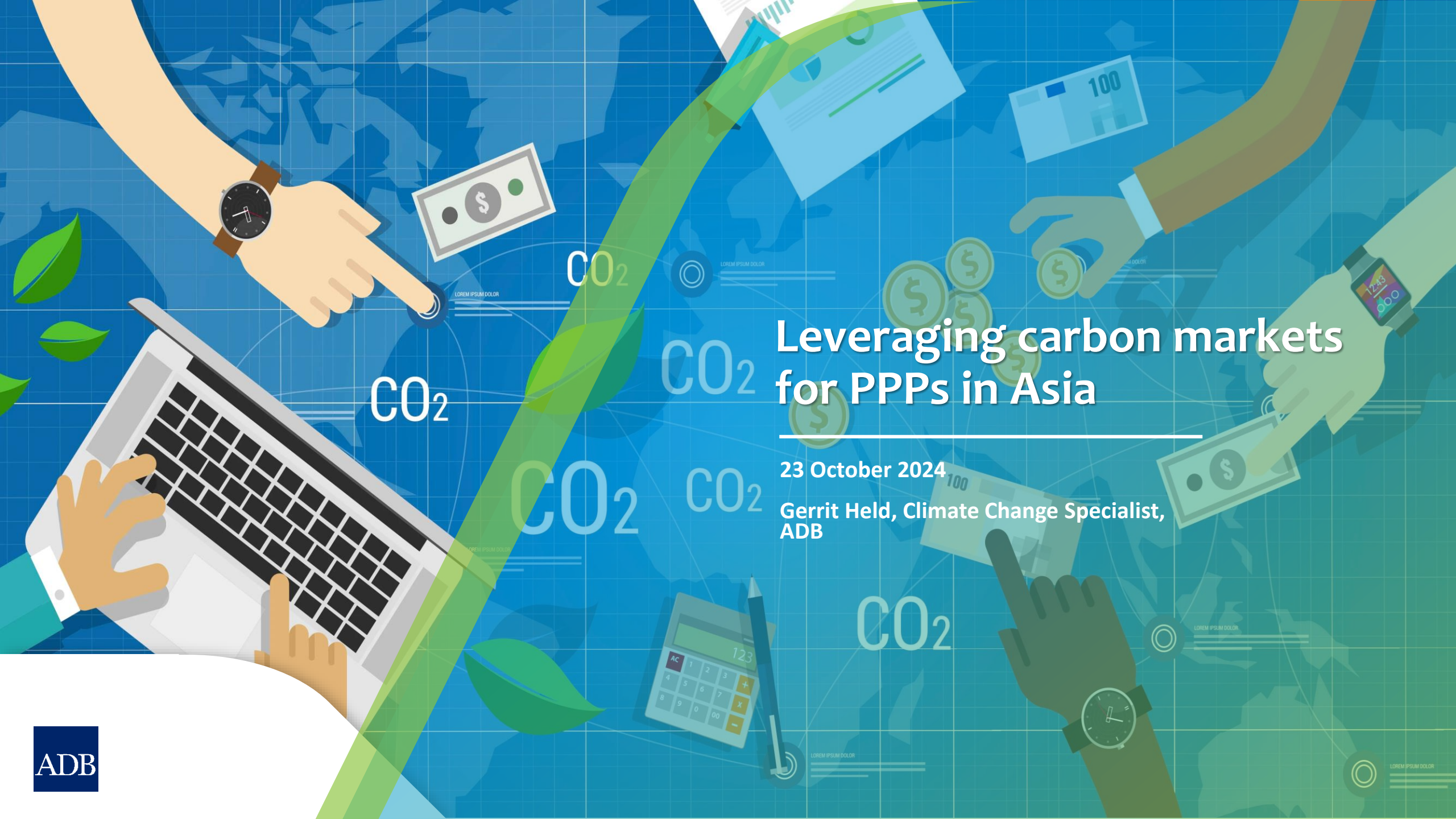


Leveraging carbon markets for PPPs in Asia

23 October 2024

Gerrit Held, Climate Change Specialist, ADB

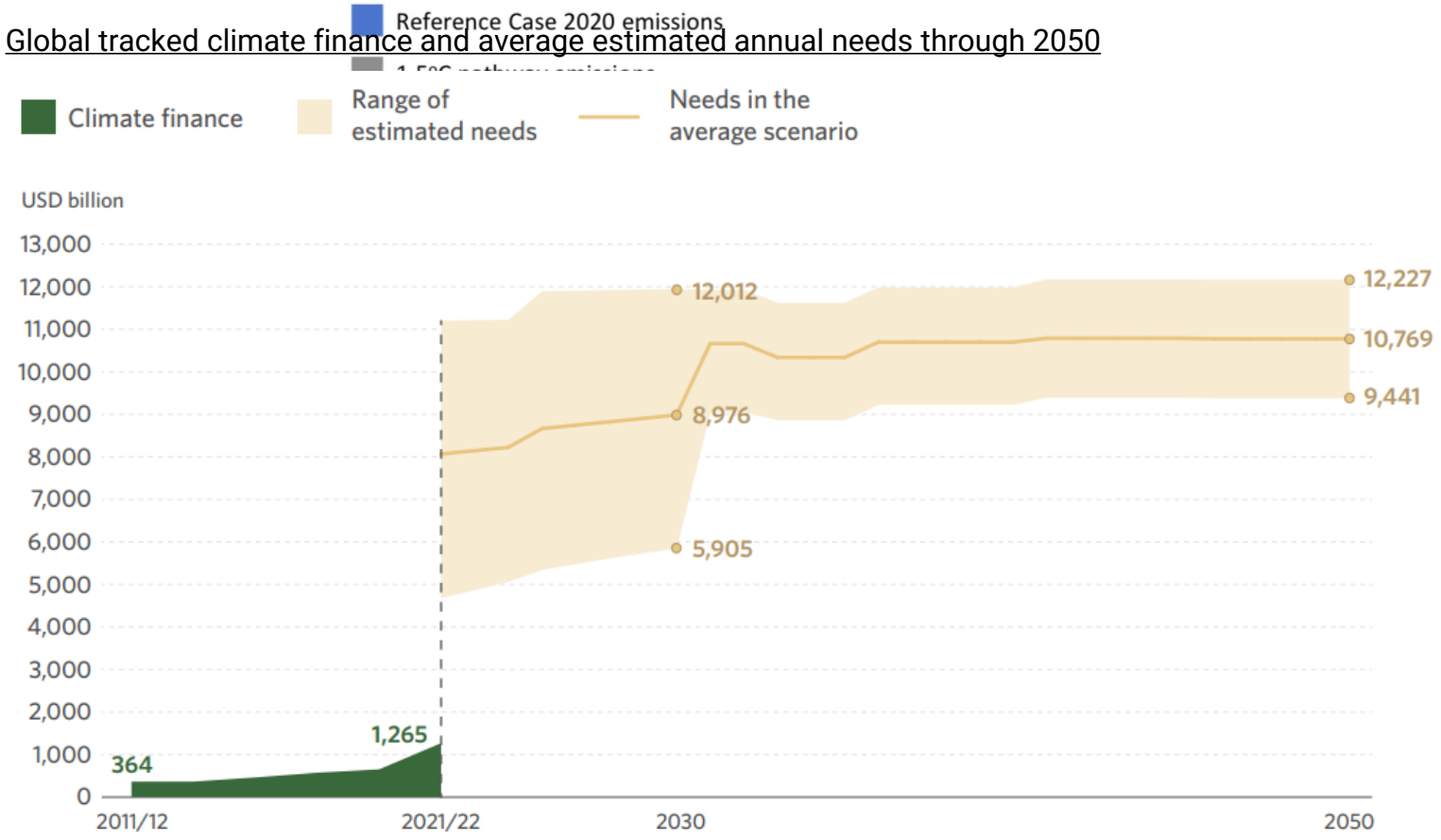
ADB

What we want to achieve and how?

- The public sector alone will not be able to fill the climate investment gap without mobilizing private capital;
- As demand for fundamental and essential infrastructure remains high in Asia, PPPs will be instrumental to generate the supply of investable projects.
- If structured correctly, PPPs can increase climate resilience and incentive green investment opportunities.
- PPPs are able to provide well informed and well-balanced risk allocation between partners— offering long-term visibility and stability for the duration of a contract

Source: McKinsey 1.5oC Scenario Analysis; IPCC; Le Quéré et al. 2018

Global tracked climate finance and average estimated annual needs through 2050

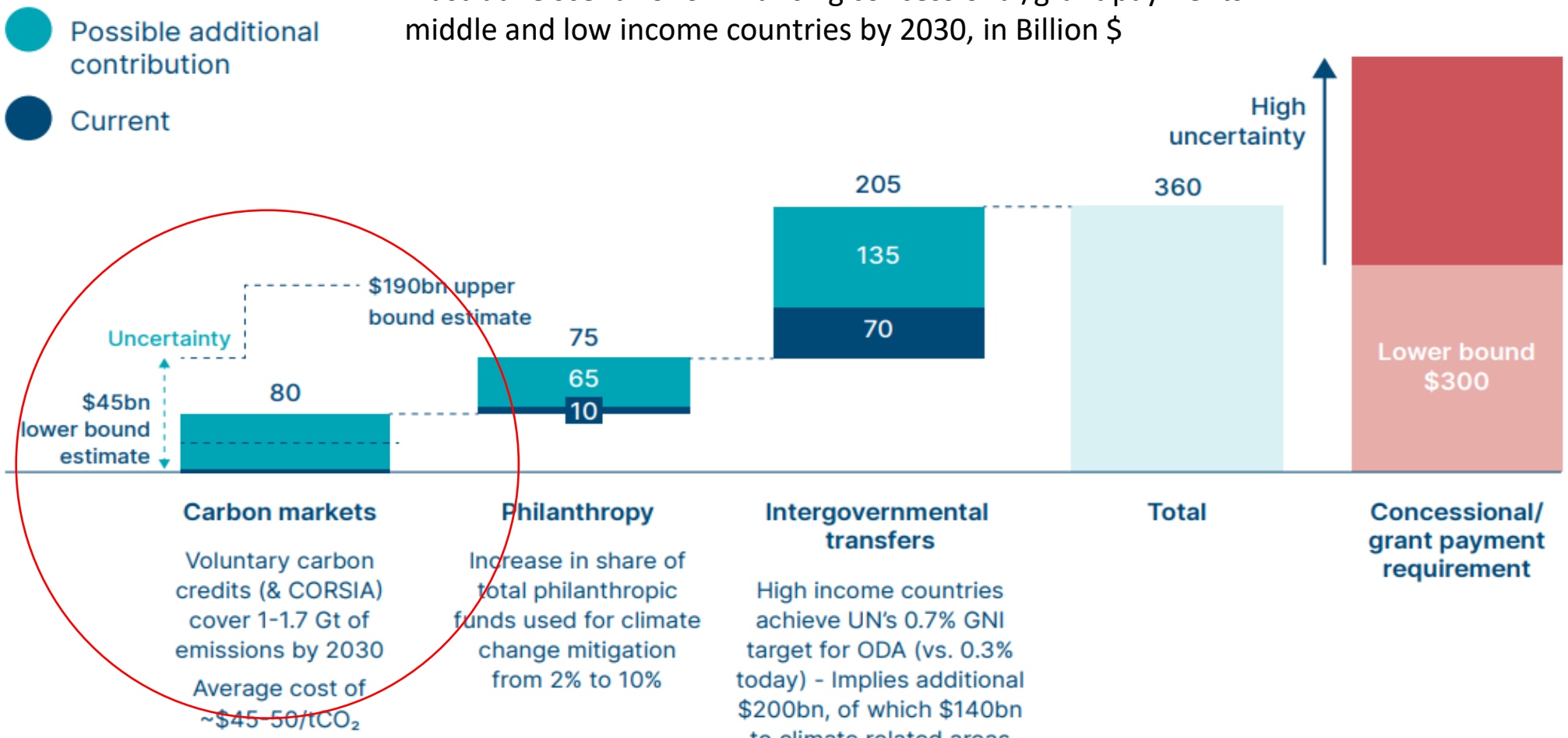


Note: Climate finance needs estimates for 2023-2050 include direct investments in climate-specific physical assets and excludes transition-related unabated fossil fuel finance. Estimates are based on secondary data collected from over 15 sectoral scenarios (see Methodology document for detail). Climate finance needs for 2023-2050 are expressed in 2022 USD to ensure comparability of estimates from several different scenarios.

Source: Global Landscape of Climate finance 2023 CPI

Carbon markets are part of the broader arsenal of tools to get there

Illustrative scenario for financing concessional/grant payments in middle and low income countries by 2030, in Billion $

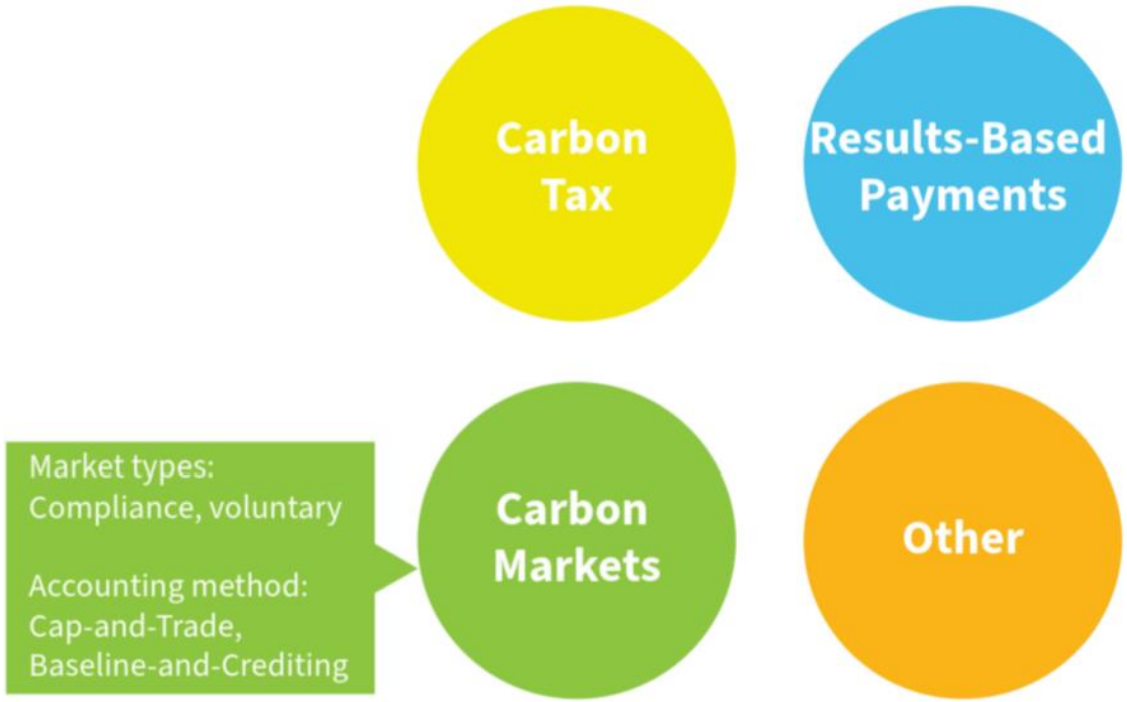


Source: Energy Transition Commission: Financing the Transition to Net Zero

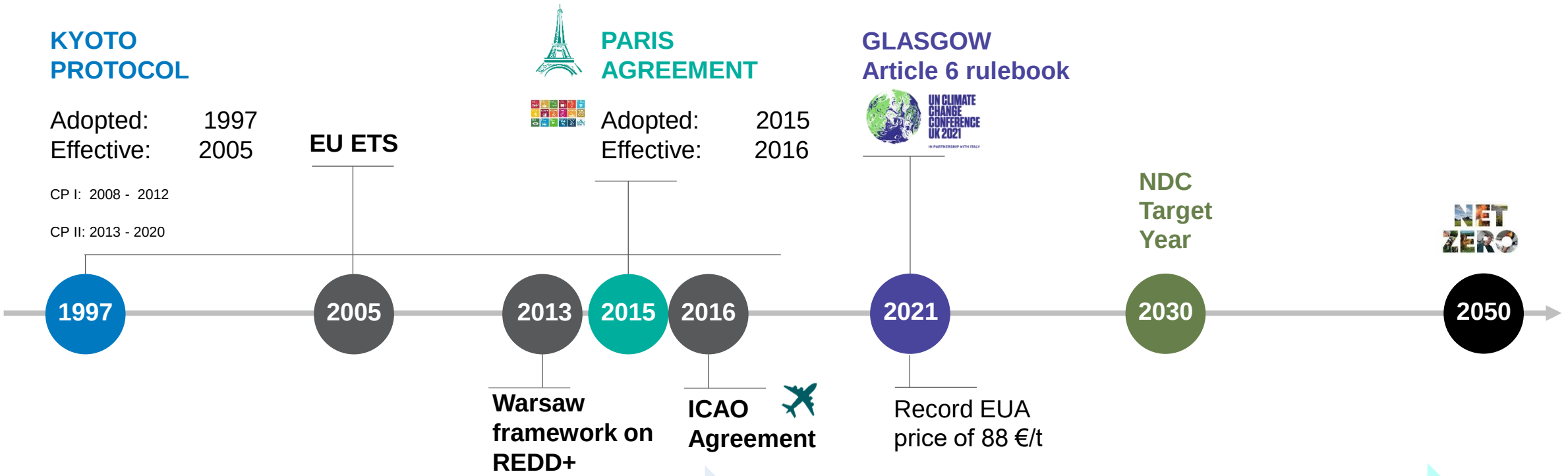
Quick recap: What are carbon markets?

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. CDM, JCM) and **emissions trading** (EU ETS, California)



Quick recap: Evolution of International Carbon markets under UNFCCC



KYOTO MECHANISMS – till 2020

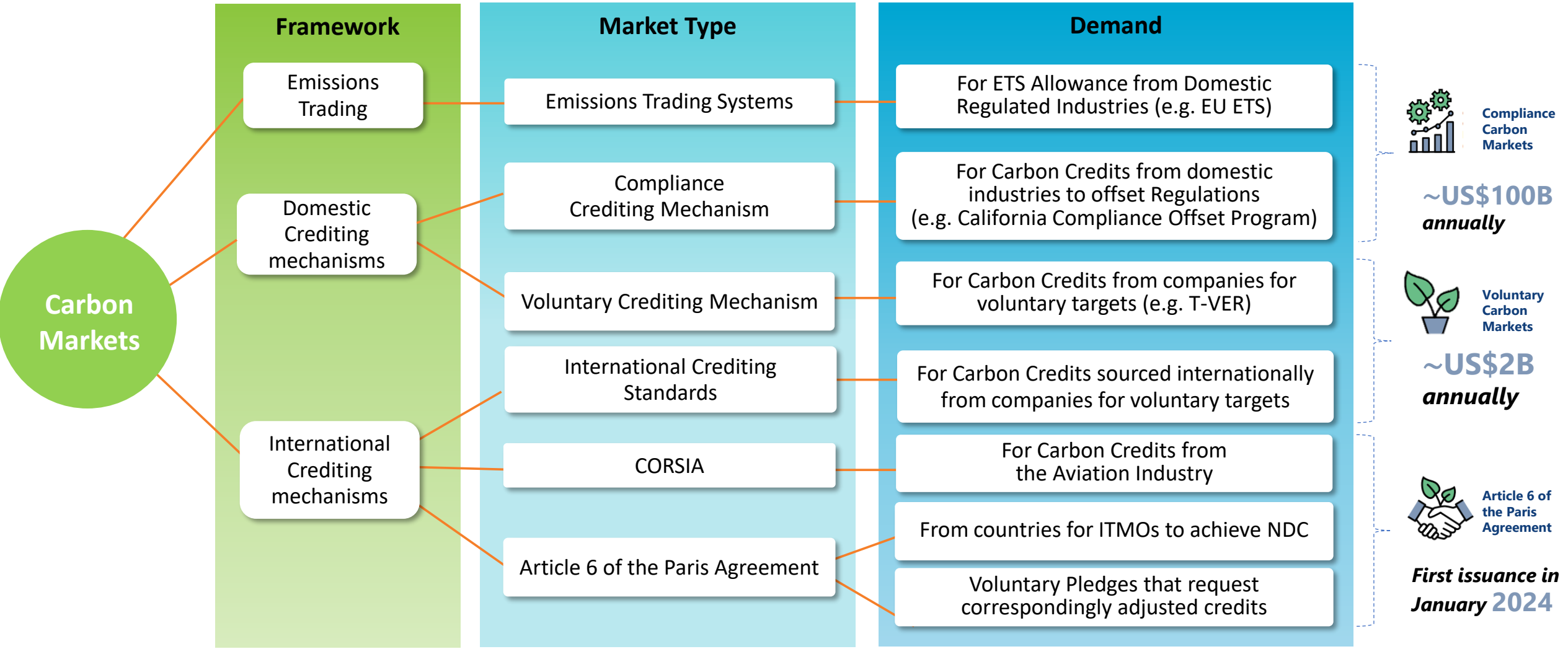
- International Emissions Trading Art. 17
- Clean Development Mechanism Art.12
- Joint Implementation Art. 6

PARIS MECHANISMS – post 2020

- G2G Cooperative Mechanism Art. 6.2
- Paris Agreement Crediting Mechanism Art. 6.4

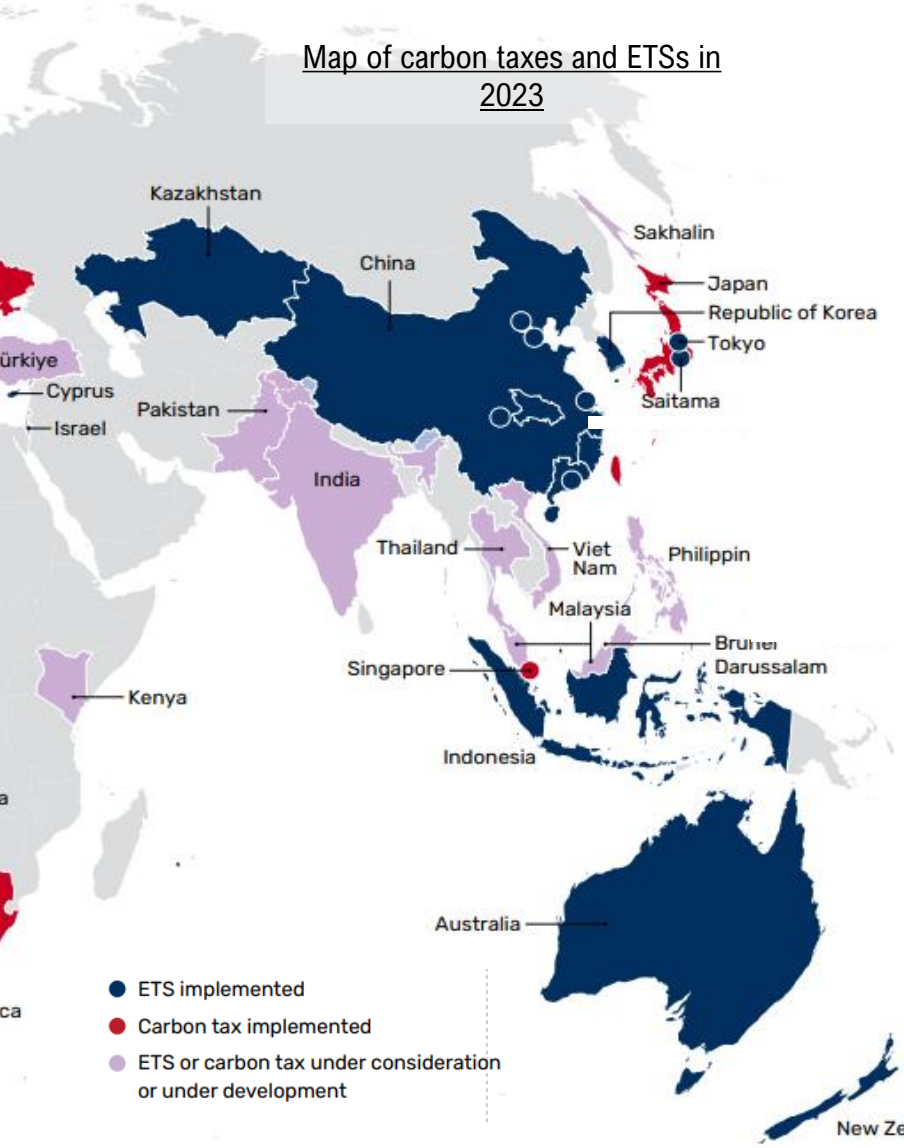
Domestic Emissions Trading Schemes for cost-effective compliance with national / regional targets

Quick recap: What are the types of Carbon Markets today?



Asia is primed to play a major role in international carbon crediting markets

Map of carbon taxes and ETSs in 2023



$104Bn

Total revenue through carbon pricing in 2023, majority from EU ETS

KZ, INO, PRC

To date the only DMCs with an active ETS

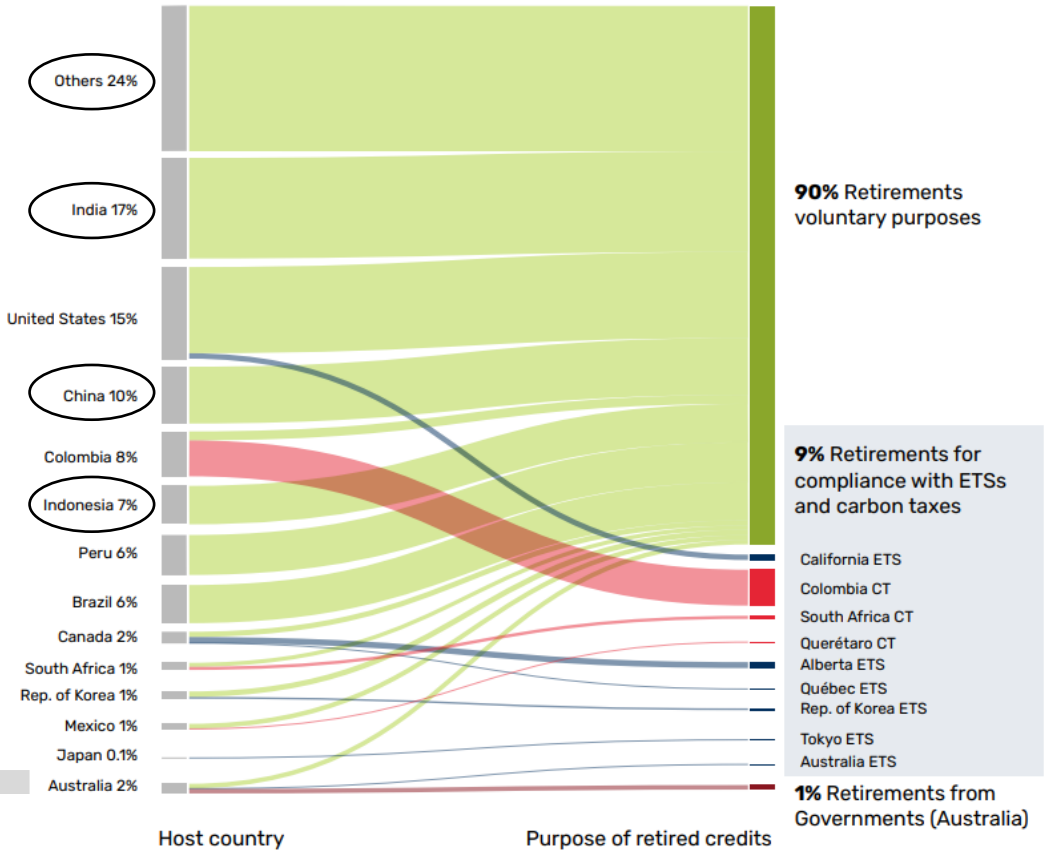
4

DMCs (India, Vietnam, Thailand, Malaysia and Philippines are considering CPIs

CBAM

Gives the EU ETS a global reach, starting to affect all DMCs by 2024 (MRV), and fiscally by 2027

Carbon credit retirements by host countries to major markets in 2023



While the region's carbon markets may not be as large as Europe's, Asia is the world's primary hub for international carbon trading and represents the largest carbon credit supply.

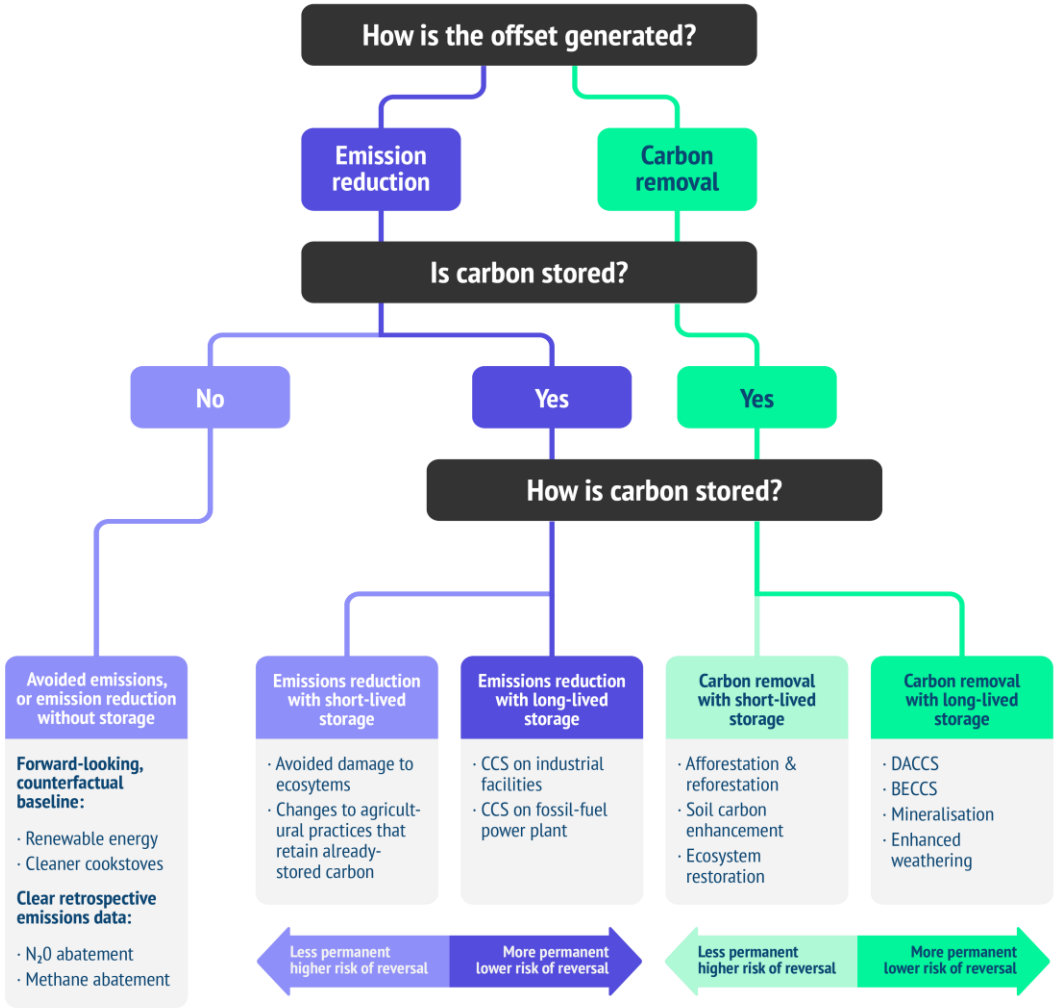
Projects / technologies eligible for carbon credits

1. Project types

Renewable Energy	• Renewable power infrastructures that contribute to the decarbonization of the local energy grid (RE, ETM, transmission)
Coal retirement	• Transition credits from accelerated coal or fossil fuel phase out
Energy Efficiency and Fuel Switching	• Energy-saving measures that reduce carbon emissions on the demand side incl. district heating, cooling, clean cooking
Water and waste management	• Methane recovery and utilization from landfill or waste-water treatment projects. Reduced water loss and non-revenue water
Low carbon transport	• Decarbonization of road, air and sea transport including through E-Mobility and modal shift (BRT, Rail PPPs)
Forestry and land-use	• Improved forest management and protection of existing forest areas threatened by deforestation (incl. Blue Carbon)

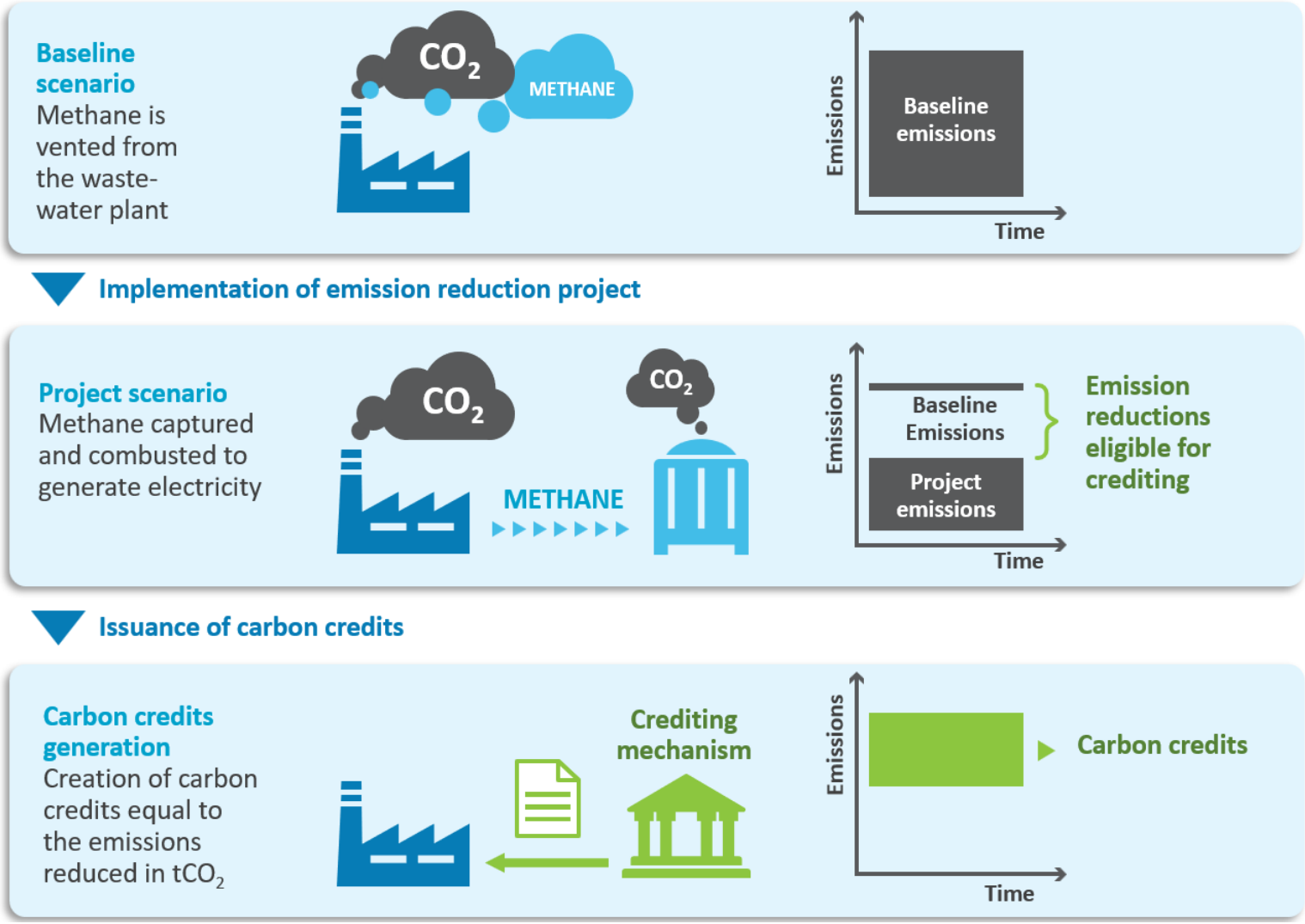
2. Environmental integrity considerations

Recognized carbon Standard	• Projects must achieve certification under a relevant standard in order to be able to generate carbon credits (e.g. UNFCCC, Verra, Gold Standard)
Additionality	• The GHGe reductions or removals from the mitigation activity must be additional i.e. they would not have occurred in the absence of the incentive created by the carbon credit revenue stream
Robust quantification of results	• Emission reductions/removals must be robustly quantified, based on conservative approaches, completeness and sound scientific methods
No double counting	• The impact from the mitigation activity shall not be double counted

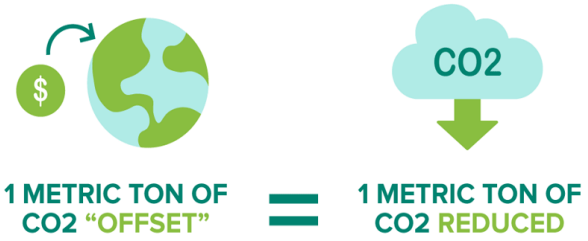


Source: Oxford Carbon offsetting Taxonomy (2023)

Baseline setting is at the crux of environmental integrity



- A governing body issues credits to entities that demonstrate having generated qualifying emission reductions.
- Examples of baseline-and-crediting system: JCM, CDM, JI, voluntary (Gold Standard, Verified Carbon Standard/Verra)
- Basis of emission reductions (credits) = baseline emissions – project emissions – leakage

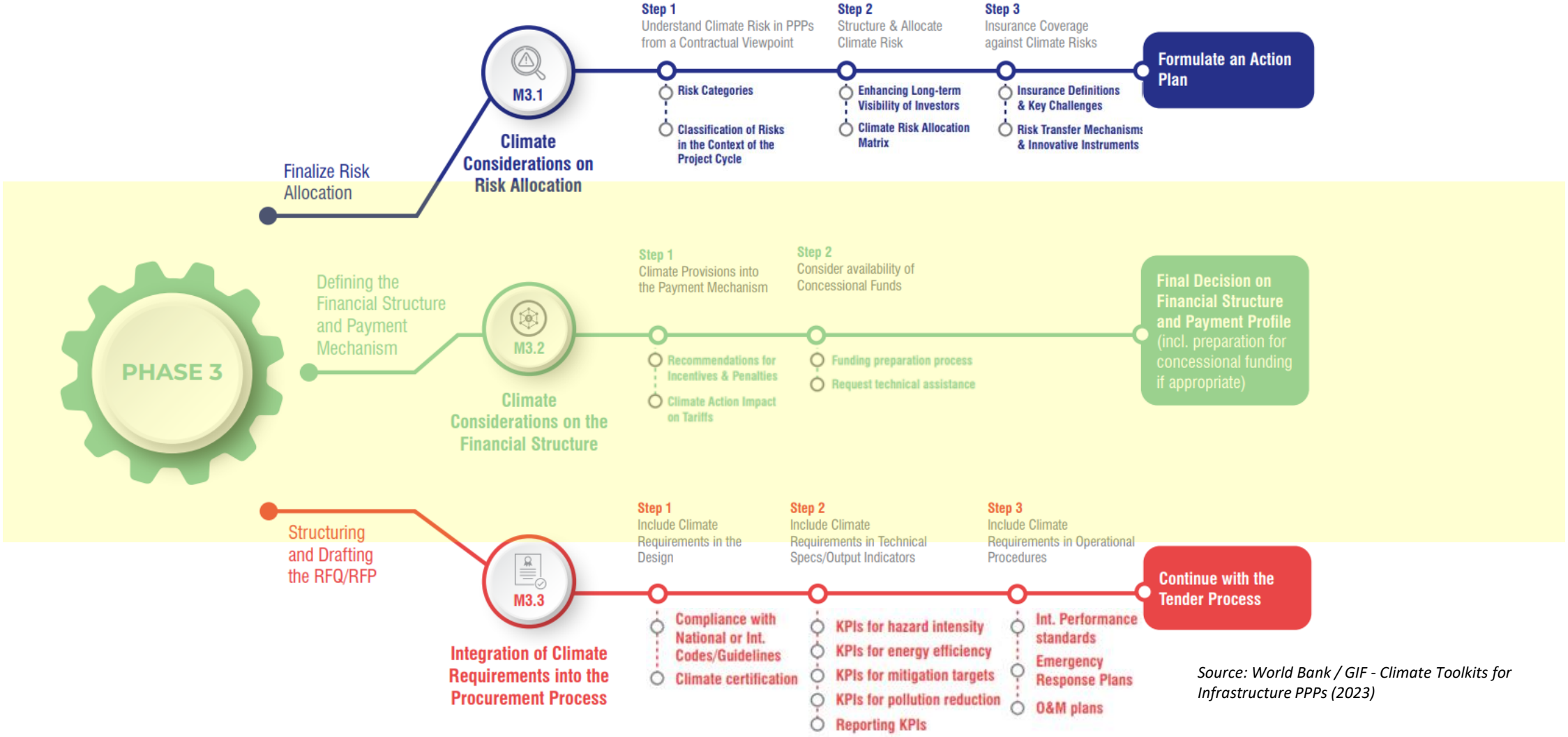


Source: Adapted from World Bank, 2020

What does this all mean for PPPs?

Phase 3

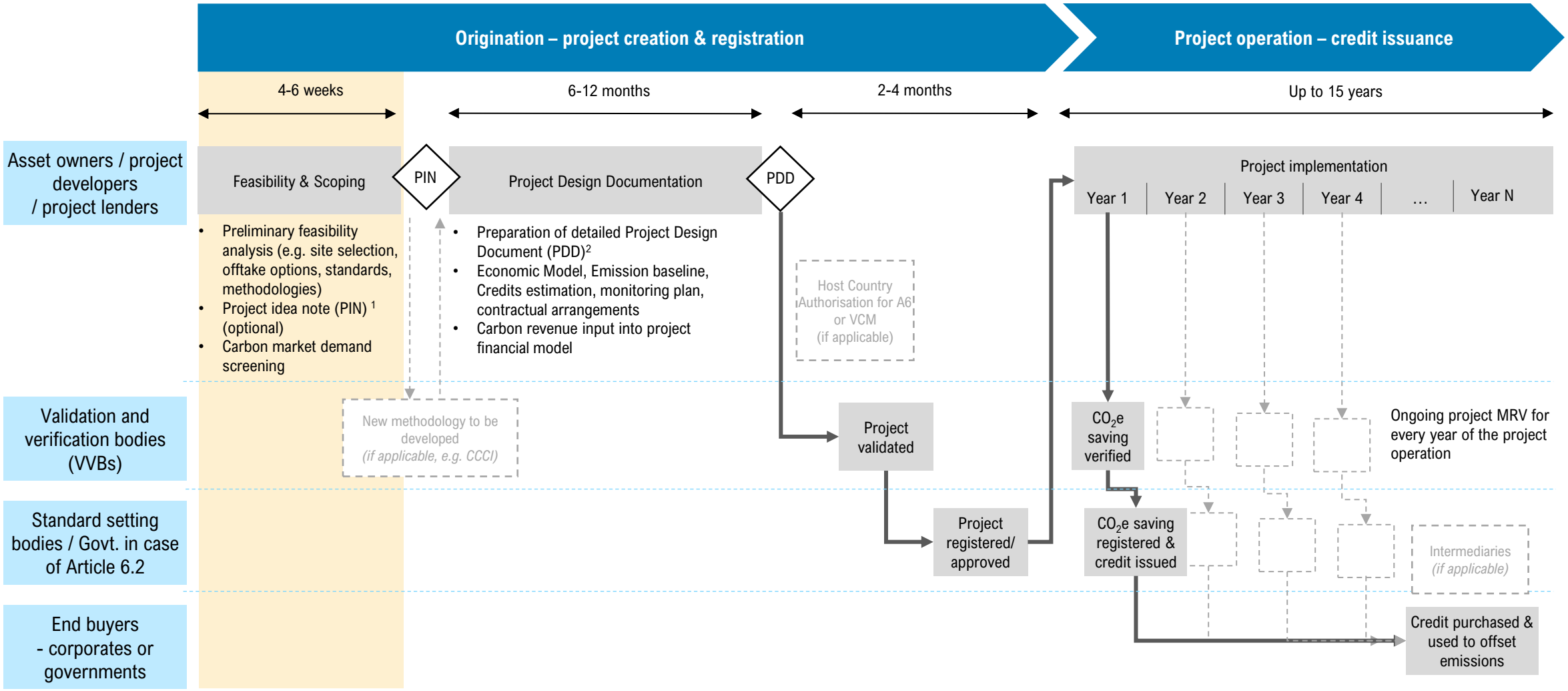
Project structuring and procurement



Source: World Bank / GIF - Climate Toolkits for Infrastructure PPPs (2023)

Early engagement is key given long carbon development cycle

To conceptualize, develop and register a new project can take 6 months up to several years, depending on the standard or buyer requirements, and requires detailed documentation as well as early on engagement. The operation of a project includes ongoing monitoring and verification, typically on an annual basis. The number of credits issued in a year is determined by the amount of verified emission reductions / removals.

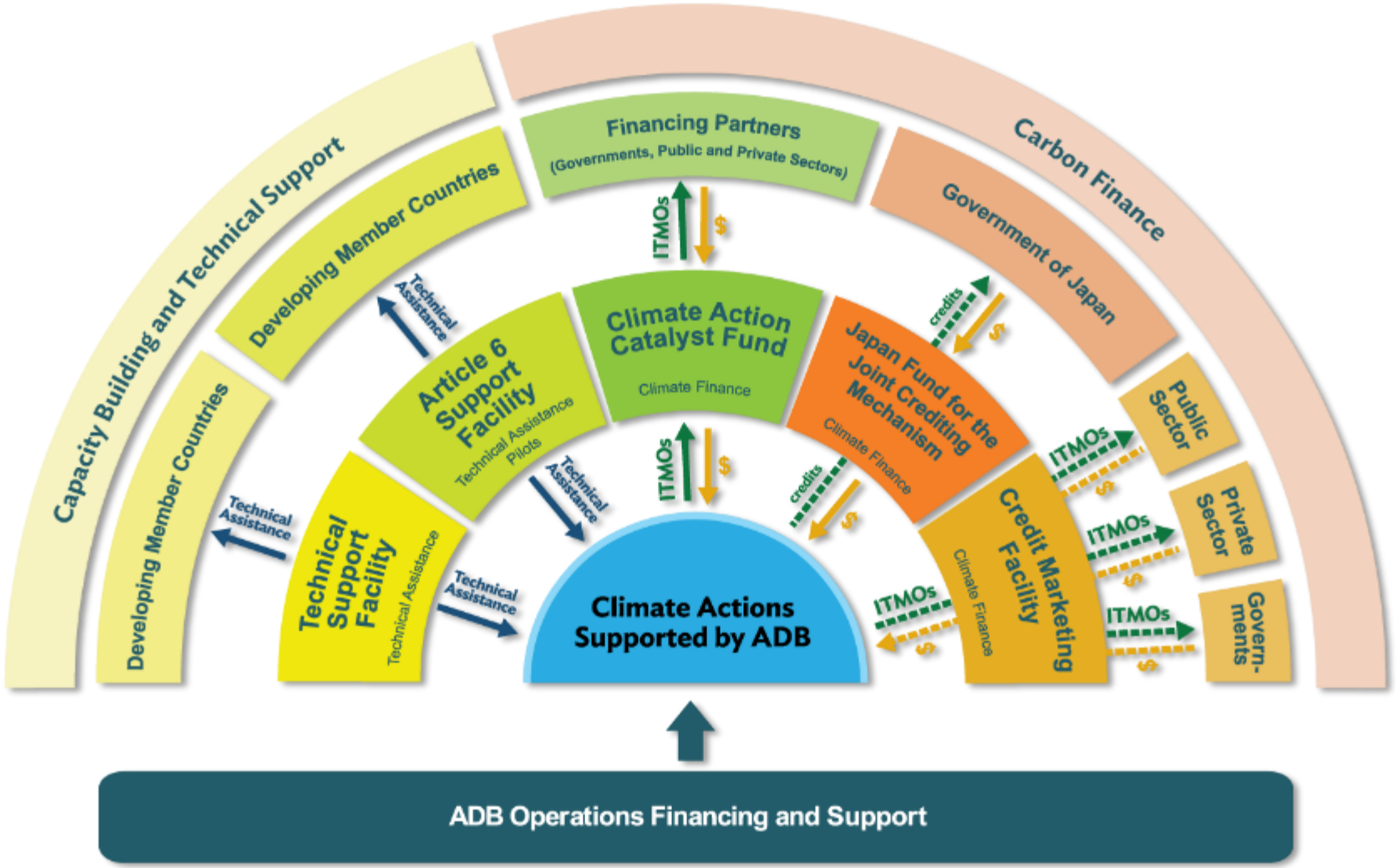


[1] *Also called Project Information Note, PIN is a short description of project owner, location, developer, partners/stakeholders, goal, activities summary, expected schedule, lifetime, carbon credits estimate, finance.*
[2] *PDD preparation has to follow the requirements and methodology of the buyer (e.g. JCM) or chosen standard (e.g., Gold Standard, Verra) and is also referred to as Mitigation Action Design Document (MADD)*

ADB menu for PPP support

ADB's Carbon Funds and TA Support Facilities

- Carbon finance
- Technical support
- Capacity building
- Knowledge support



Three pillars of carbon market advisory for PPPs

1

Upstream

Carbon market policy dialogue and capacity building

Support DMCs with gap assessments, the development of enabling frameworks and policies to access carbon markets:

i. Conduct diagnostic studies to improve DMC's existing legal, institutional and regulatory policies

ii. Support the set up of essential carbon trading infrastructure (registries, national MRV)

iii. Provide strategic guidance on how to attract carbon finance to support national climate policy and investment priorities

2

Midstream

Carbon asset preparation and development support

Identify project opportunities and support the carbon asset design, preparation and development process:

i. Conduct in-depth feasibility studies to assess project eligibility both from market and methodological point of view. Develop new methodologies if needed;

ii. Ex-ante estimation of carbon credit potential and development of Project Design Documentation (PDD),

iii. Support validation of PDD and facilitate project registration

3

Downstream

Market making and carbon credit monetization support

Assist clients in identifying best offtake avenues and facilitate the marketing and trading of carbon credits:

i. Advising clients on best options to sell credits into the market and fair revenue split w. developers

ii. Acting as trustworthy intermediary, connecting buyers and sellers in the market

iii. Mobilize advance purchase commitments to offer pre-arranged financing packages to PPP bidders e.g. ADB carbon funds, buyer pools

Type of support depends on DMCs carbon market readiness, buyer interest and availability of suitable pipeline of high impact projects.

Upstream

Supporting the development of carbon market enabling frameworks

- NDC / LTS target prioritization
- Understanding potential for carbon markets and processes to be followed
- Inter-ministerial coordination
- Interlinkages between compliance and voluntary markets

Country level regulation for carbon markets

A. Carbon market strategy

B. Carbon pricing & revenue sharing mechanism

C. Accounting & Reporting Infrastructure

Capacity building needs assessment / diagnostic

Institutional and governance arrangements are key to execute DMCs carbon market engagement.

They say that I need multiple strategies to prepare the carbon market recipe, so we vited an expert"

Upstream

Example: Carbon market readiness support in Timor-Leste & Philippines

Diagnostic Study, Gap Analysis and Recommendations

- Conduct a **diagnostic study** on the countries' existing legal, institutional, commercial and technical frameworks, policies and processes related to the approval, generation, registration, monitoring, and trading of carbon credits independently and against the existing framework and best practices
- Conduct a **gap analysis** so that the gaps identified can be filled with the next stage's implementation support

Stakeholder Consultations and Workshops

- **Conduct workshops** to present findings from the diagnostic study and gap analysis
- Facilitate **consensus-building** regarding the required steps to operationalize necessary approval procedures, GHG accounting and reporting infrastructure
- **Finalize and formulate recommendations** for securing consents from the Government of Timor-Leste (GoTL) and Philippines (GoP)

Development and adoption of carbon market policy framework

- **Implement recommendations** from the diagnostic study and gap analysis to allow approval, generation, registration, monitoring and sale of carbon credits under Article 6 of the Paris Agreement
- Formal adoption of a **Carbon Market Operational Manual and policy framework** detailing out the carbon market strategy, pricing approach and authorisation procedures

Testing and implementation of first pilot transaction

- Help the GoTL and GoP **identify potential pilot mitigation activities** and provide technical support to ensure **pilot projects are trade-ready** for international carbon markets (including voluntary and Article 6.2, VCM and 6.4 carbon markets)
- Support the GoTL and GoP in negotiating and signing bilateral agreements / MoUs with potential Article 6 buyers

Midstream

Carbon asset advisory services from design to project delivery

Eligibility check

Full DD with support of Technical Consultants

ADB carbon project advisory

Initial scoping of carbon credit potential from market & methodological point of view

If confirmed, ADB, with support of technical experts and environmental specialists, can step in as Transaction Advisor to support the carbon asset development process to during the project design and development stage.

- Submission of concept/PDD to the selected carbon standard / buyer for endorsement
- brokering of carbon offtake contract & advise on risk sharing mechanisms & fee structure
- Preparing relevant tender/procurement documents

Post commercial closure support by ensuring the monitoring plan is followed in full during implementation. If needed, help prepare the first monitoring report following the requirements of the selected carbon standard.

Project conceptualization

Preparation & Marketing

Bidding process & documentation

Contract Award

Financial Closure

Monitoring of project implementation

Midstream

Illustrative examples of ongoing PPP advisory mandates

Earl retirement of CFPPs

Transition credit pilots being explored:
ADB ETM (Mindanao)

Nature based solutions & Blue Carbon

Mangrove restoration, Afforestation, Improved Forest Management

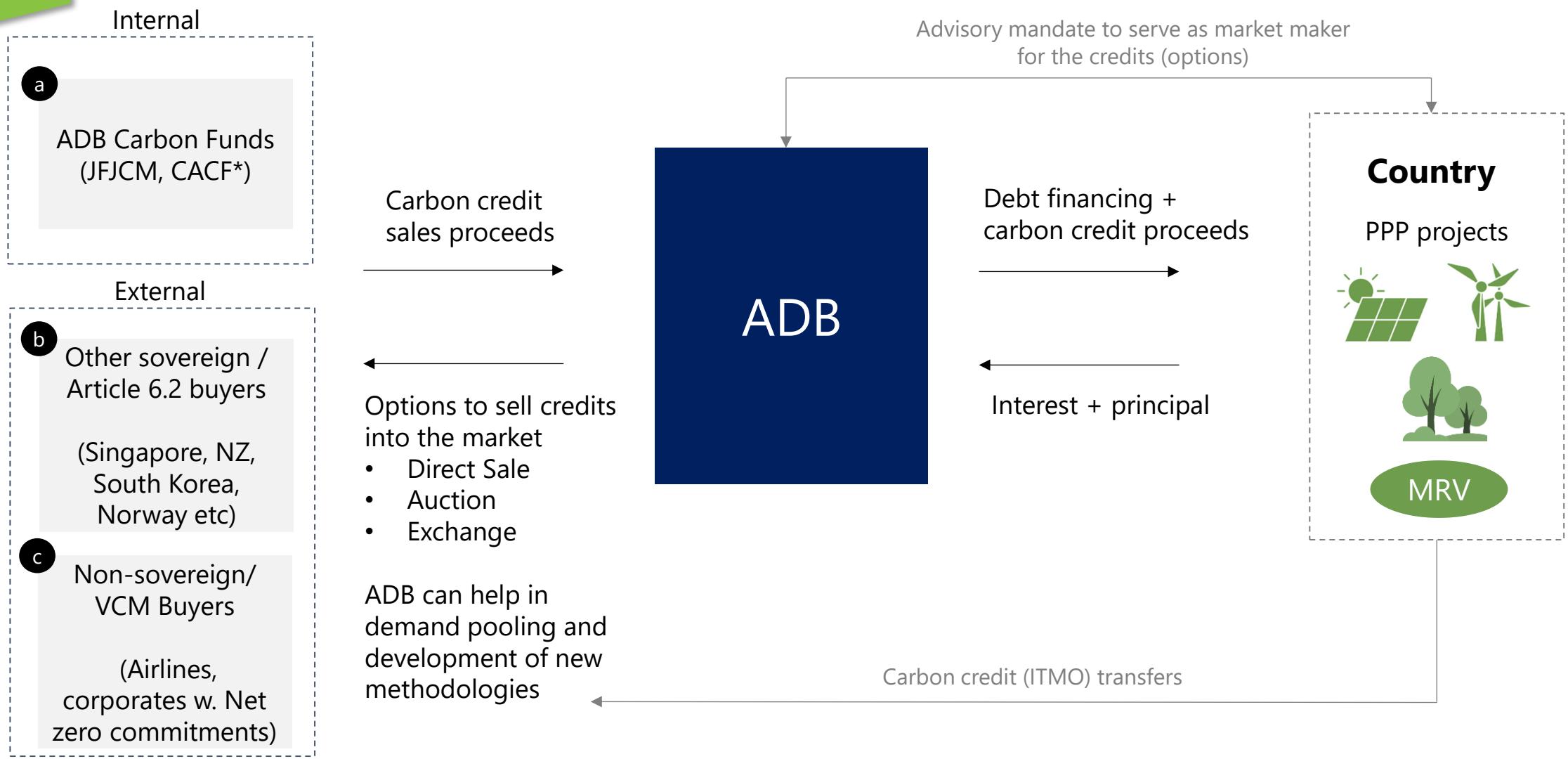
Waste sector – landfills and wastewater

Methane capture through land fill gas recovery or waste to energy projects

Only illustrative

Downstream

Acting as 'honest' broker in the carbon credit monetization process



CACF = Climate Action Catalyst Fund, JFJCM = Japan Fund for the Joint Crediting Mechanism

Example: Waste to Energy in Maldives

Project name	Greater Male Waste to Energy Project
JFJCM grant	$10 million
Technology supported	Waste to energy plant (incineration)
Description	The project will establish an integrated regional solid waste management system in Greater Male consisting of collection, transfer, treatment using advanced waste-to-energy (WtE) technology, disposal, recycling, and dumpsite closure and remediation. The WtE facility can process 500 tons/day of municipal solid waste, with up to 12 MW power generation. Installation of MSW incinerators avoids emissions of methane associated with disposed organic waste in a solid waste disposal site.
Location	Thilafushi, Maldives
Emission reductions	40.4 thousand tCO_2e/year (estimate) *Average of emission reductions for 20 years

Annex

The VCM Buyer Landscape

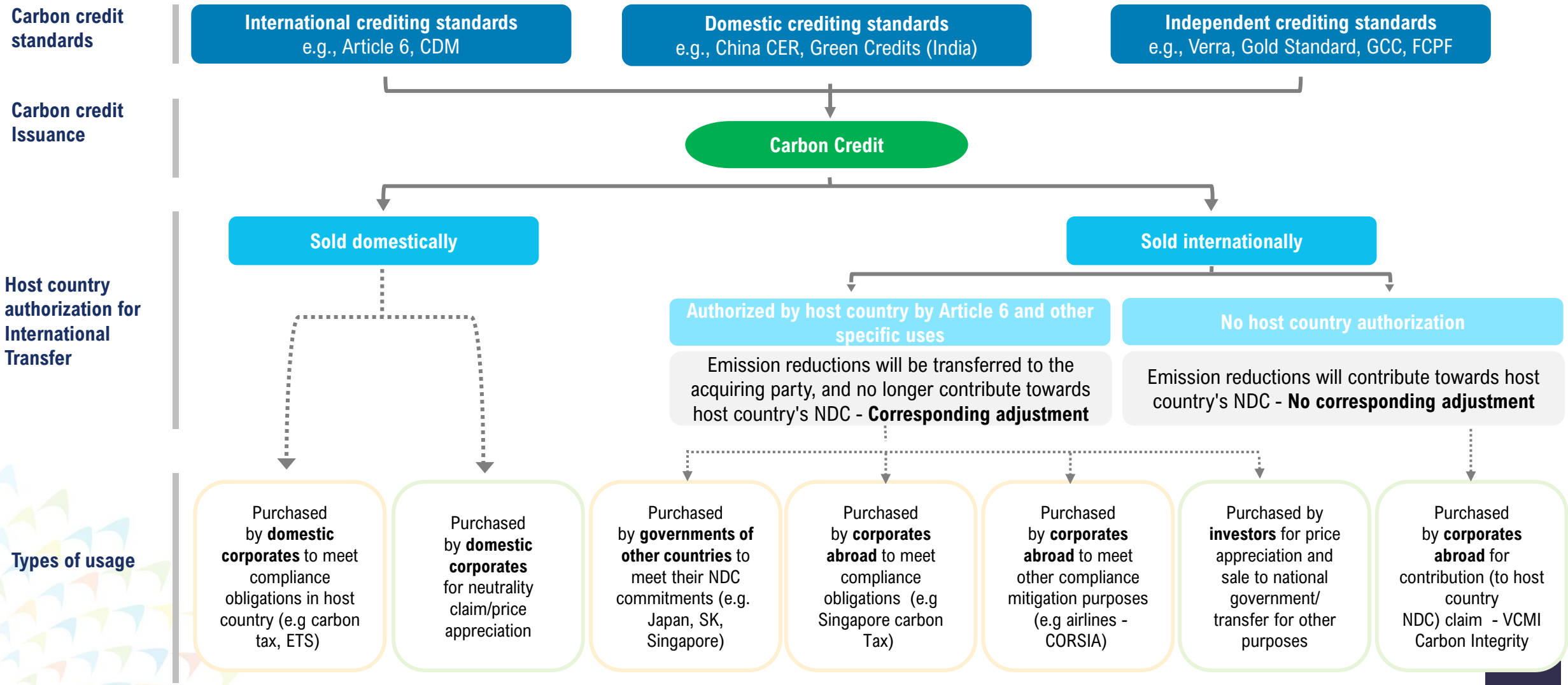
Who buys?

- Companies that adopt an internal carbon price
- Companies that adopt mitigation targets and publicly disclose their emissions

Developments in Asia and the Pacific

- Strongest growth in companies in adopting internal carbon price
- Disclosure growing across all sectors
- Still low levels of ambition

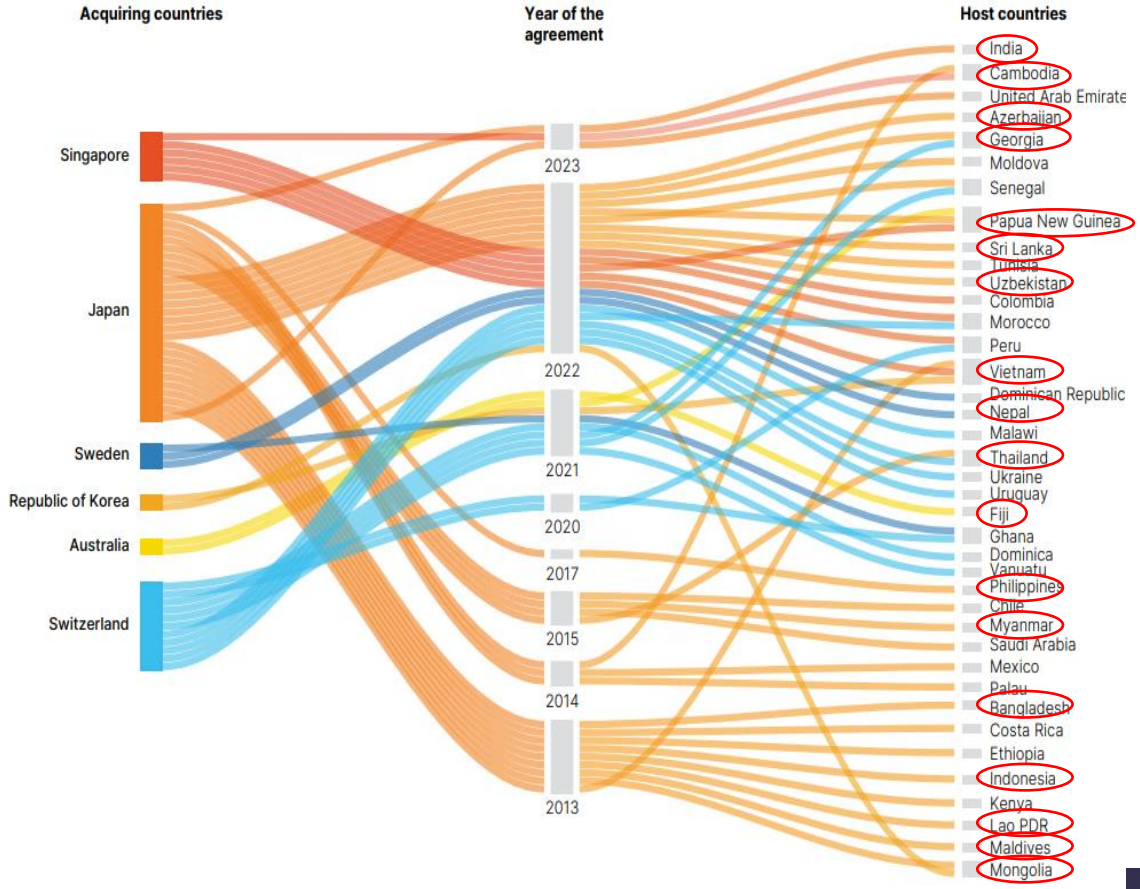
Carbon credits can be sold in various markets for different end-uses



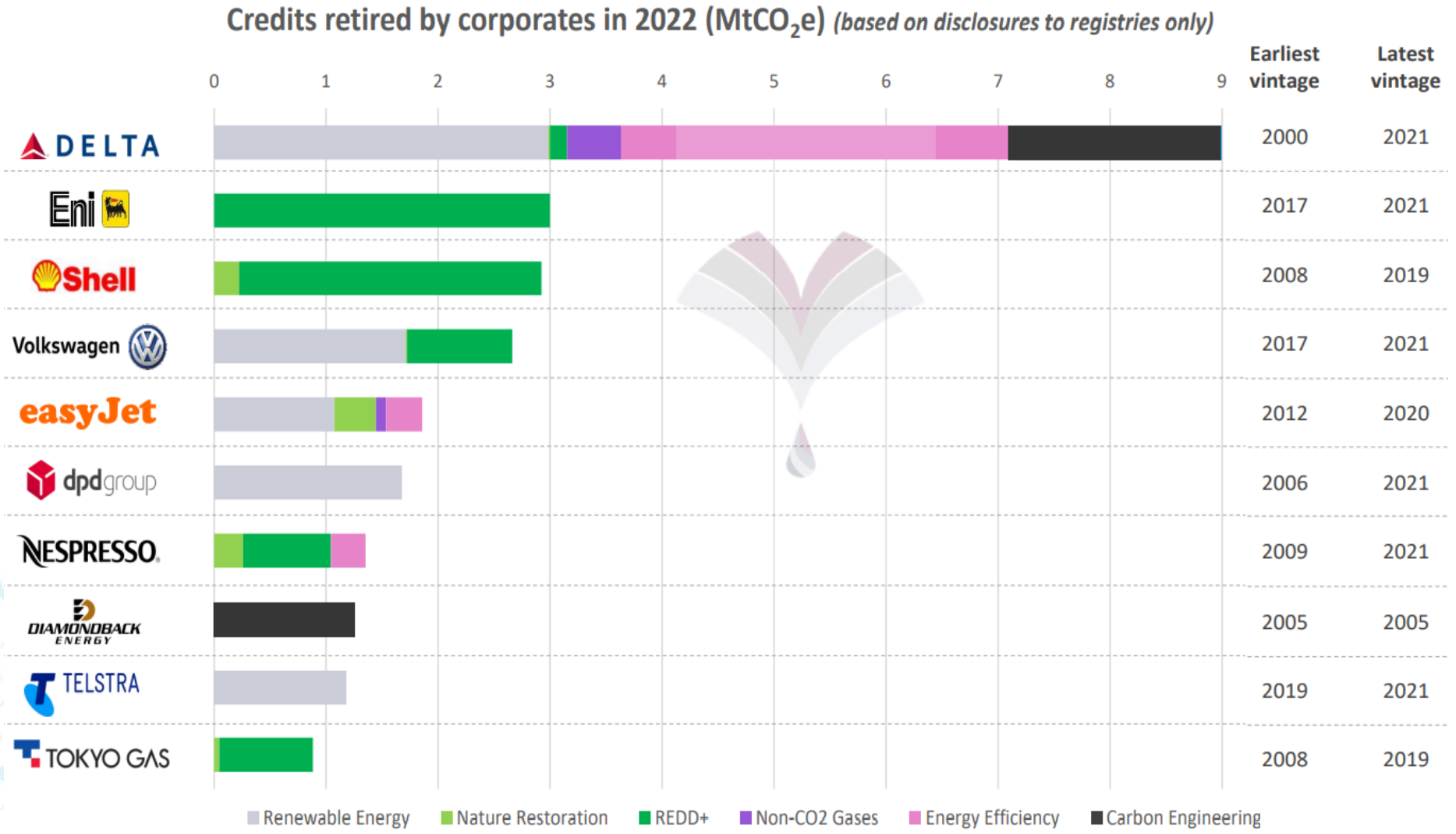
The Paris-era sovereign to sovereign Article 6.2 market presents an aggregate demand of over 250 million credits (tCO2e)

The Article 6 market is currently highly fragmented with buyers trying to impose different terms and conditions upon transactions. In order for a country to engage, it first needs to sign a bilateral agreement / MoU with the buying country. The increasing number of bilateral agreements in Asia shows that ever more governments consider Article 6 an important tool to reach their NDC targets.

Sovereign buyers	Volume of MtCO2	Price per tCO2	Max $ per project	Existing funds	Target year
Japan	100	< $ 40	$ 13 M	Yes (JFJCM)	2050
Switzerland	40	< $ 50	-	No	2030
Sweden	20	$50 - 100	-	Yes (CACF)	2050
South Korea	32.5	$ 22.5	-	No	2030
Norway	60	$ 14	-	No	2050
Singapore	40	$10-15	-	No	2030
Australia	?	?	?	No	?



At the same time, corporate demand for carbon credits could significantly scale up by 2030 – Airlines, Oil & gas companies among largest buyers in 2022



Remove more carbon than it emits by 2030'

Logitech

"Our use of offsets is envisaged as a bridge, something that we can do right now while we, and the rest of the world, develop capability to drive further adoption of ecodesign, more sustainable business models"

LEON
NATURALLY FAST FOOD

LEON – Carbon Neutral Burgers and Fries