

INTRODUCTION TO CARBON MARKETS

Carbon pricing mechanisms and associated markets

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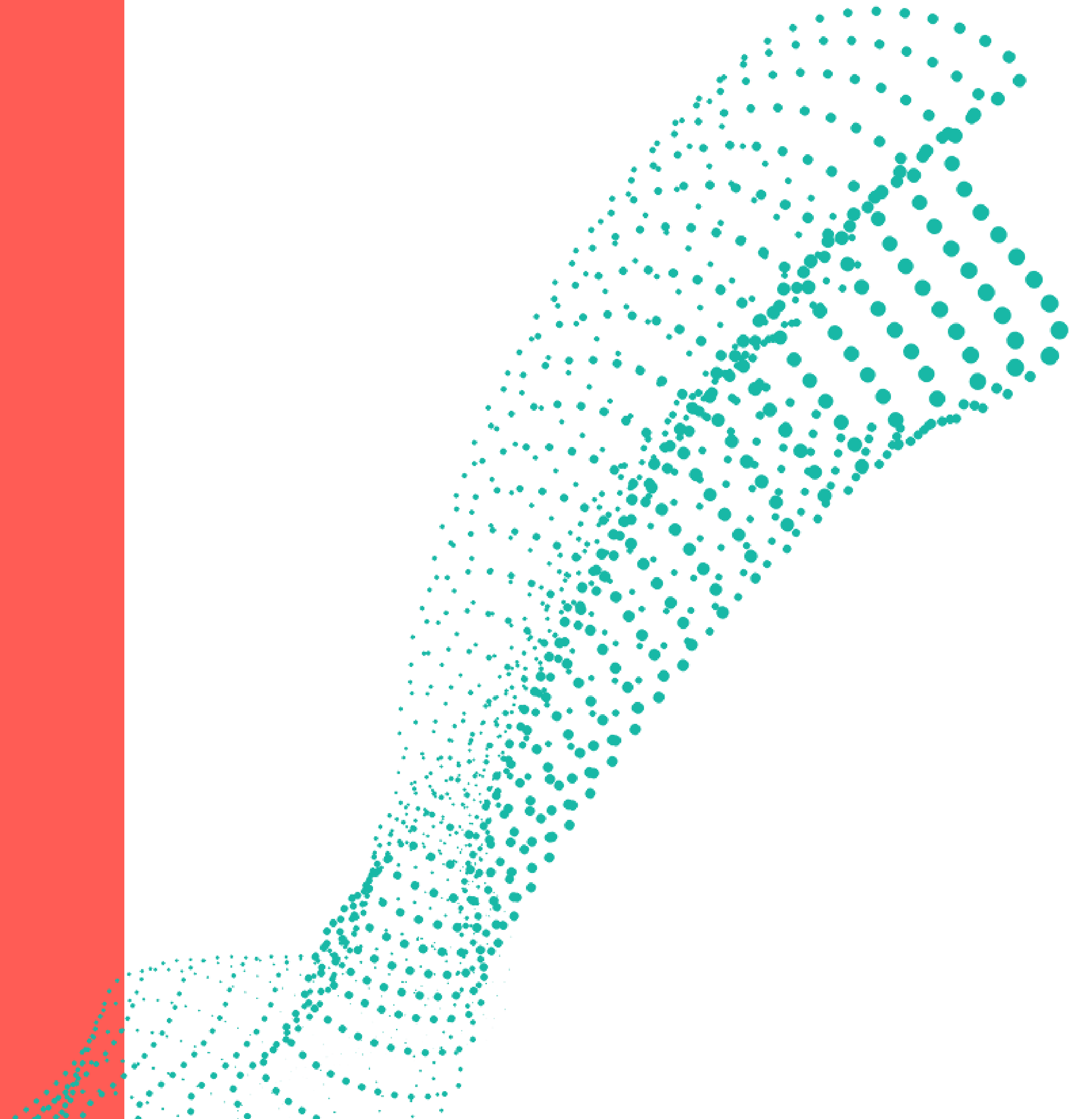
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1

WHAT IS CARBON PRICING.

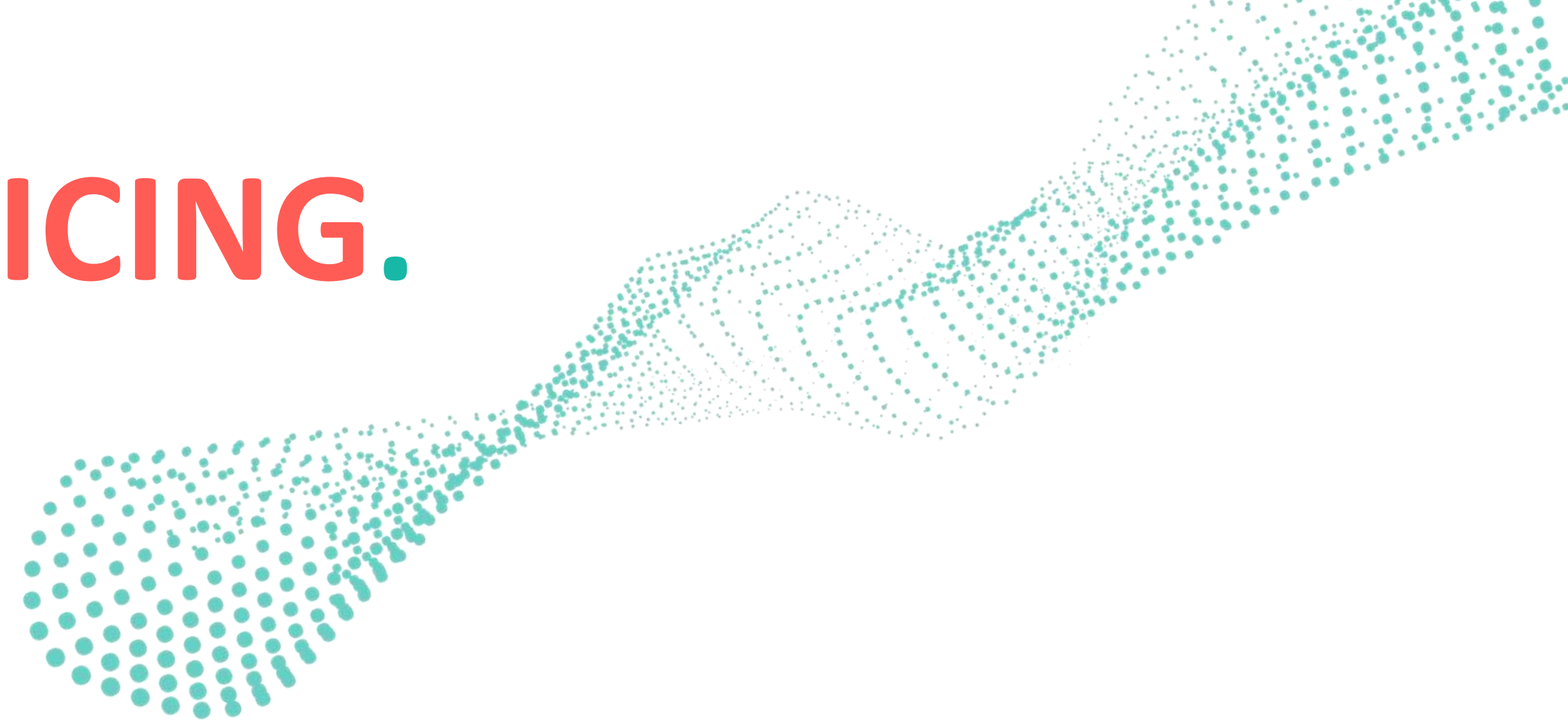


WHAT IS CARBON PRICING.

Putting **a price on emissions.**

It captures the **external costs of greenhouse gas emissions**—the costs of climate change that the public pays — and ties them to their emitters through a price.

Carbon pricing, within an integrated policy mix, is **a powerful tool to guide economies toward low-emission paths.**



OBJECTIVES OF CARBON PRICING.

To **achieve mitigation targets** in a cost-effective manner, by spreading the effort.





To provide strong **incentives to raise private investments**.

To allow emitters to decide between **lowering their emissions or continue emitting and paying** for their emissions.

To stimulate technological change and **acceleration of low-carbon innovation**.

To **generate revenues for governments** to finance further climate action.

CARBON PRICING INSTRUMENTS AND MARKETS.

Carbon pricing instrument or mechanism		Resulting market
	Carbon taxation	None
	Emission trading systems	Domestic compliance market
	Result-based climate finance	None, but has an effect on other markets
	Carbon crediting mechanisms	Domestic compliance market Voluntary carbon market
Instruments applied through Article 6 of the Paris Agreement		

CARBON PRICING INSTRUMENTS AND MARKETS.

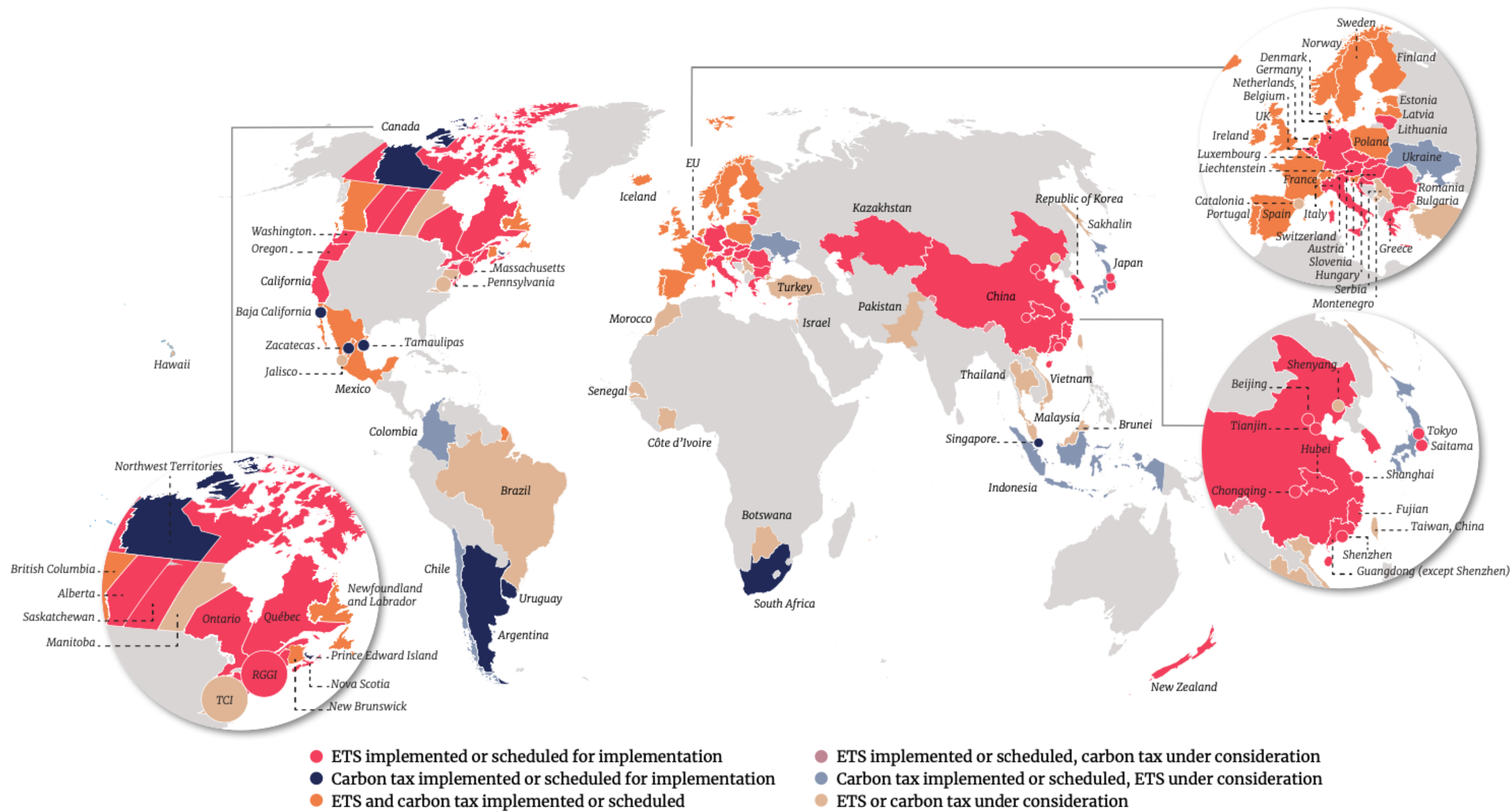
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carbon pricing instruments
including **taxes** and **emissions
trading systems** (ETs), are
operating.



Covering approximately **23%**
of total **global greenhouse gas**
(GHG) emissions.





2

MAIN PRICING INSTRUMENTS AND THEIR RESULTING MARKETS.



CARBON TAXATION.

Directly sets a price on carbon by defining an **explicit tax rate on greenhouse gas emissions.**

CARBON TAXATION.

USED
to discourage the
consumption of fossil
fuels and shift to
lower-carbon fuels.

36 JURISDICTIONS
covering a total of 5.7%
of global emissions
(2022).

EASIER
to implement than
other carbon pricing
instruments, especially
in developing countries.

POLITICAL RISKS
and risks of
switching to
informal sources of
energy (wood,
charcoal).

BEWARE
of fossil fuel
subsidies.

EXAMPLES: Uruguay, Colombia, Senegal (under development).

EMISSION TRADING SYSTEM (ETS).

A compliance system where emitters trade emission allowances between them to meet their emission targets.

To comply with their targets, emitters can either reduce emissions internally or buy emission allowances from other emitters.

EMISSION TRADING SYSTEM (ETS).

CAP AND TRADE
Most applied system.

REGULATED ENTITIES
mostly large emitters:
producers of steel,
cement, paper, and
fertilisers, power
stations, oil refineries.

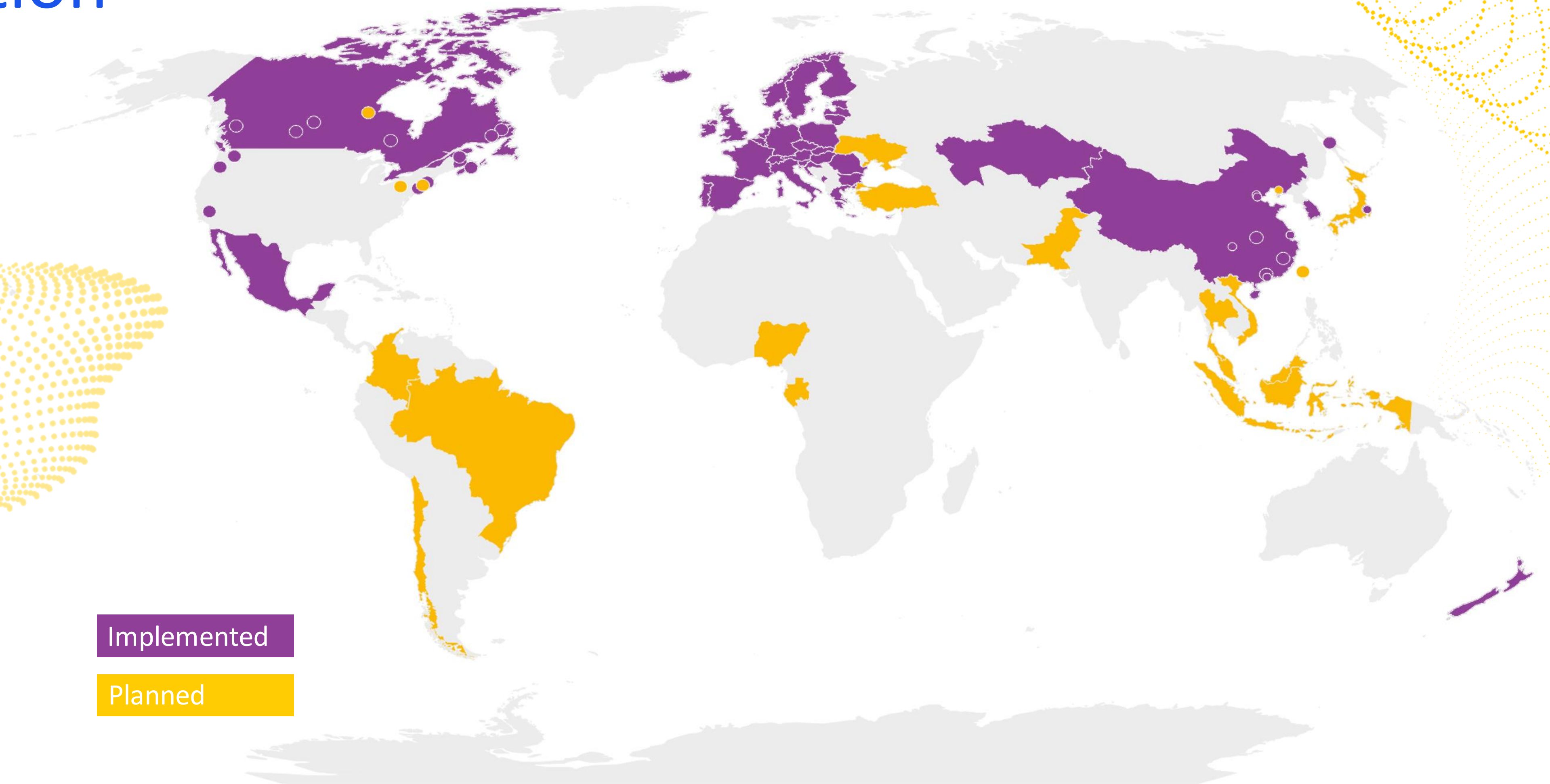
RESULTING MARKET
closed domestic
compliance market.

PRICE SETTING
through a
centralised trading
system, based on
auctions



EMISSION TRADING SYSTEM (ETS).

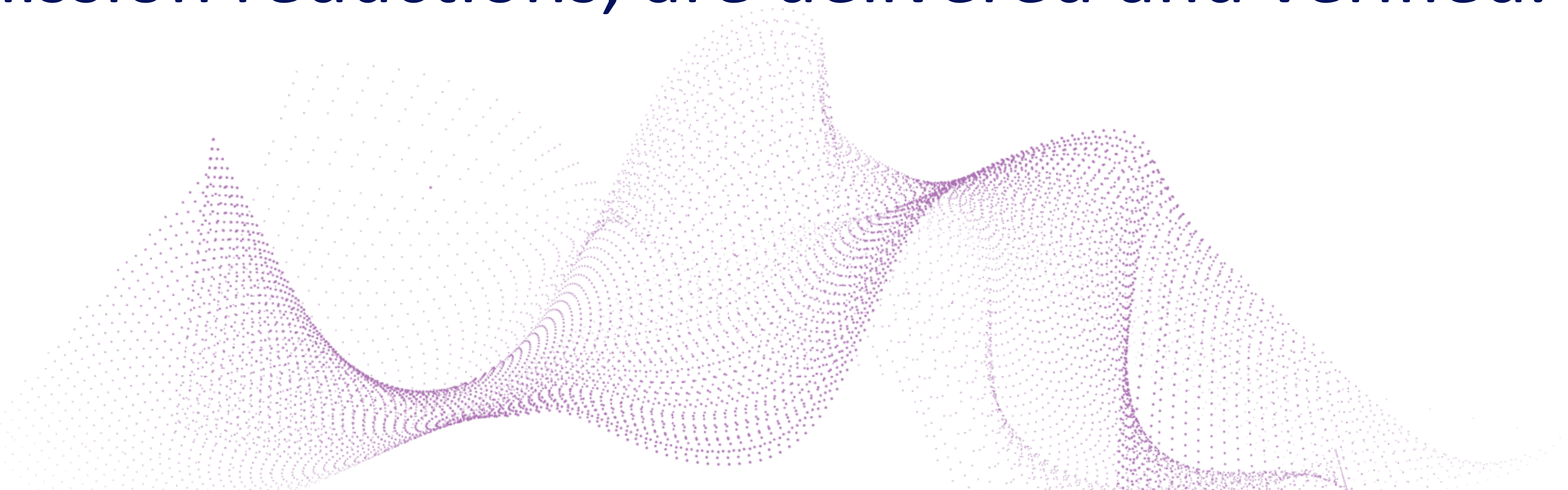
Distribution



Source: World Bank, 2022

RESULT-BASED PAYMENT MECHANISMS.

Funding approach where payments are made after outputs related to climate change, such as emission reductions, are delivered and verified.



RESULT-BASED PAYMENT MECHANISMS.

CONTRIBUTION TO FUNDS

international and national sources, non-profit and private contributors, but are mostly public funds.

HELPS BUILD CAPACITY and prepares developing countries to participate in international carbon markets.

EXAMPLES

Green Climate Fund, World bank's Carbon Fund, Central African Forest Initiative.

CREDITING MECHANISMS.

Market mechanism that valorises greenhouse gas emission reductions from **project-based** mitigation activities.

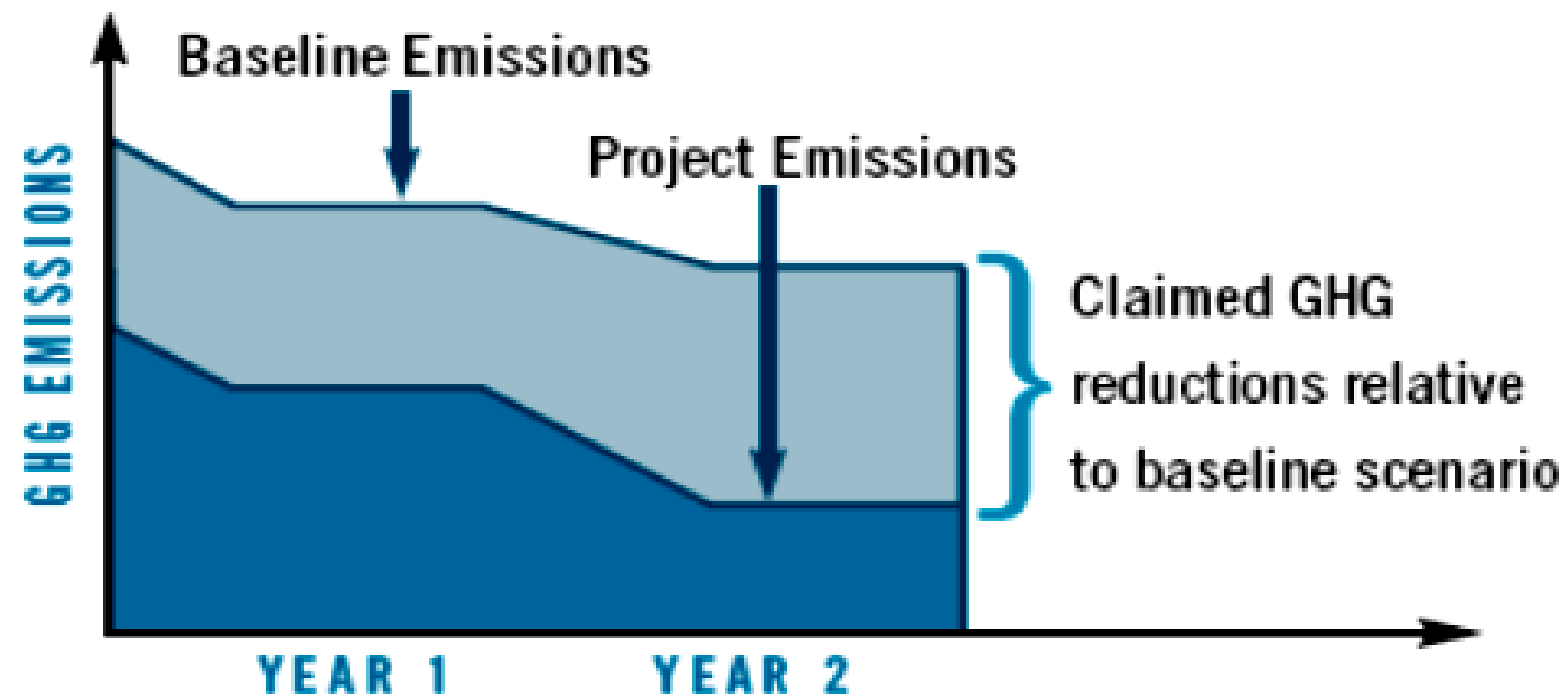
Credits or offsets are **1 ton of CO₂ equivalent** of compensatory value obtained through:

- Activities leading to **removal of carbon** from the atmosphere (removals or carbon sequestration).
- Activities leading to **emission reductions**

compared to a baseline scenario.

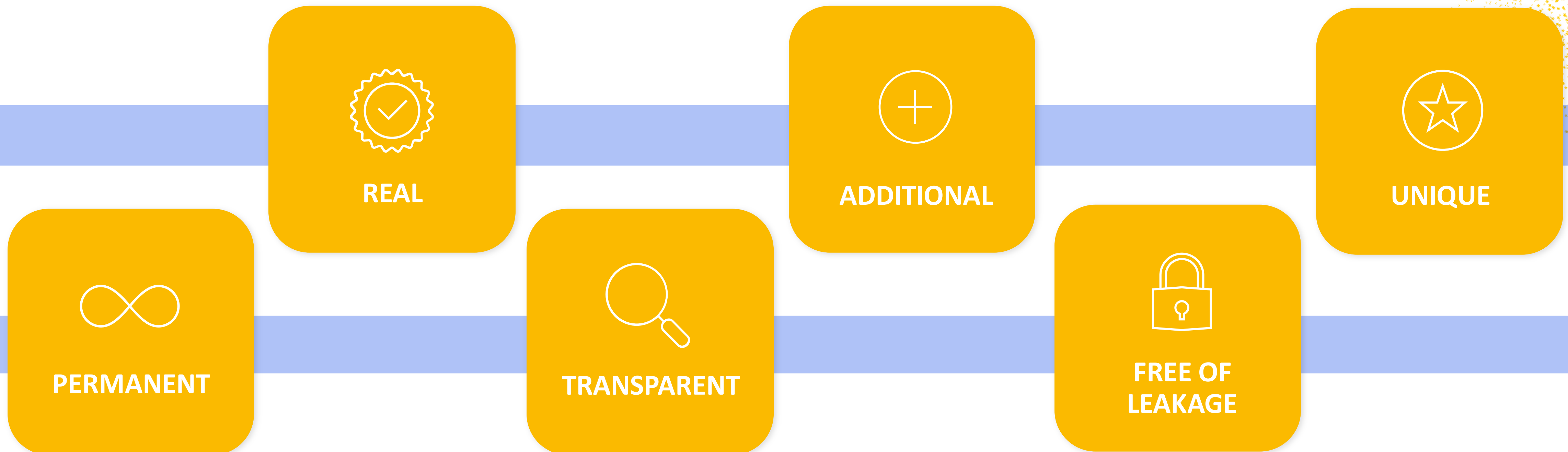
CREDITING MECHANISMS.

QUANTIFYING GREENHOUSE GAS EMISSIONS FROM PROJECTS



CREDITING MECHANISMS.

To have full compensatory value (= integrity), credits and the associated mitigation activity must be:



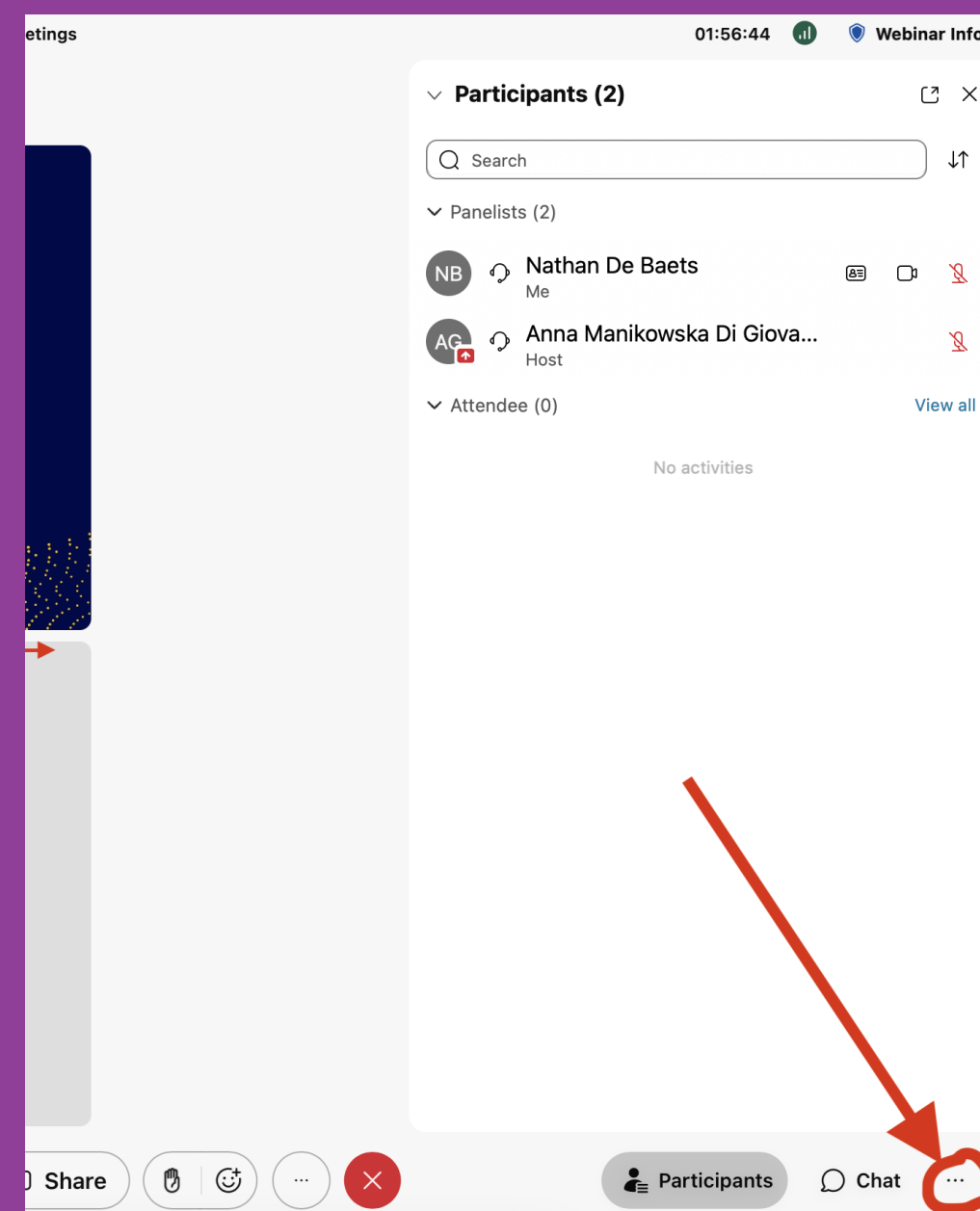
CREDITING MECHANISMS.

Credits are to comply with either:

- **An international agreement**
- **A domestic regulation** (compliance market)
- **Voluntary corporate objectives** (voluntary market)

Poll

TEST YOUR KNOWLEDGE.



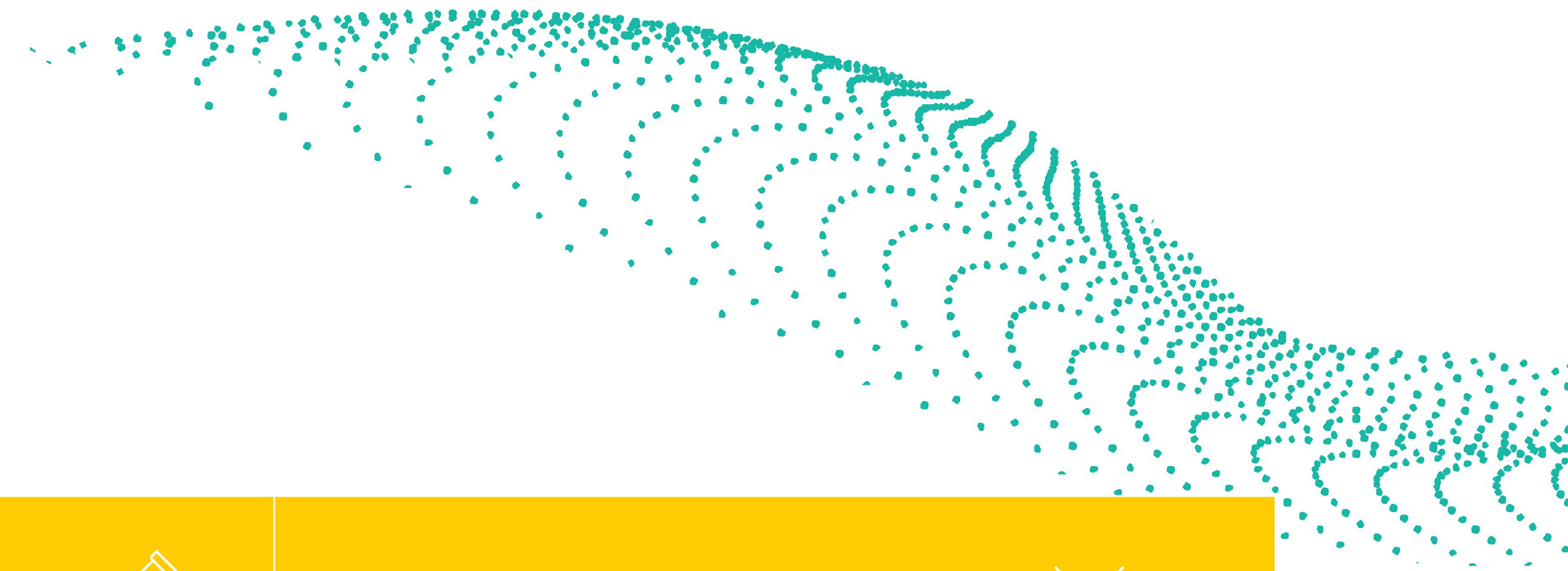
Which carbon pricing instruments imply exchanges of carbon units on a market?



- a. Carbon crediting
- b. Result-based finance
- c. Emission trading systems
- d. Carbon taxation
- e. None
- f. All of them

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THE
VOLUNTARY
CARBON
MARKET.

COMPLIANCE VERSUS VOLUNTARY MARKET.



	Compliance markets 	Voluntary market 
Regulation	By government law or regulation	Non-regulated
Type of participation	Mandatory participation	Voluntary participation
Most common market instrument	Emission trading system (cap & trade)	Carbon crediting
Main type of transaction	Centralised market mechanism (auctions)	Between buyer and seller (over-the-counter) or through public exchange markets
Methodologies and procedures	Determined by regulation	Proposed by independent certification bodies (e.g. Verra, Gold Standard)

THE VOLUNTARY CARBON MARKET (VCM).

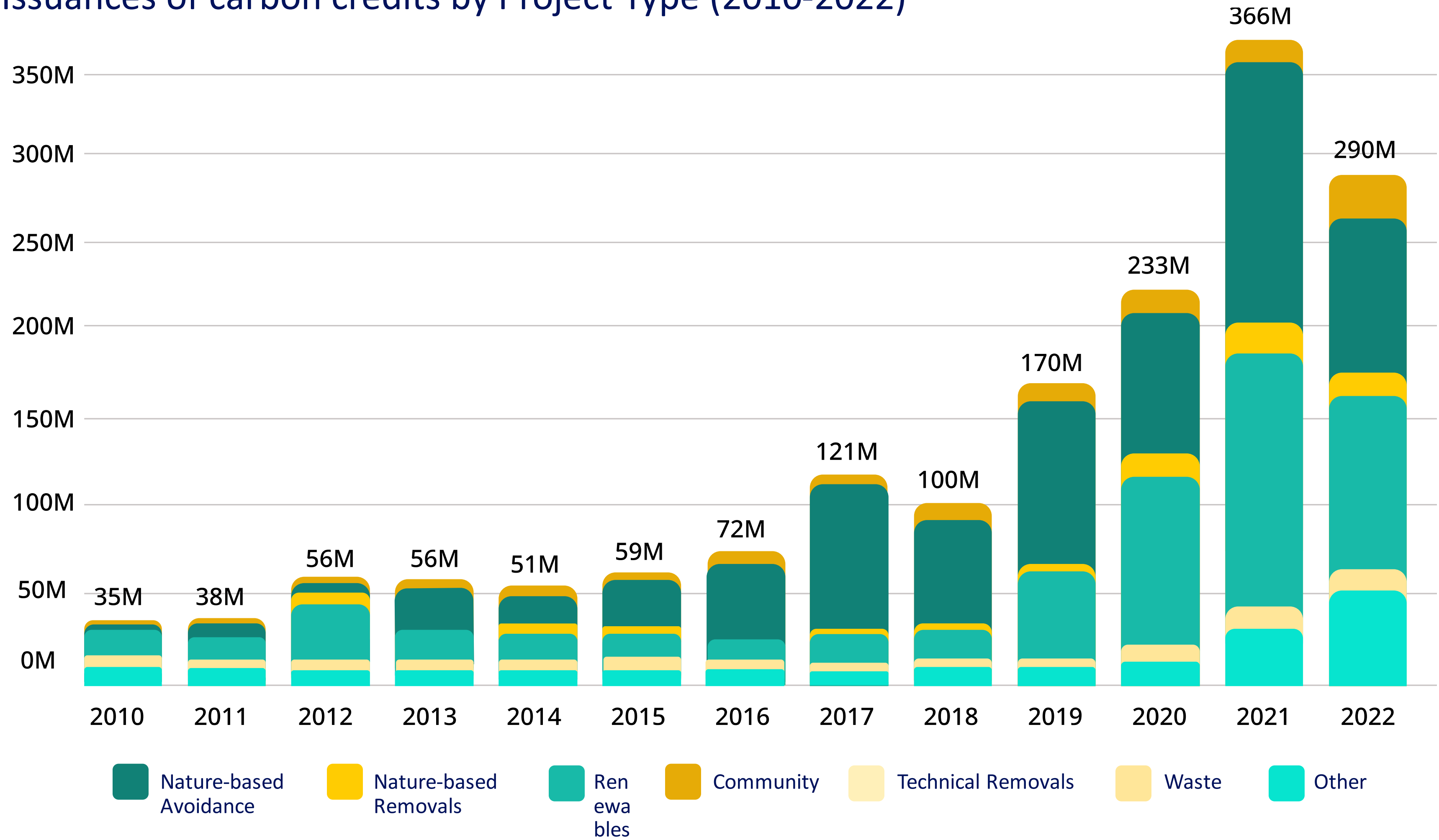
		2020			2021		
		VOLUME (MtCO ₂ e)	PRICE (USD)	VALUE (USD)	VOLUME (MtCO ₂ e)	PRICE (USD)	VALUE (USD)
	FORESTRY AND LAND USE	57.8M	\$5.40	\$315.4M	227.7M	\$5.80	\$1,327.5M
	RENEWABLE ENERGY	93.8M	\$1.08	\$101.5M	211.4M	\$2.26	\$479.1M
	CHEMICAL PROCESSES / INDUSTRIAL MANUFACTURING	1.8M	\$2.15	\$3.9M	17.3M	\$3.12	\$53.9M
	WASTE DISPOSAL	8.5M	\$2.69	\$22.8M	11.4M	\$3.62	\$41.2M
	ENERGY EFFICIENCY / FUEL SWITCHING	30.9M	\$0.98	\$30.4M	10.9M	\$1.99	\$21.9M
	HOUSEHOLD / COMMUNITY DEVICES	8.3M	\$4.34	\$36.2M	8.0M	\$5.36	\$43.3M
	TRANSPORTATION	1.1M	\$0.64	\$0.7M	5.4M	\$1.16	\$6.3M
	AGRICULTURE	0.5	\$10.38	\$4.7M	1.0M	\$8.81	\$8.87M

Source: Forest Trends, 2022

THE VOLUNTARY CARBON MARKET (VCM).

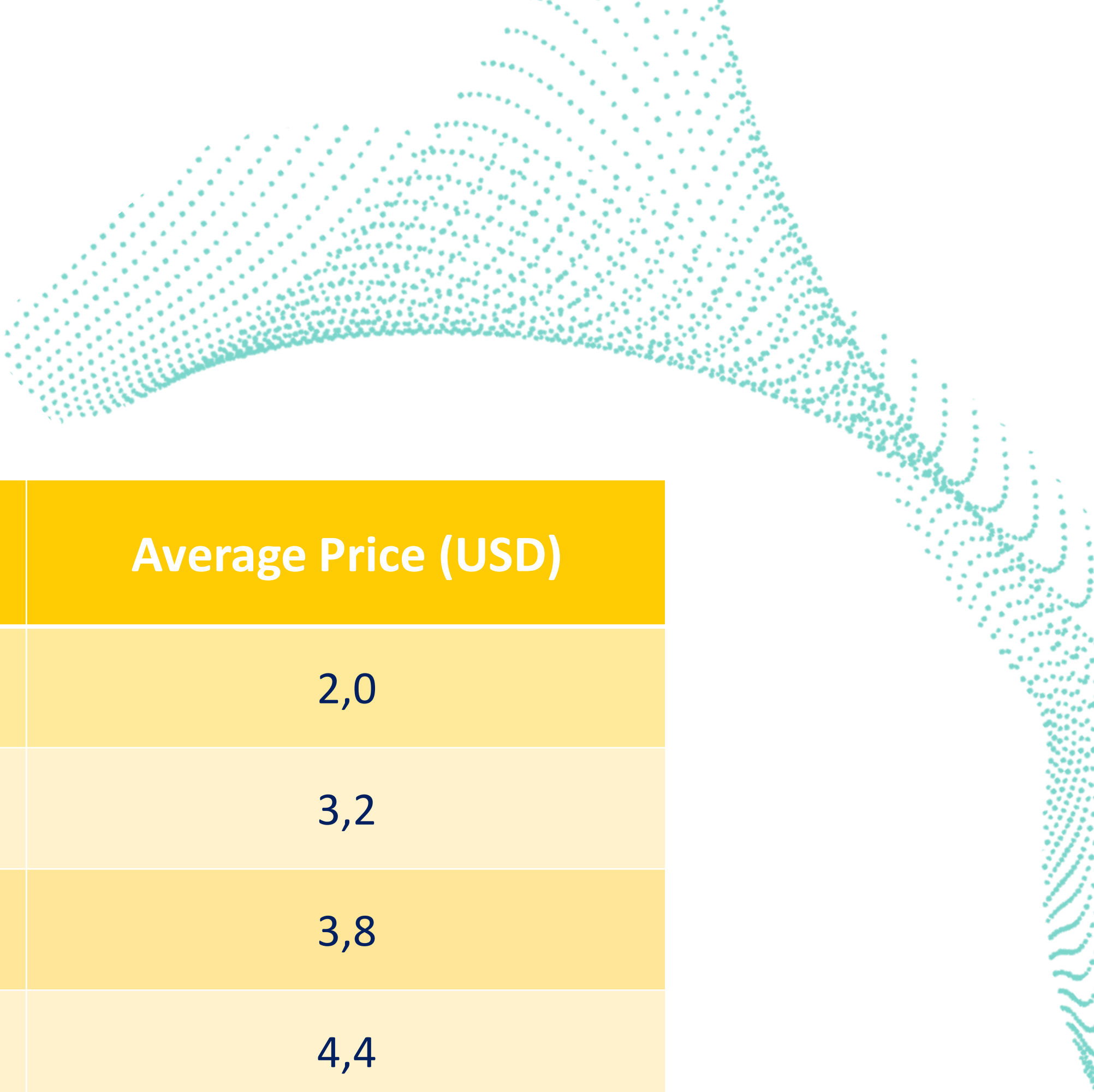


Issuances of carbon credits by Project Type (2010-2022)



Source: South Pole (2022)

THE VOLUNTARY CARBON MARKET (VCM).



		Share in world transactions (%)	Average Price (USD)
A vertical teal bar containing six white map icons representing the continents: Asia, Latin America & Caribbean, North America, Africa, Europe, and Oceania.	Asia	51%	2,0
	Latin America & Caribbean	20%	3,2
	North America	13%	3,8
	Africa	13%	4,4
	Europe	2%	3,4
	Oceania	1%	12,2
Total / average		100%	4,8

SUPPLY-SIDE RISKS ASSOCIATED TO VOLUNTARY MARKET ACTIVITIES (1/2).

FINANCIAL RISKS

Low prices, high carbon transaction costs, small benefits for carbon owners.

TECHNICAL RISKS

Complex carbon measurement, reporting, and verification.

SOCIAL RISKS

Absence of just carbon benefit-sharing mechanisms.

SUPPLY-SIDE RISKS ASSOCIATED TO VOLUNTARY MARKET ACTIVITIES (2/2).

GENDER RISKS

Carbon project design doesn't allow women and girls to benefit, carbon ownership is mainly attributed to men.

ENVIRONMENTAL RISKS

Some mitigation activities may deplete natural resources (water, soil).

NON-ALIGNMENT

with national and international climate change policies (NDC, Paris Agreement).

DEMAND-SIDE RISKS ASSOCIATED TO VOLUNTARY MARKET ACTIVITIES.

- Poor **quality and integrity** of carbon credits.
- The VCM does not require the buyer to reduce its own emissions. This may lead to **reduced ambition from emitters**, as all emissions may be compensated by acquiring carbon credits produced elsewhere.

With the increasing interest in voluntary markets, it is important for partner countries to **assess risks and regulate** voluntary market activities.

Poll

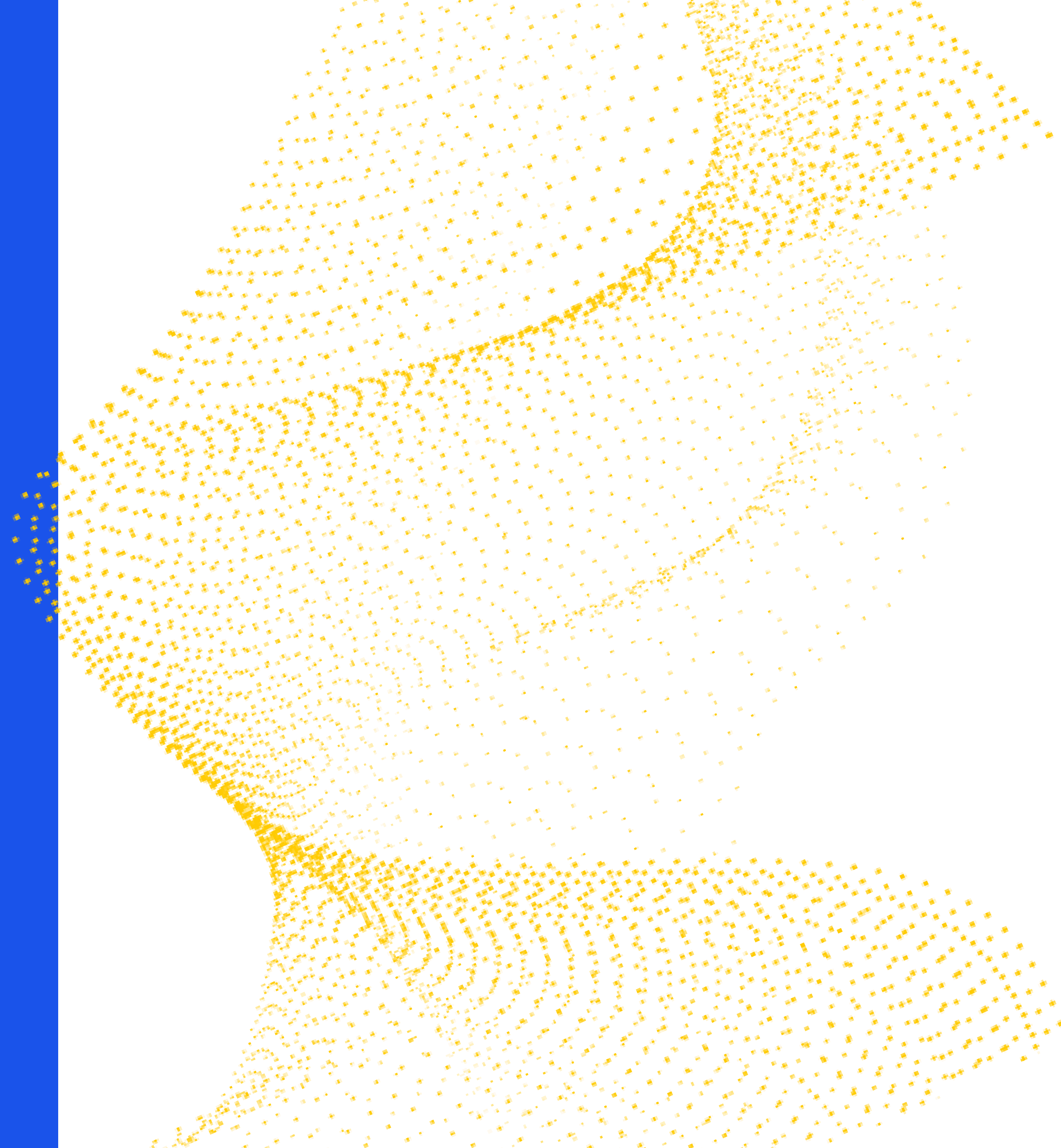
TEST YOUR KNOWLEDGE.

To have full compensatory value (integrity), carbon projects and credits must be:

- a. Transparent
- b. Additional
- c. Temporary
- d. Free of leakage
- e. Secret
- f. Compliant with the EU ETS
- g. Real

4

IMPLICATIONS FOR EU DELEGATIONS.

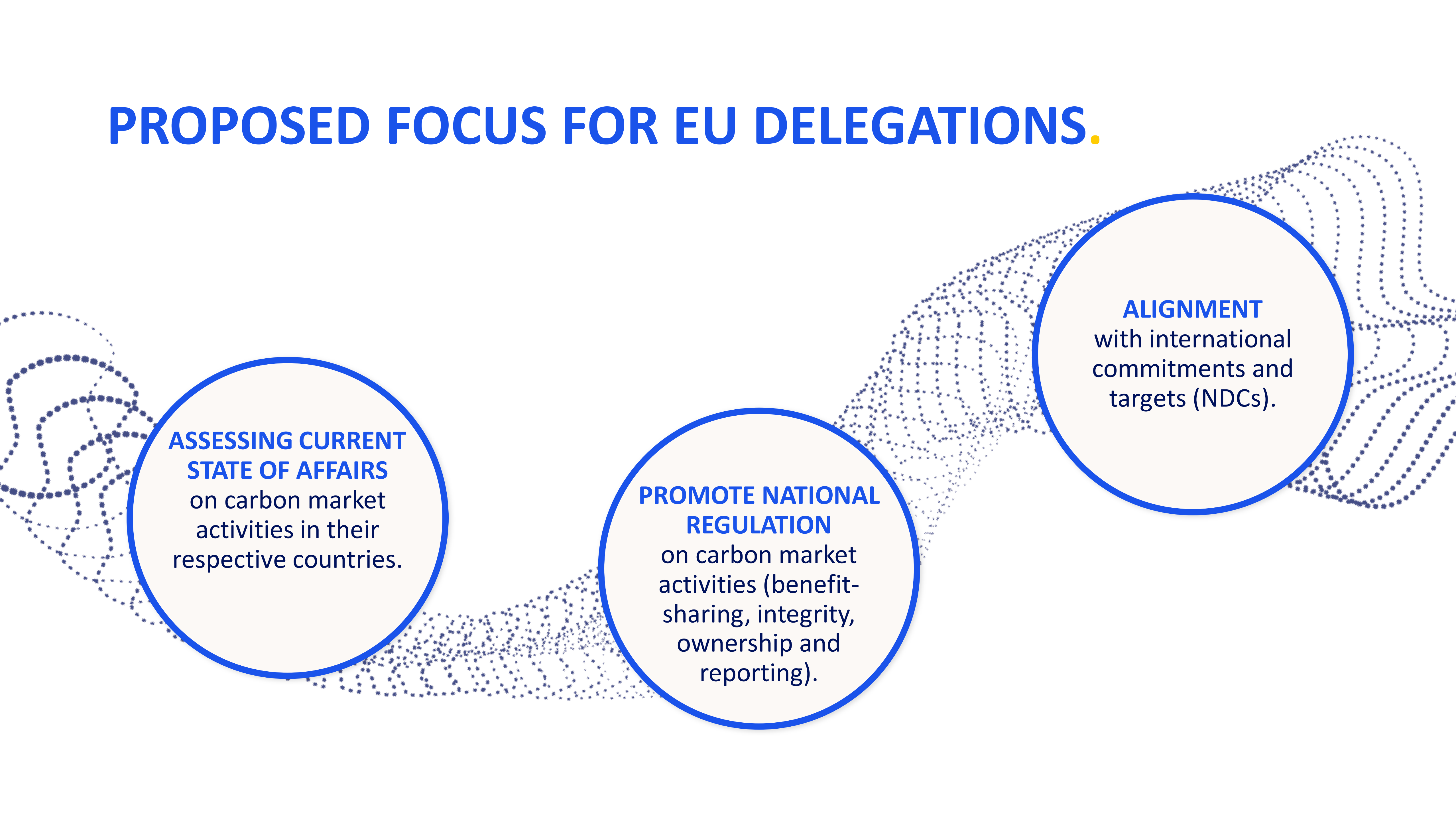


IMPLICATIONS FOR EU DELEGATIONS.

Increased market demand = increasing interest by developing countries in the voluntary carbon market, Article 6 opportunities.

Partner countries want to improve understanding, and access carbon markets to seize opportunities.

PROPOSED FOCUS FOR EU DELEGATIONS.

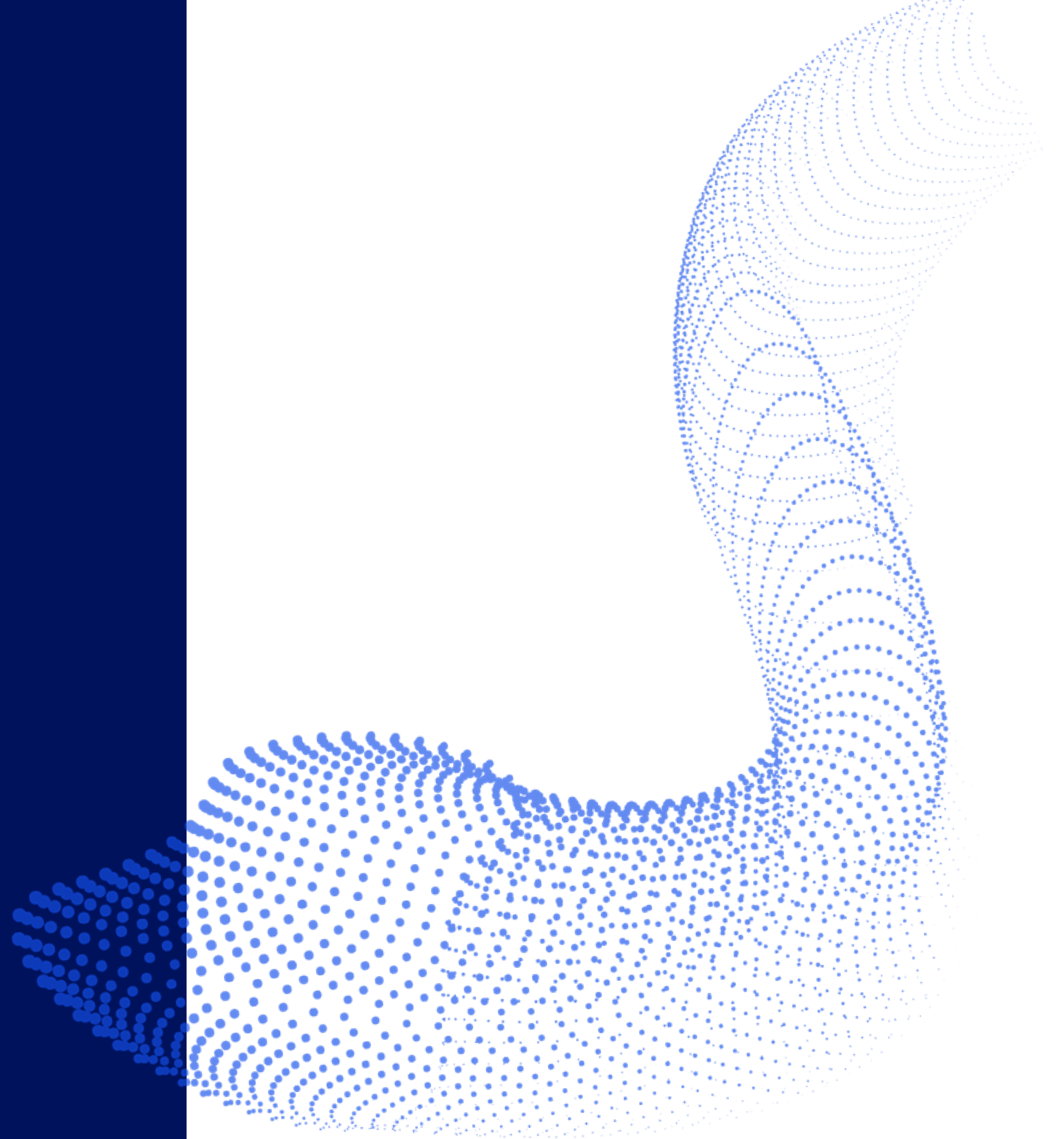


**ASSESSING CURRENT
STATE OF AFFAIRS**
on carbon market
activities in their
respective countries.

**PROMOTE NATIONAL
REGULATION**
on carbon market
activities (benefit-
sharing, integrity,
ownership and
reporting).

ALIGNMENT
with international
commitments and
targets (NDCs).

QUESTIONS



THANK YOU.

ndcfacility@dai.com

EU **NDC**
FACILITY



Financé par l'Union européenne.

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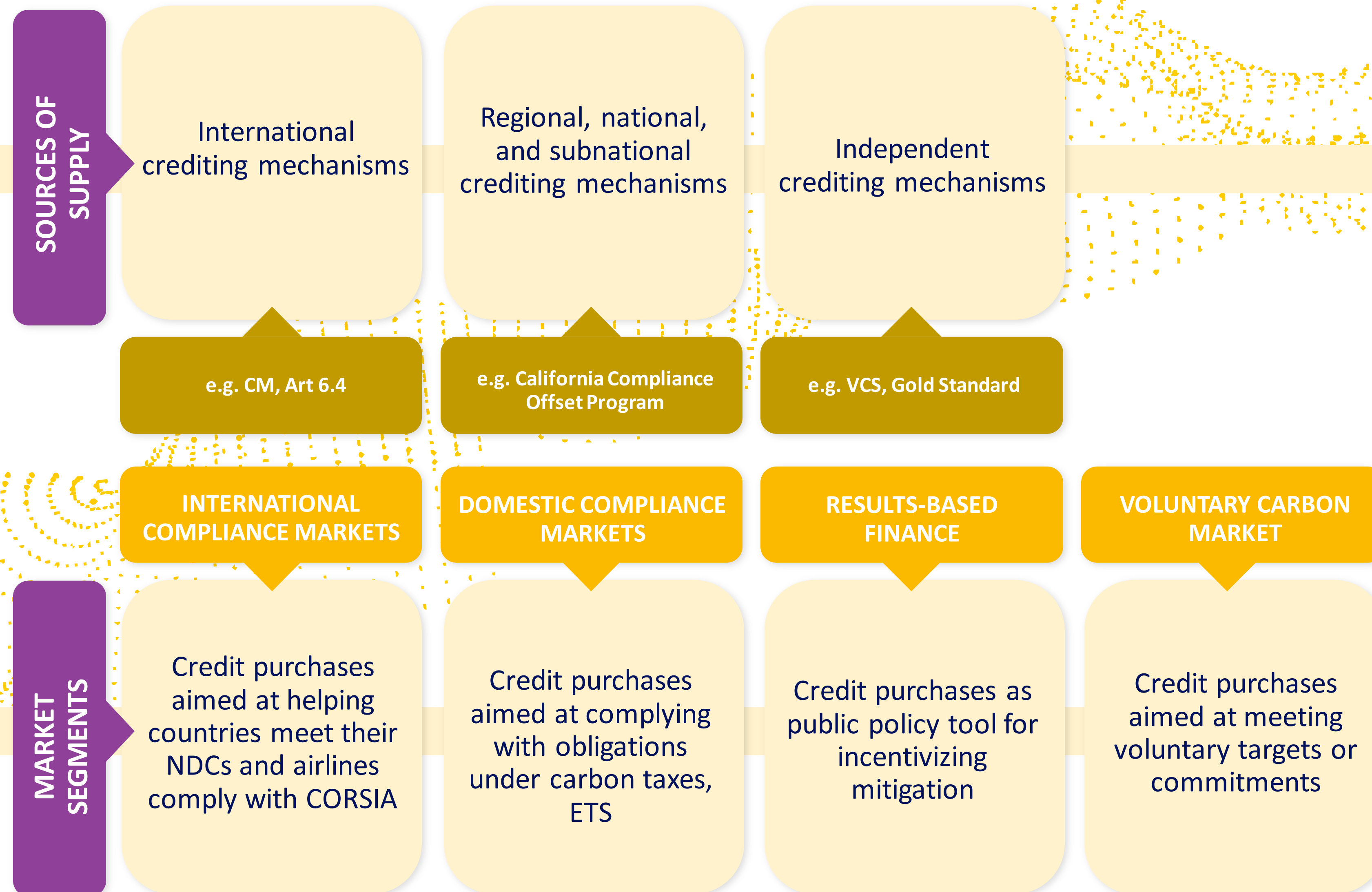
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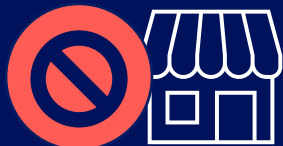

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STYLIZED REPRESENTATION OF TYPES OF CARBON CREDITING MECHANISMS AND MARKET SEGMENTS.



CARBON PRICING INSTRUMENTS: A SIMPLIFIED OVERVIEW*

Category	Non-market 		Market 		
Type	Carbon taxation	Result-based climate finance (payments)	Emission trading system (ETS)	Carbon crediting mechanisms	
Type of regulation	Government regulation	Fund or programme regulation	Government regulation	Government regulation	None (Voluntary)
Resulting market	/	/	Domestic compliance market	Domestic compliance market	International Voluntary carbon credit market
Main suppliers	/	Eligible projects or programs	Regulated emitters (companies, power stations)	Project or program proponents in non-regulated sectors	Project or program proponents
Main buyers	/	Funders: countries, multilaterals, private sector	Regulated emitters (companies, sectors)	Regulated emitters	Companies / corporates
Examples at international level	/	Carbon Fund, GCF, CIF, CAFI, NORDEC, LEAF	EU ETS (only EU)	/	International Voluntary carbon credit market (VCM)
Examples at national level	Uruguay, Senegal (under development)	Brazil (Amazon Fund)	Indonesia, Mexico, Vietnam	Colombia, South Africa, Canada	/