigation purposes". The Paris Agreement Crediting Mechanism (PACM or Article 6.4) is designed to facilitate the participation of both private and public sectors

Source: Article 6 Explainer by The Nature Conservancy.

What is required for participation? All participants must

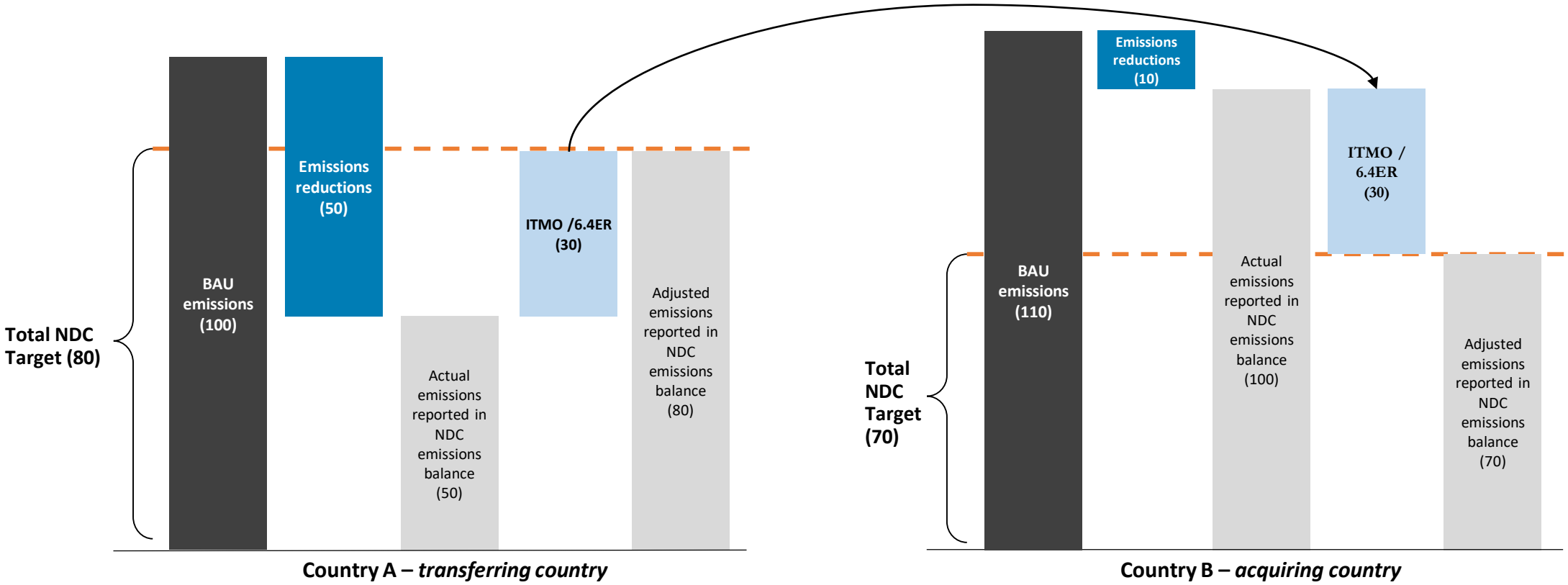
1. Be a Party to the Paris Agreement
2. Have prepared, communicated and be maintaining an NDC
3. Produce national inventories and track progress toward achieving NDC mitigation targets
4. Provide the most recent national inventory report
5. Have arrangements for authorizing the export of ITMOs for use toward achieving NDCs or other purposes
6. Have arrangements for tracking ITMOs (6.2)
7. Demonstrate that their participation contributes to NDC implementation, and
8. Demonstrate that participation contributes to their long-term low-emission development strategy, if they have one
9. Have designated a national authority for participation (6.4)

All first international transfers of Article 6 carbon credits require corresponding adjustments to avoid double counting of emission reductions

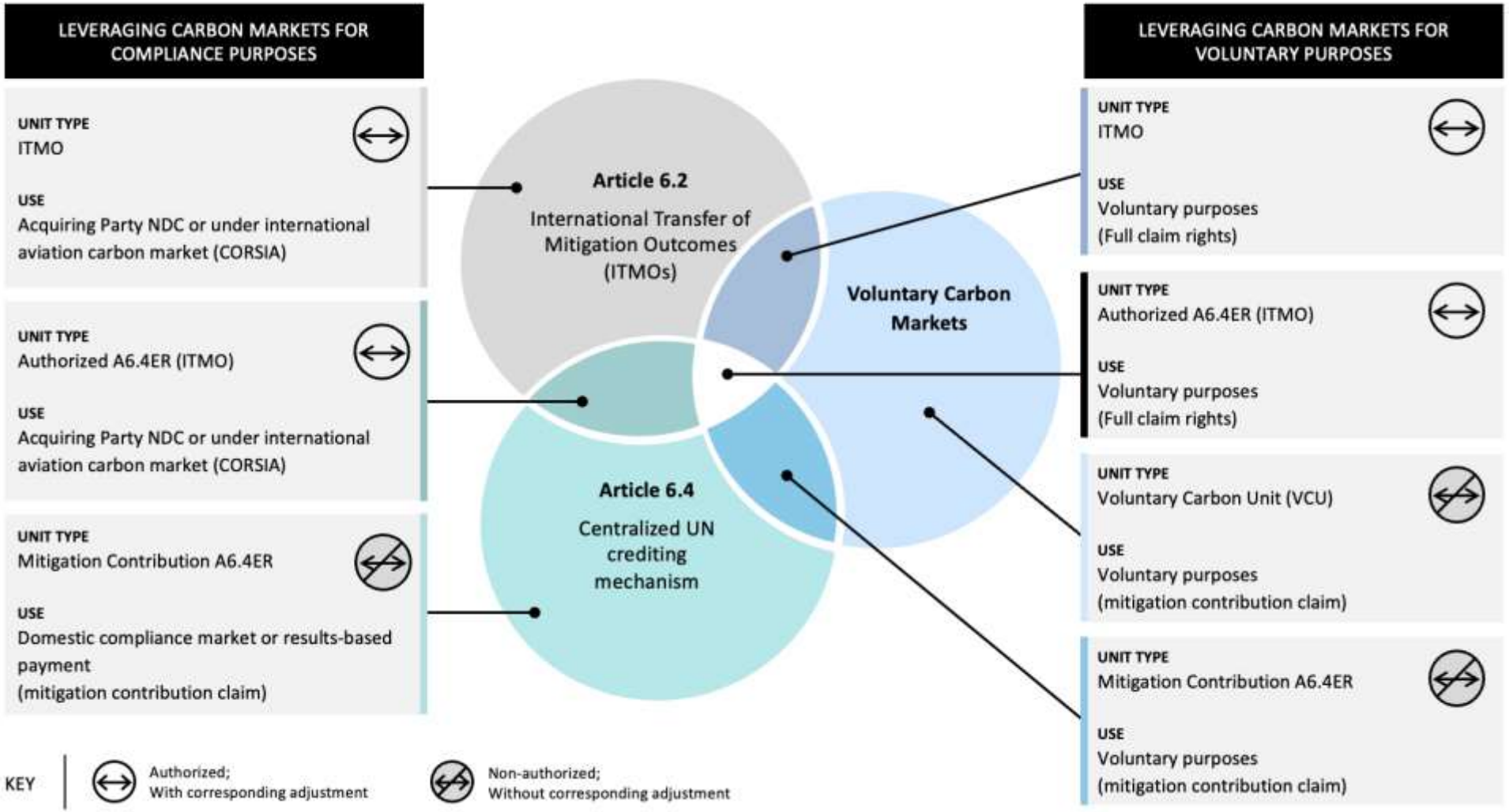
Corresponding adjustment is made by Country A after it transfers Emission Reductions to Country B

1 Adjustment made in the transferring country's GHG inventory so that only the tons that are **not exported** are counted towards its NDC.

2 Adjustment made in the receiving country's GHG inventory so that the tons that **are exported** are counted towards its NDC.



ITMOs, Terminologies & VCM Overlaps



UNFCCC Negotiations Going into COP 29 on Article 6

Progress made in June 2024 (at SB 60) was largely procedural but consequential

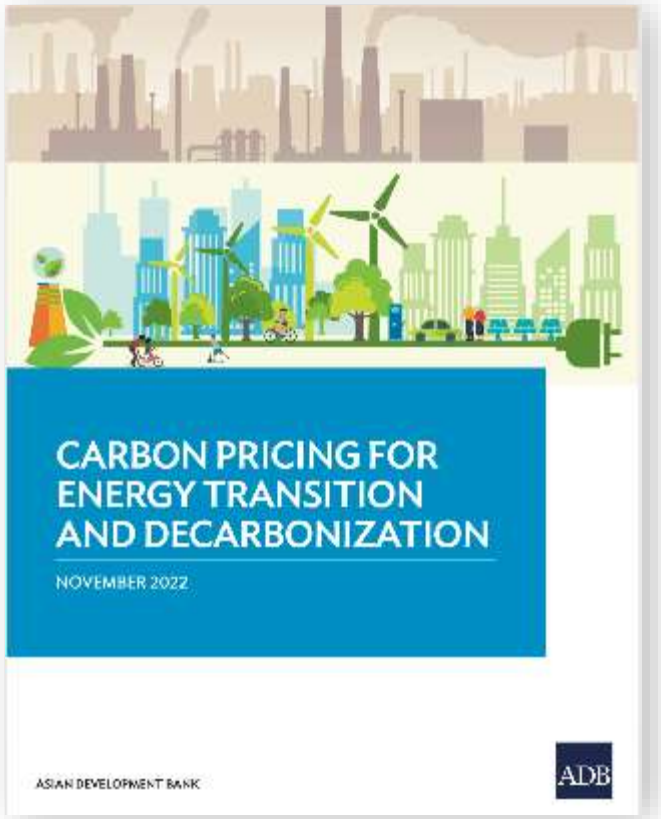
- Postpone deliberation on contentious issues to next review of Article 6 scheduled for 2028 (e.g., allowing carbon credits from avoided deforestation).
- Conclude consideration of complex administrative issues and delegate operationalization to the secretariat (issues related to tracking of ITMOs and reporting).
- Plan technical workshop to improve understanding of technically complex matters
- Forward draft negotiating texts to the next session in Baku

Significant divergence remains on substantive issues while technical in nature, most of the disagreements reflect a strong political divide

Article 6.2	Article 6.4
Scope and definition of a cooperative approach	Authorization of Article 6.4 Emission Reductions
Timing and possible revocation of authorization	Article 6.4 registry
Application of first transfer	Share of proceeds for adaptation
Content of reporting formats	CDM afforestation and reforestation activities transition
Functionality of registries	Baseline methodologies

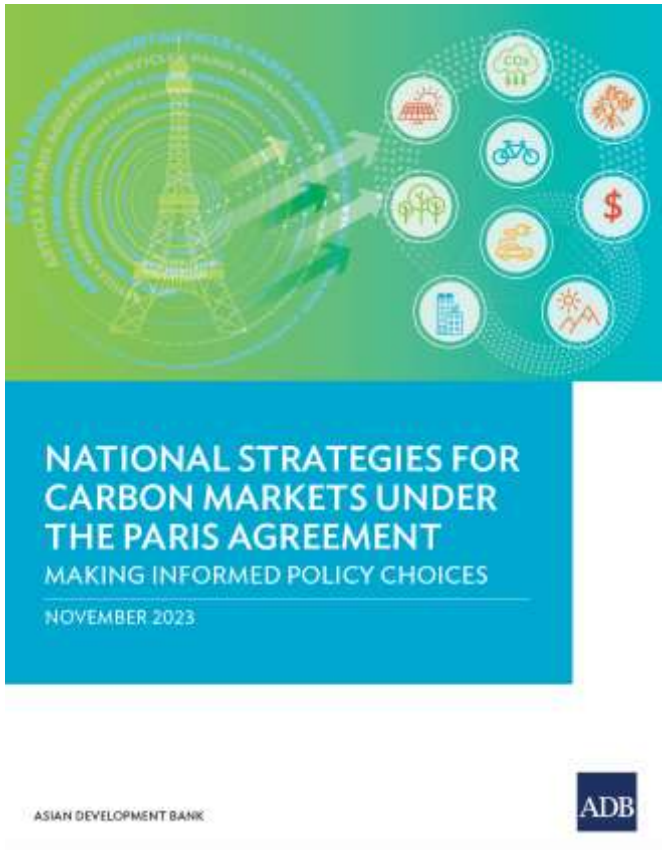
Article 6 Readiness in CAREC

	Receives support from development partners on Article 6 Readiness	Experienced in engaging with Clean Development Mechanism (CDM)	Conducted sectoral studies and gap assessments for Article 6 engagement	Developed a strategy, and/or roadmaps to participate in Article 6	Established a Designated National Authority (DNA) for Article 6.4	Has arrangements in place for authorizing the use of ITMOs towards achievement of NDCs	Provided the most recent national inventory report	Conducted/is conducting an Article 6 pilot or early projects	Signed Article 6 bilateral agreements with buyer countries	Submitted the Initial Report
Afghanistan	-	-	-	-	-	-	✓	✓	-	-
Azerbaijan	✓ partly	✓	-	-	✓	-	✓	-	✓ MoU	-
People's Republic of China	-	✓	-	-	-	-	✓	-	-	-
Georgia	✓	✓	-	-	-	-	✓	✓	✓	-
Kazakhstan	-	NA	-	-	✓	-	✓	-	✓ MoU	-
Kyrgyz Republic	✓	-	-	-	✓	-	✓	-	✓ MoU	-
Mongolia	✓	✓	-	-	✓	-	✓	✓	✓	-
Pakistan	✓	✓	✓	-	✓	-	✓	-	-	-
Tajikistan	✓	-		-	-	-	✓	-	-	-
Turkmenistan	-	-	-	-	-	-	✓ in progress	-	-	-
Uzbekistan	✓	✓	✓ in progress	✓	✓	✓	✓	✓	✓	-



Carbon Pricing For Energy Transition and Decarbonization

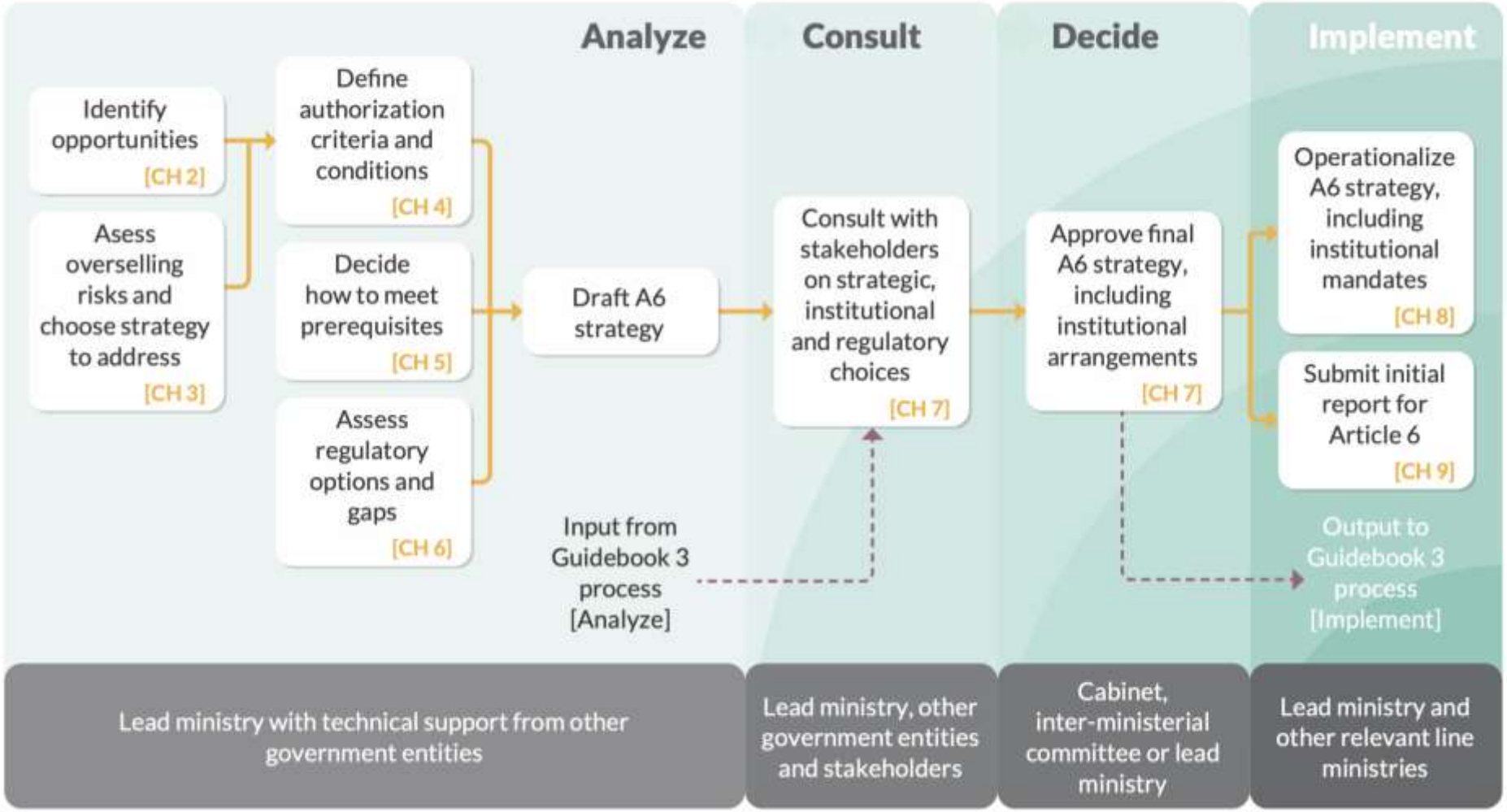
Carbon pricing is an integral element of the climate policy architecture that can help countries reduce their greenhouse gas (GHG) emissions cost-effectively, enable them to achieve climate targets articulated under their nationally determined contributions, and raise climate ambition over time. This study provides insights on how well-designed carbon pricing instruments can play a role in accelerating efforts toward energy transition and decarbonization. Utilizing relevant case studies and lessons learned from jurisdictions that have implemented carbon pricing instruments, the study underscores the importance of design considerations in alignment with national circumstances and priorities.



National Strategies for Carbon Markets under the Paris Agreement — Making Informed Policy Choices

This report analyzes how carbon markets can be designed to help economies reach ambitious emission reduction goals and generate the financing needed to scale up climate action and build a resilient future. Designed as a framework for policymakers, it examines the current state of international and domestic carbon markets, delves into legal and policy issues, and explains how informed policy choices can be made when designing national strategies for carbon markets under the Paris Agreement. It assesses the opportunities and challenges with carbon markets, and shares insights on how high-integrity carbon markets can underpin the transition towards a low-carbon economy as countries transition towards net zero.

Steps in Developing and Implementing an Article 6 Strategy



Source: Supporting Preparedness for Article 6 Cooperation, Guide 2 Developing an Article 6 Host Party Strategy, Figure 10.

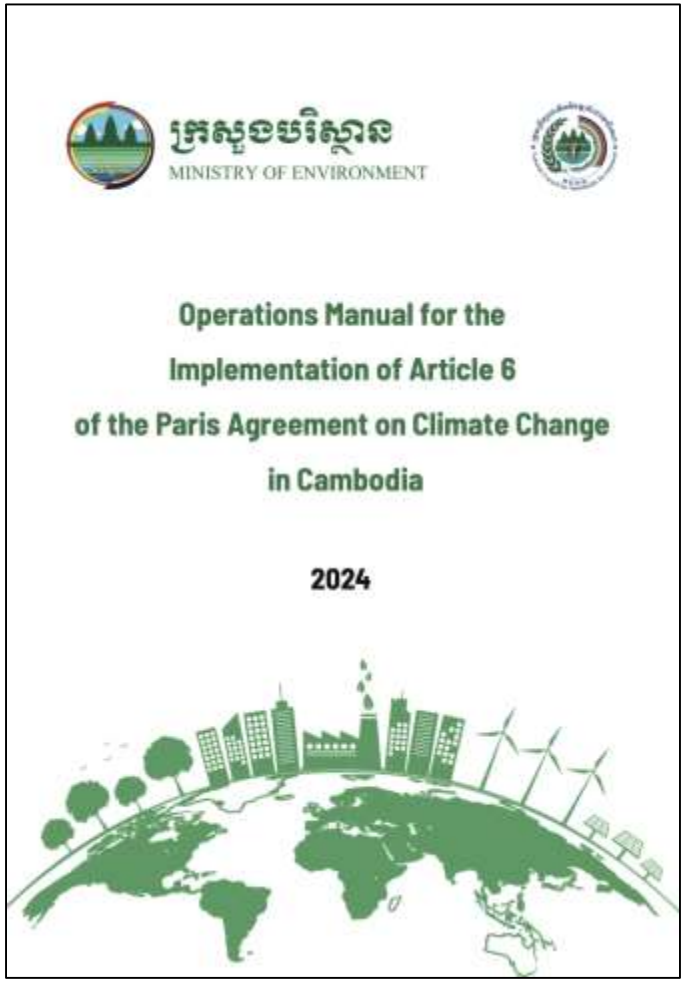
Citation: Heras, Benjamin; Isakova, Irina; Spalding-Fecher, Randall; Hopkins, Mark and Haselip, James. 2023. Developing an Article 6 host party strategy. SPAR6C Guide 2. A GGGI publication.

Cambodia Operations Manual for Implementation of Article 6

Cambodia developed the Operations Manual with the support of the Global Green Growth Institute

Operations Manual

- Offers clarity while retaining flexibility
- Provides guidance on the types of activities that can be pursued through Article 6
- Establishes an institutional framework for managing GHG emission reductions
- Describes approach to authorizations and fees
- Identifies “pilot” and “scale-up” phases for Article 6 engagement



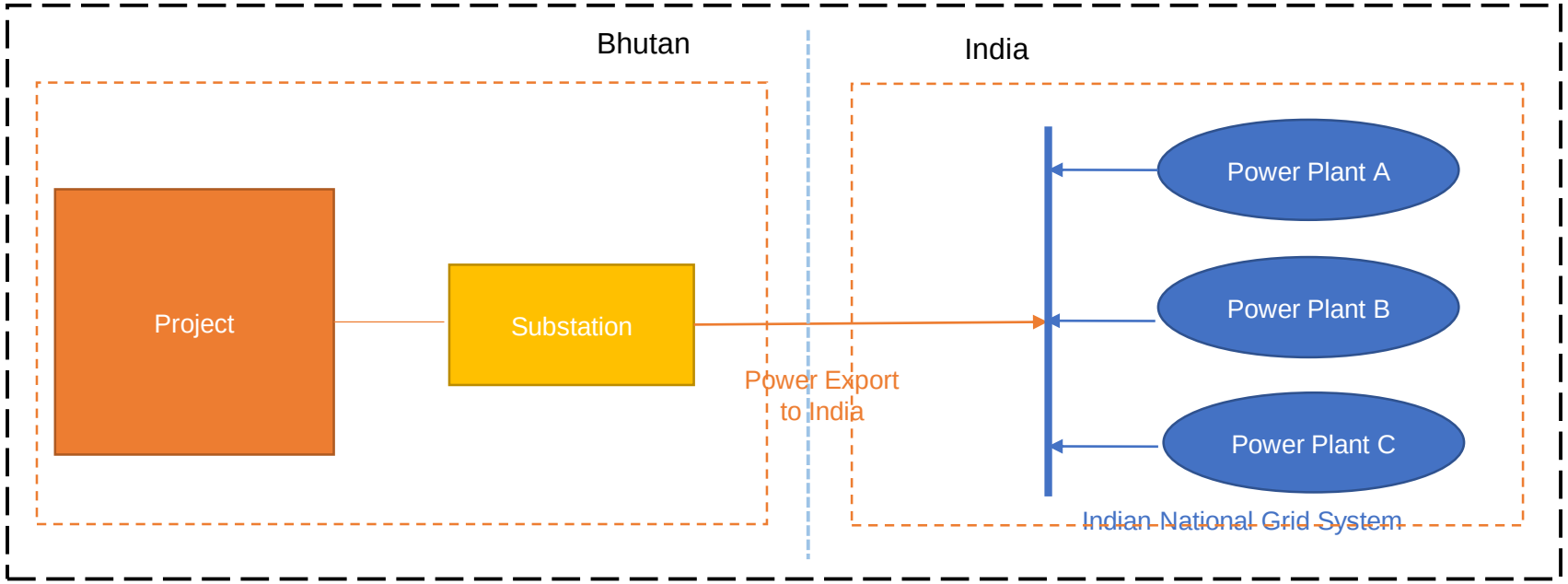
Bhutan: Green Power Development Project

Dagachhu Hydropower Project, CDM (UNFCCC Ref. No. 2746)

GHG EMISSION REDUCTION

- Approx. 380,000 tCO_{2e} per year

- 126-MW run-of-the-river **hydropower project** is located on the Dagachhu River in Dagana district in the south-western part of Bhutan.
- Project is promoted by Druk Green Power Corporation (DGPC) in Bhutan and Tata Power Company Limited (TPC) in India through a public private partnership (PPP).
- Project exports about **392 GWh** of electricity to India annually, which results in reduction of **380,000** tons of CO_2 emissions per annum.
- Project is a **first cross-border project** registered under CDM.



Georgia: Chorokhi Hydro Power Plant Project

Verra VCS Project 1485

- **Greenfield hydro power project** located on Chorokhi river, in Batumi province in Georgia.
- Total installed capacity planned is 98.7 MWe, with a predicted net power supply to grid of 410,800 MWh per annum.
- Ex-ante estimated **emission reduction is 225,312** tonnes CO2e per year.
- First, attempted to register under Clean Development Mechanism but several factors including linkage with Türkiye created complications; subsequently project was **registered with Verra Verified Carbon Standard**.
- **Emission reductions achieved in both Georgia and Türkiye** based on methodology for grid-connected electricity generation from renewable sources.
- **Creates environmental benefits** through supply of clean energy and supports **positive socioeconomic outcomes** through supporting employment.

India: Sustainable Agricultural Land Management Project

Verra VCS Project 3174

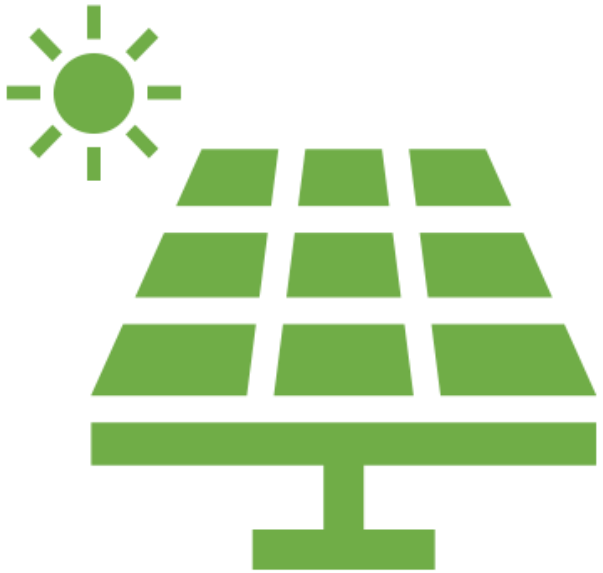
- Location: Wayanad district of **Kerala**, India
- Estimated annual GHG emission reductions and removals are 26,369 tCO2e per year and 776,971 tCO2e for life-time.
- Project aims to **increase the capacity of soil to sequester carbon** and **enhance nutrients** through mulching and integration of compost and vermicompost manure.
- Climate change mitigation outcomes are achieved through:
  - **Reduction of nitrous oxide emissions** by replacing the usage of synthetic chemical fertilizer with environmentally friendly organic fertilizers.
  - **Enhancement of soil organic carbon** by addition of farmyard manure, composts, crop residue and mulch.
  - **Avoidance of crop residue burning**.

Source: Verra, Verified Carbon Standard, Registration Document 2022.

Azerbaijan: Sustainable Agricultural Land Management Project

Gold Standard Project 11985

- Location: Baku and Absheron districts, Azerbaijan.
- Estimated annual GHG emission reductions 275,344 tCO2e per year.
- Project envisions to generate electricity from renewable **solar energy** and **supply it to the national grid.**
- Climate change mitigation outcomes are achieved through:
  - **Displacing grid electricity**, which is dominated by thermal/fossil fuel-based power plants, with new (greenfield) electricity generated by solar PV.
- Project also contributes to sustainable development through:
  - **Generating employment opportunities** during construction and operation phases and development of multi-use regional infrastructure like roads.
  - **Supporting regional development** by reducing the demand supply gap in the state and enabling an investment that would not have happened in the absence of carbon credits.
  - **Reducing resource depletion** and GHG emissions.

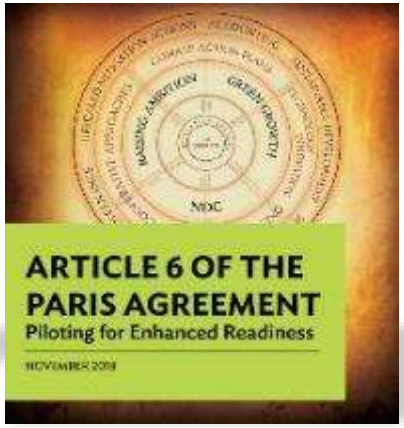


Source: Gold Standard, Project Design Document for GS 11985, 2023.

Article 6 Support Facility

Knowledge Products – Thought Leadership

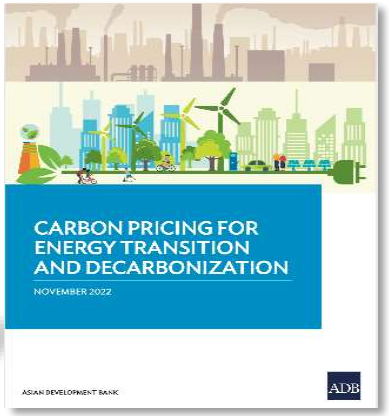
https://www.adb.org/publications/decoding-article-6-paris-agreement



https://www.adb.org/publications/article-6-paris-agreement

https://www.adb.org/publications/negotiations-article-6-paris-agreement

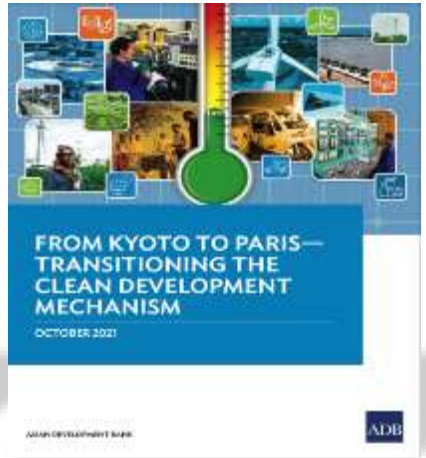
https://www.adb.org/publications/article-6-paris-agreement-lessons-jcm



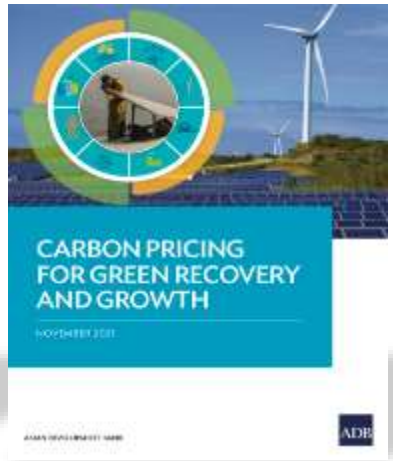
https://www.adb.org/publications/carbon-pricing-energy-transition-decarbonization

https://www.adb.org/publications/carbon-offsetting-international-aviation-asia-pacific

https://www.adb.org/publications/decoding-article-6-paris-agreement-v2



https://www.adb.org/publications/kyoto-Paris-clean-development-mechanism



https://www.adb.org/publications/carbon-pricing-green-recovery-growth

https://www.adb.org/publications/article-6-paris-agreement-lessons-jcm-v2

Discussion Question

Does the presented readiness assessment accurately reflect your circumstances?

(please select one)

(a) Yes

(b) No

(c) Not sure

Discussion Question

What additional case studies are you interested in?

(please select one)

(a) Small scale projects with many dispersed participants

(b) Large projects carried out at a specific facility

(c) Projects and programs involving cross-border elements

(d) Other

Thank You!