



TFAC



ASEAN Federation of Accountants

ASEAN Accountancy Conference on Sustainability



8th October 2022



State and Trends of Carbon Pricing

8 October 2022, 13.00-13.25



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Natee Sithiprasasana

Board of Director and Secretary

Climate Change Institute

Federation of Thai Industries

Carbon Pricing Instruments (CPIs)



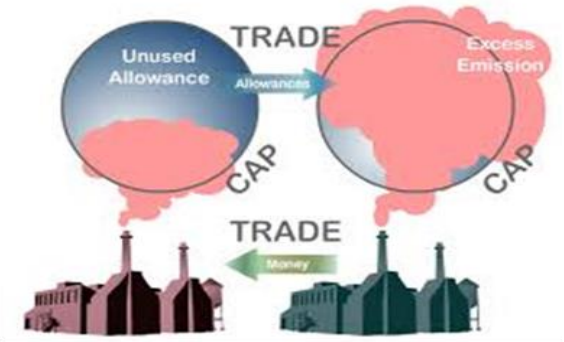
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Mandatory

Emission Trading Scheme

1



Carbon Tax

2



Carbon Crediting Mechanism

3



Internal Carbon Price

4



Voluntary

Market-based pricing

Determined pricing

Remark:

1-3 = external carbon pricing

4 = internal carbon pricing

Source: Creagy 2022

Carbon Pricing Mechanism



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- Carbon Offset
 - Carbon Credit Mechanism (CDM, VCS, Gold Standard, T-VER)
- Cap and Trade
 - Emission Trading Scheme (EU-ETS, China National ETS)
- Carbon Tax
 - CO₂ Adjustment Tax

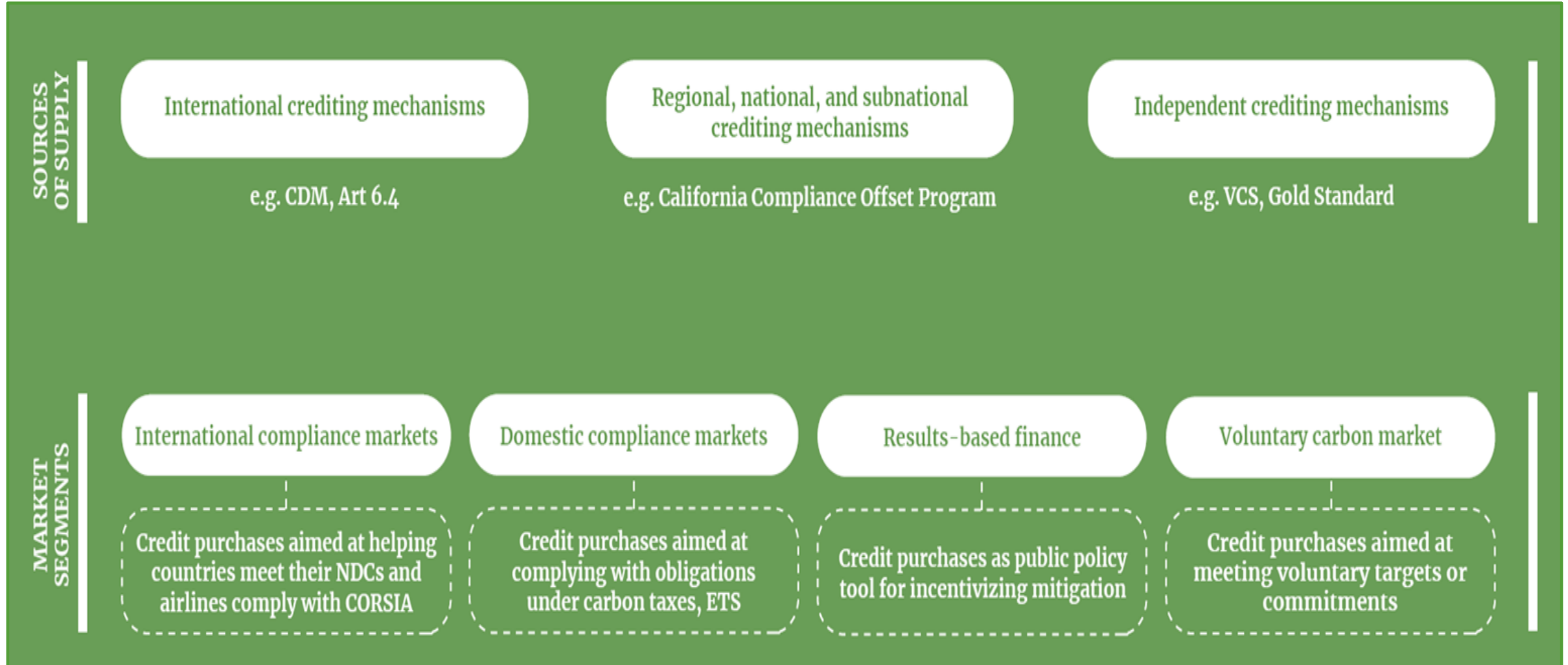
Info Credit:

1. *State and Trends of Carbon Pricing 2022, The World Bank*
2. *Ecosystem Marketplace Insight Report 2021*
3. *Thailand Greenhouse Gas Management Organization (Public Organization)*

Carbon Market and Carbon Credit Mechanism

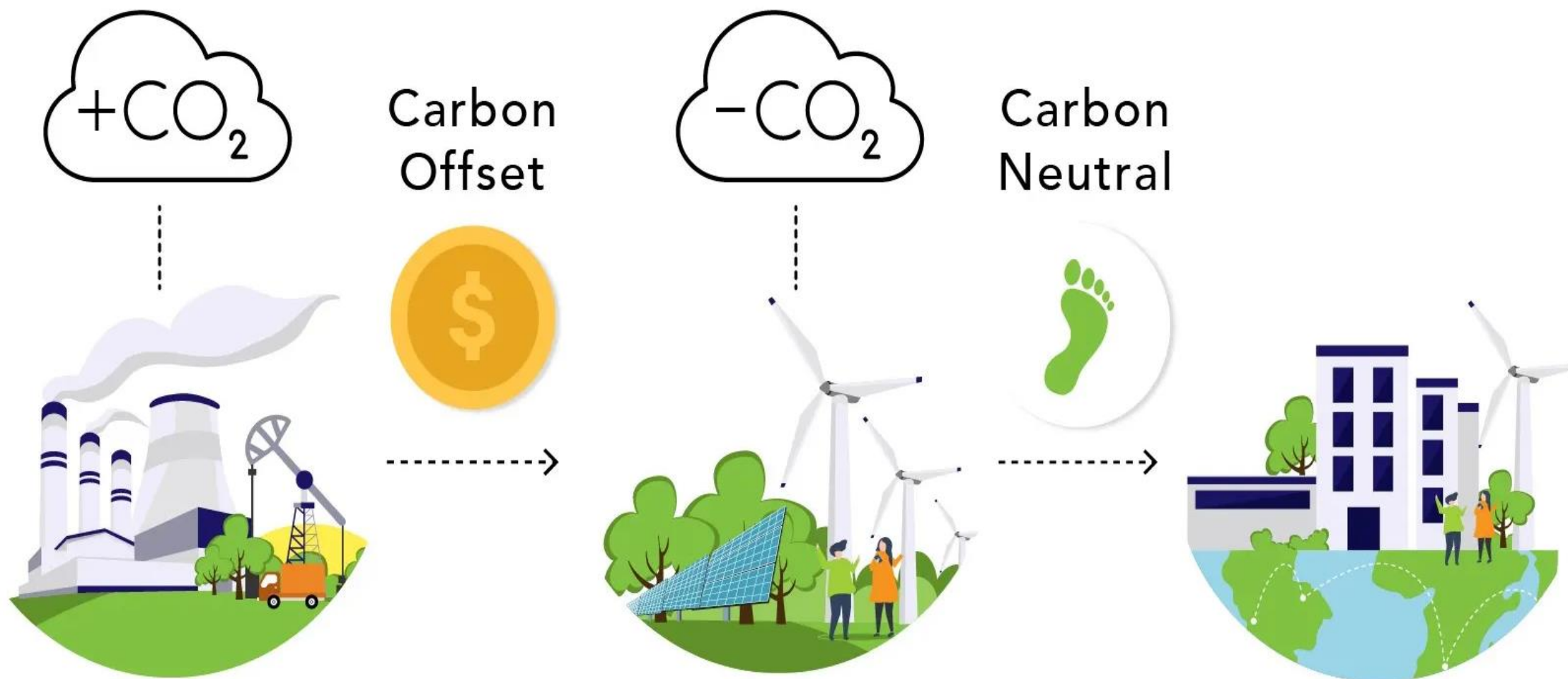


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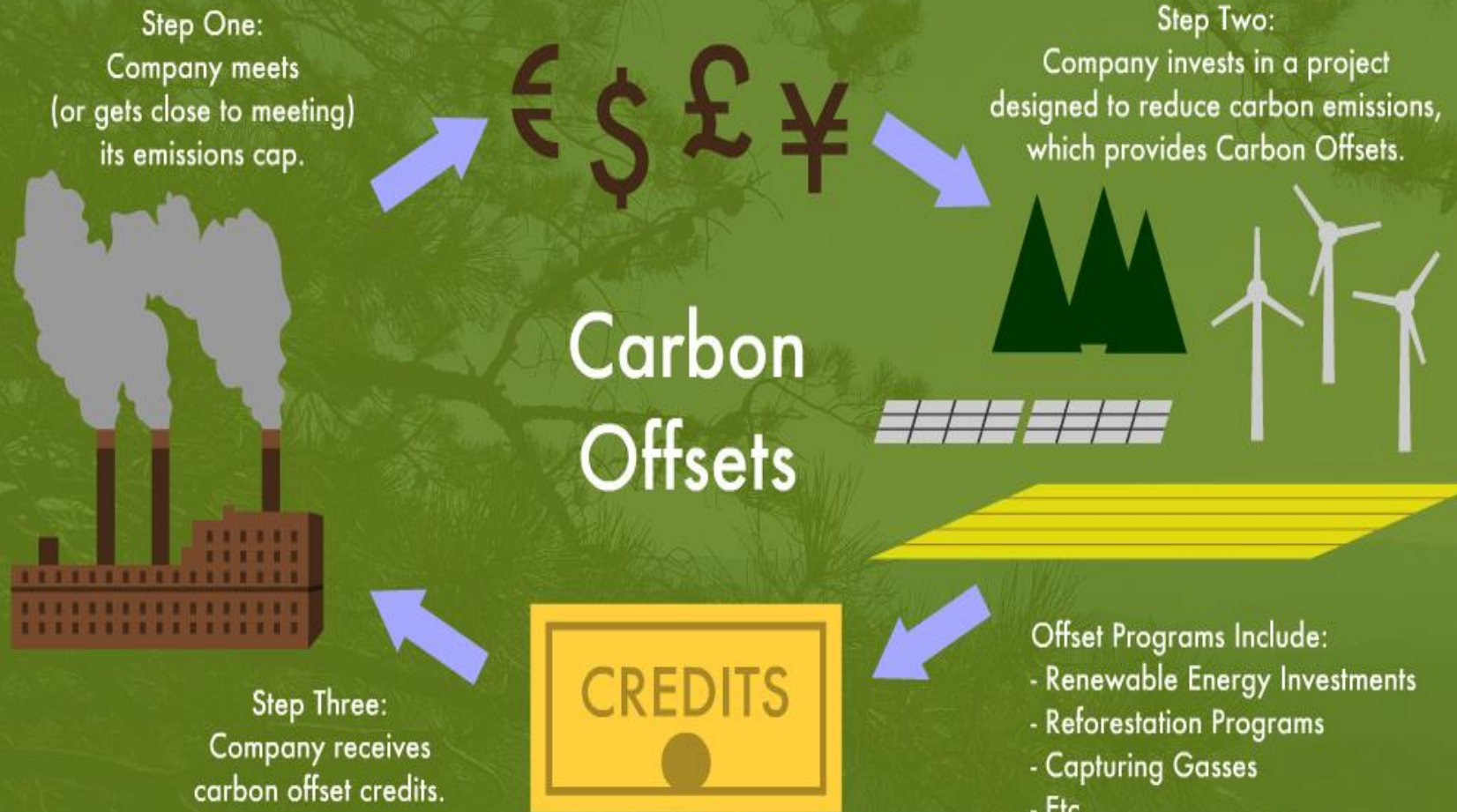
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3 Steps To Reduce Carbon Emissions



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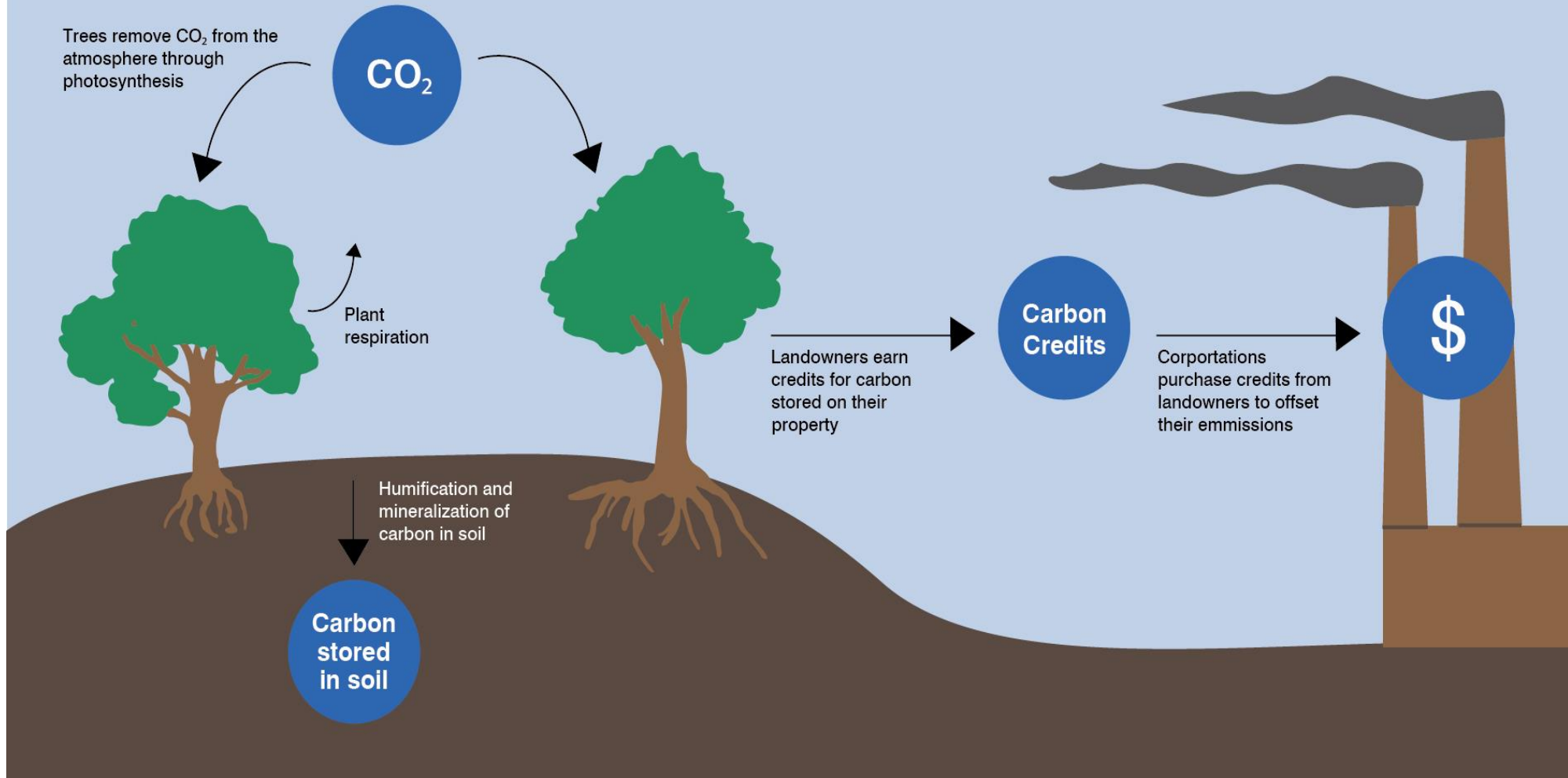


8BillionTrees
.com

How Carbon Sequestration and Offset Credits Work



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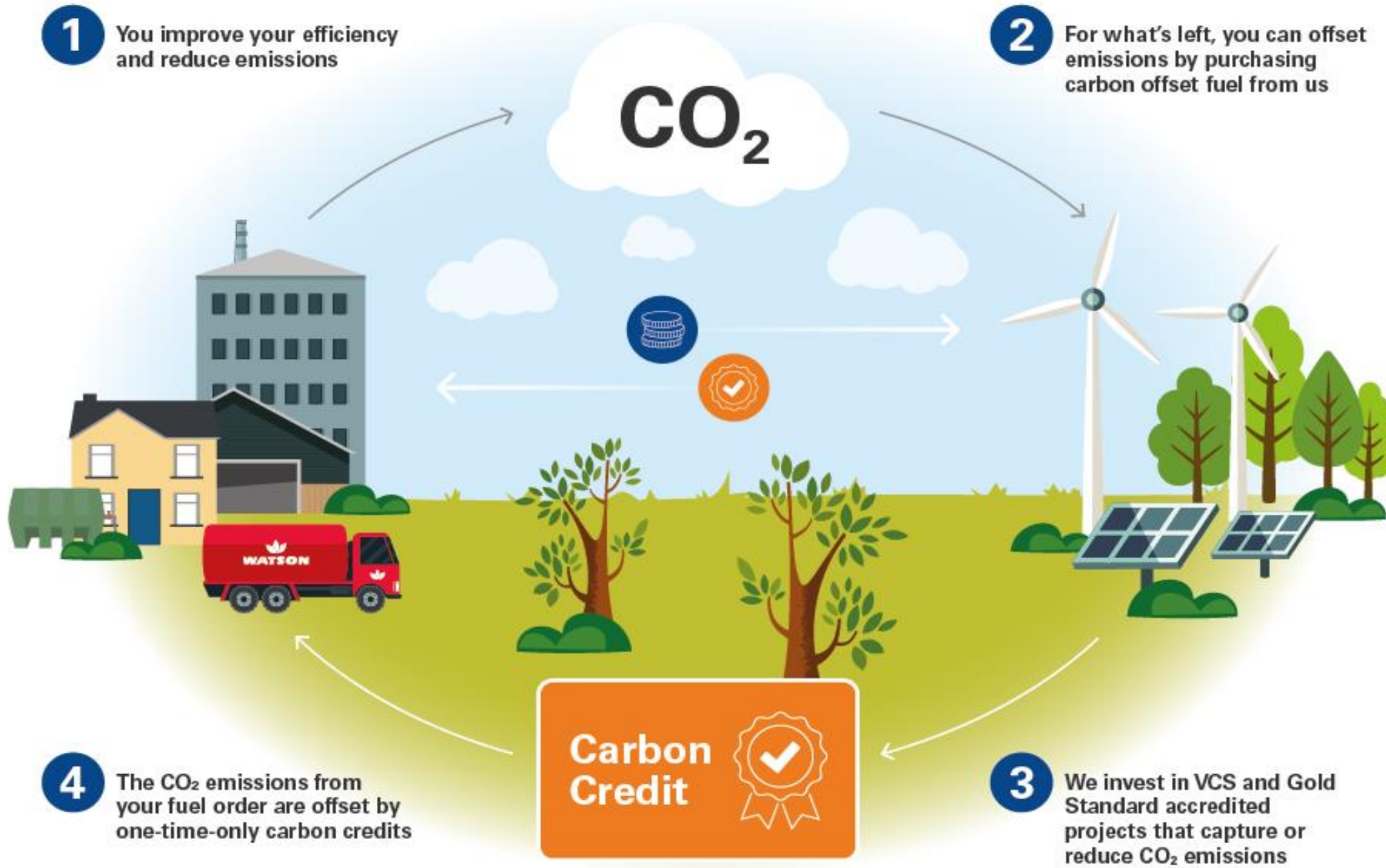


1 You improve your efficiency and reduce emissions

2 For what's left, you can offset emissions by purchasing carbon offset fuel from us



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4 The CO₂ emissions from your fuel order are offset by one-time-only carbon credits

3 We invest in VCS and Gold Standard accredited projects that capture or reduce CO₂ emissions

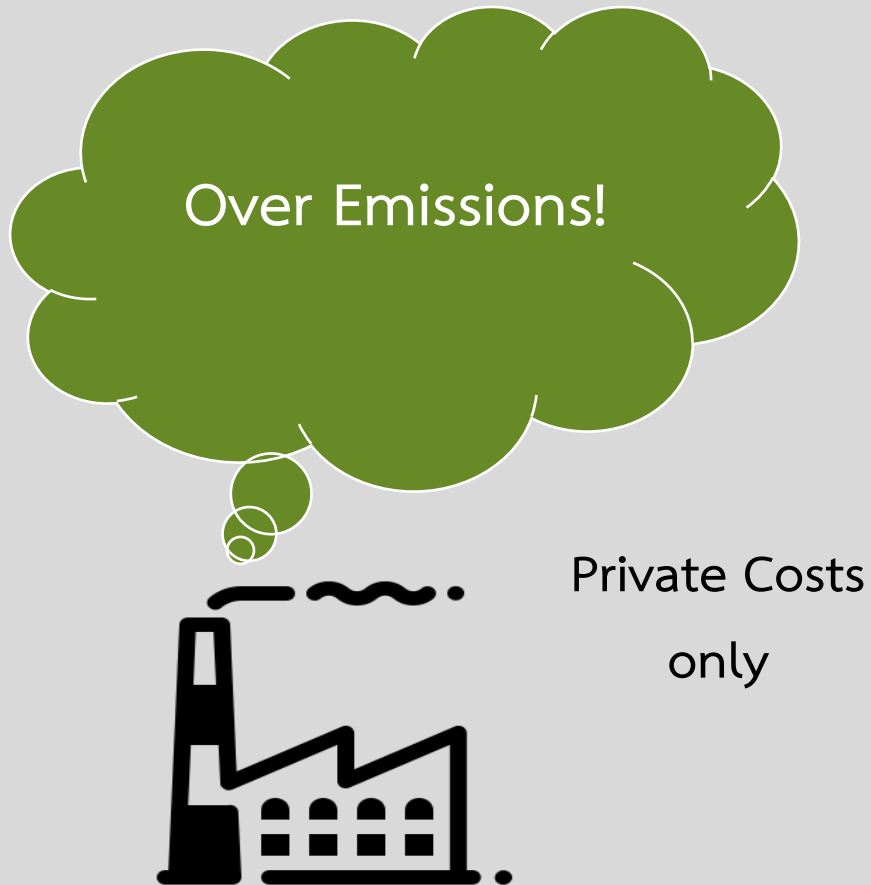


Economic Motivation Mechanism – Pricing Mechanism



External Costs are ignored!

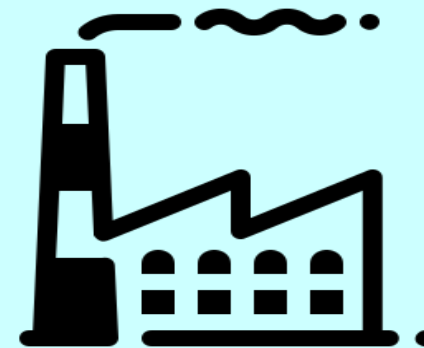
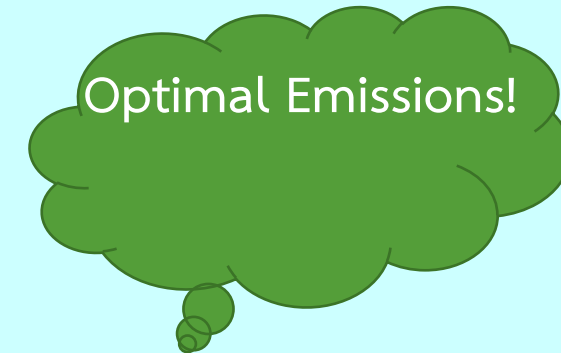
Private Costs < Social Costs



External Costs are internalized!

Private Costs = Social Costs

Private Costs
+
External Costs





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Project Developers

Design and implement carbon offset projects that sell carbon credits that represent emission reductions or removals.



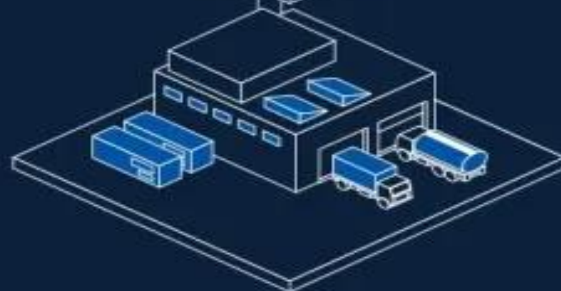
Standards Bodies

Organizations that certify and set the criteria for carbon offsets e.g. Verra and the Gold Standard.



Brokers

Intermediaries facilitating carbon credit transactions between buyers and project developers.



End Buyers

Entities such as individuals or corporations looking to offset their carbon emissions through purchasing carbon credits.

Carbon Credit

Also referred to as a carbon offset.



One carbon credit

=



One metric ton of GHG emissions

Key Fact

A carbon credit can be sold multiple times until it is retired by the end user that wants to claim that offset's impact.





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High-Quality Carbon Offset?

Additionality

Projects are unable to exist without revenue derived from carbon credits.

Verification

Monitored, reported, and verified by a credible third-party.

Permanence

Carbon reduction or removal will not be reversed.

Measurability

Calculated according to scientific data through a recognized methodology.

Avoid Leakage

An increase in emissions should not occur elsewhere, or account for any that occur.



Why purchase...



RECs

RENEWABLE ENERGY CERTIFICATES

- + Reduce the environmental impact of energy use, or Scope 2
- + Meet company sustainability goals (*RE100, CDP, SBT*)
- + Qualify for LEED points
- + Mitigate the environmental impact of the electricity used in their buildings

COMMON TECHNOLOGIES



SOLAR



WIND



SMALL HYDRO



GEOTHERMAL

CO₂

CARBON OFFSETS

- + Meet carbon accounting goals (*CDP, TCR, GRI*)
- + Demonstrate sustainability leadership
- + Lower your carbon footprint
- + Competitive differentiation
- + Address Scope 1 & 3 emissions
- + Qualify for LEED points

COMMON TECHNOLOGIES



LIVESTOCK BIOGAS



LANDFILL GAS



INDUSTRIAL GAS



SUSTAINABLE FORESTRY



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3DEGREES.COM

3Degrees™

Carbon tax VS Emission trading scheme

Comparison Table



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Characteristics	Carbon tax	Emission trading scheme
Certainty of prices	Businesses are certain about the price of carbon emissions	The price of emissions is not constant
Level of emissions	The level of emissions varies	The level of emissions is constant as there is a set limit on the level of emissions
Mode of control	The level of carbon emitted is set per tonne which translates it on a tax on oil, electricity or natural gas	The limit of emission is by offering permits for every tonne of carbon dioxide is produced.



10 RECOMMENDATIONS FOR MAKING THE EU ETS FIT FOR 2030



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ENFORCING THE POLLUTER PAYS PRINCIPLE



RECOMMENDATION 1

End free allocation and switch to full auctioning of ETS allowances as of 2023.



RECOMMENDATION 2

Remove excess ETS allowances from the market.



RECOMMENDATION 3

Extend the scope of the EU ETS to international aviation and shipping.



RECOMMENDATION 4

Do not apply the EU ETS to road transport and buildings.

SPENDING ETS REVENUES IN THE TRANSITION TO CLIMATE NEUTRALITY



RECOMMENDATION 5

Spend 100% of EU ETS revenues on the transition to climate neutrality.



RECOMMENDATION 6

Revisit the definition of 'climate action' spending in the EU ETS directive to align it fully with a clean and just transition.



RECOMMENDATION 7

Increase the size of the Modernisation and Innovation funds with green and social conditions attached.



RECOMMENDATION 8

The revenues raised by a Carbon Border Adjustment Measure should be returned to developing countries in the form of international climate finance.

ENSURING ACCOUNTABILITY FOR HOW EU ETS REVENUES ARE USED



RECOMMENDATION 9

Require Member States to earmark EU ETS revenues and prove that revenue is additional to existing climate spending from the national budget.



RECOMMENDATION 10

Improve the quality of Member States' reporting.

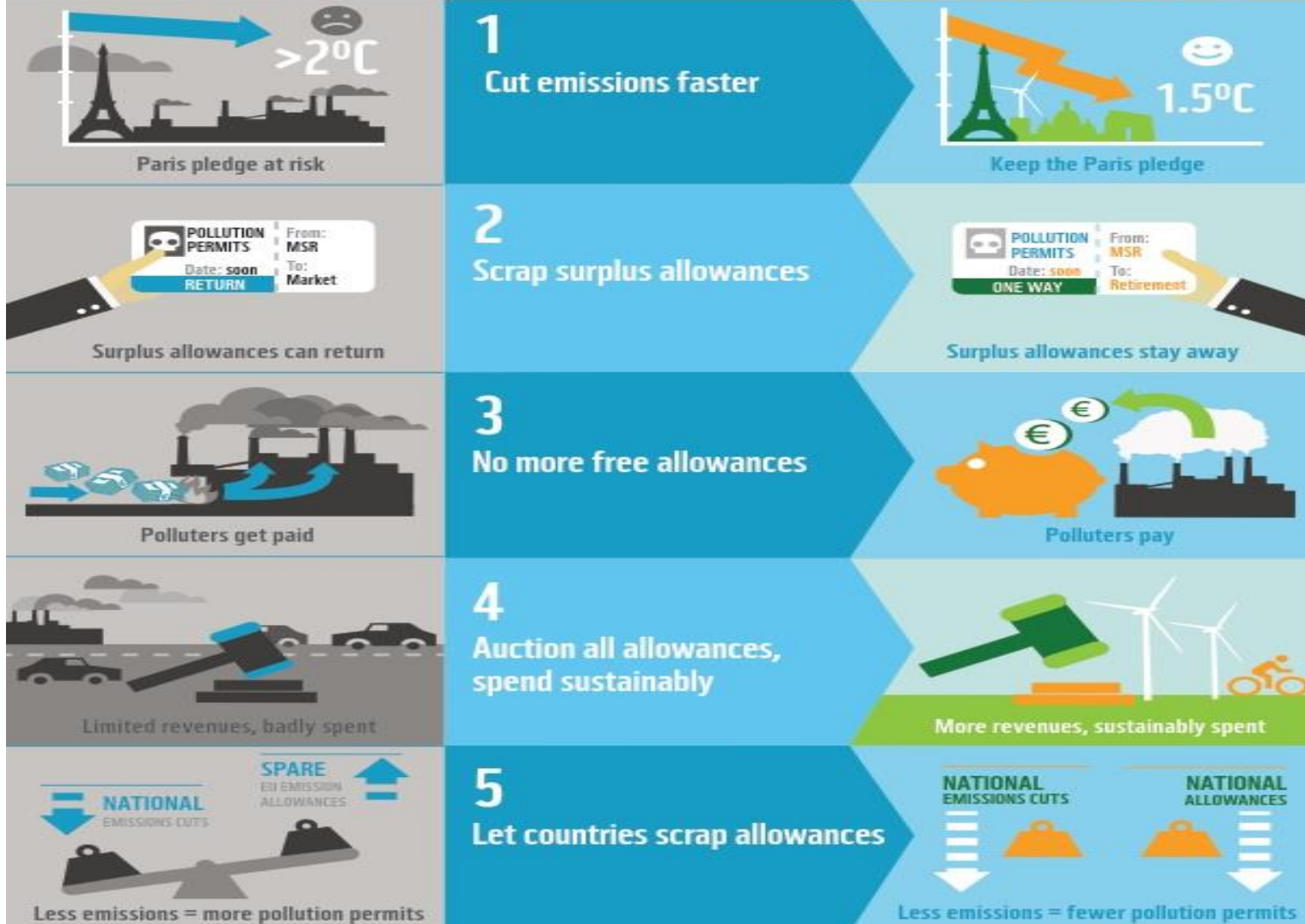
FIVE STEPS TO FIXING THE EU ETS



TODAY: ETS works for polluters

WHAT NEEDS TO BE DONE?

TOMORROW: ETS works for the climate



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FIVE STEPS TO FIXING THE EU ETS



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CARBON PRICING MAP (2021)



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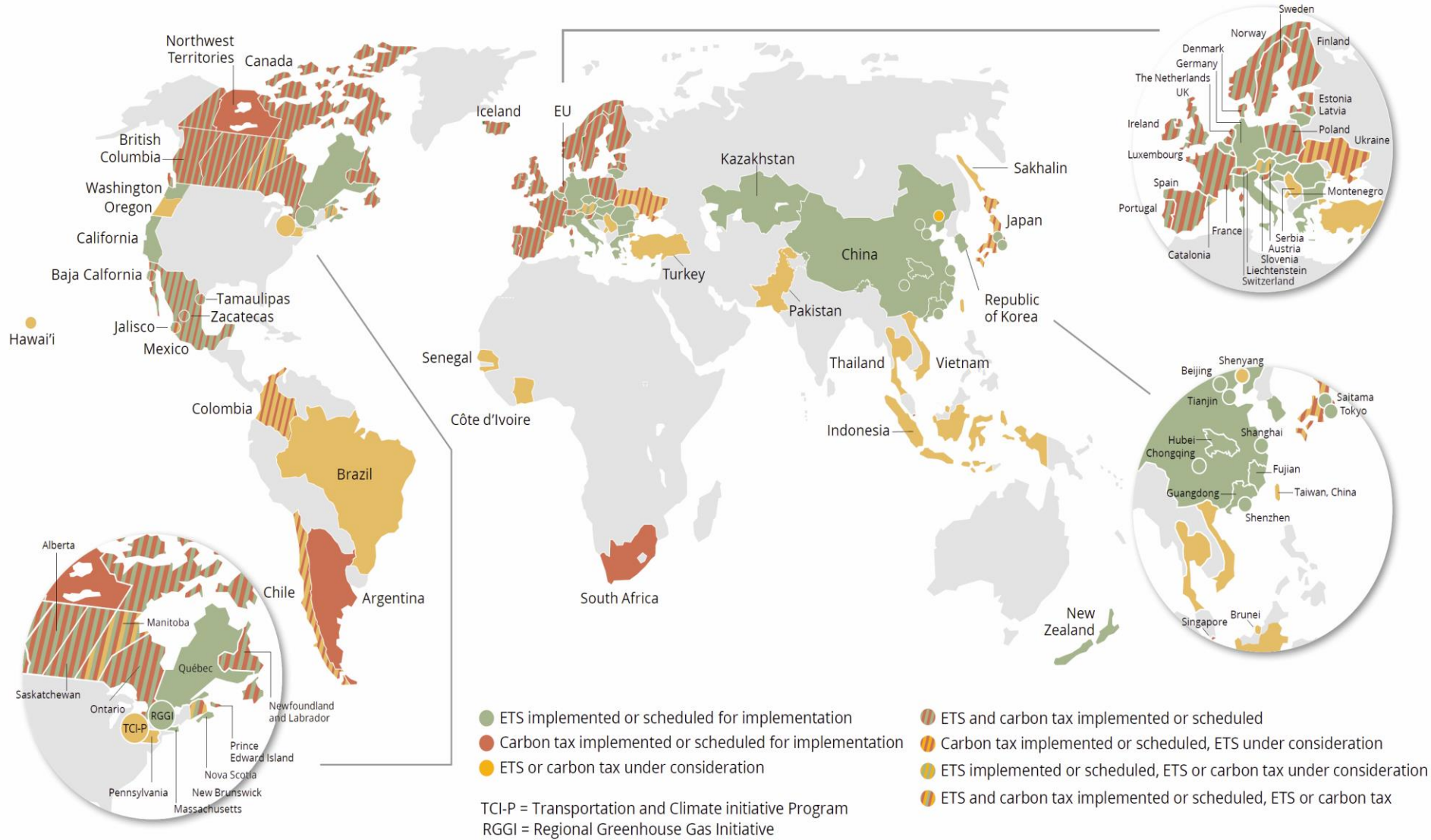
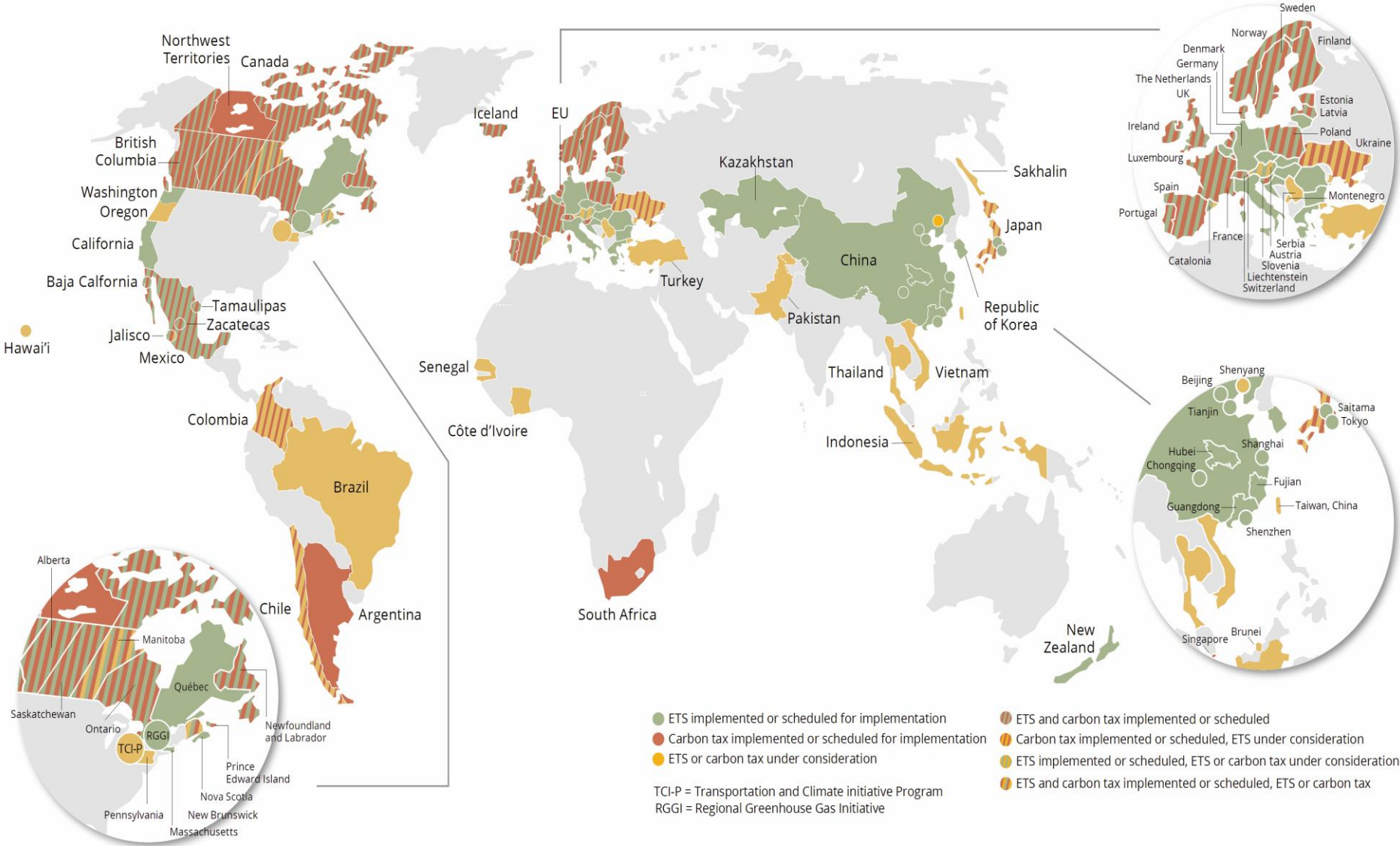


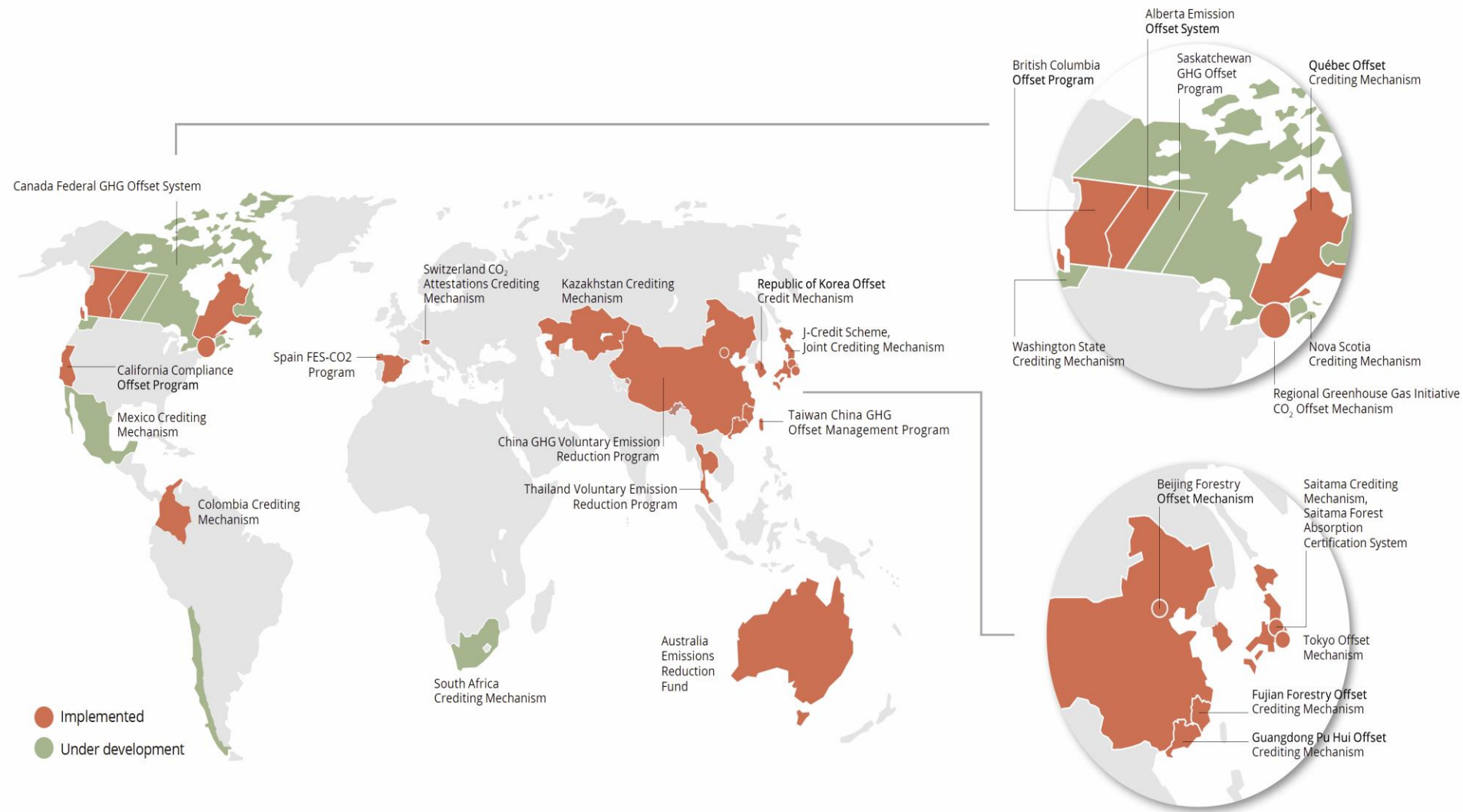
FIGURE 2.1
Map of carbon taxes and emissions trading systems



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FIGURE 3.4
Map of domestic crediting mechanisms



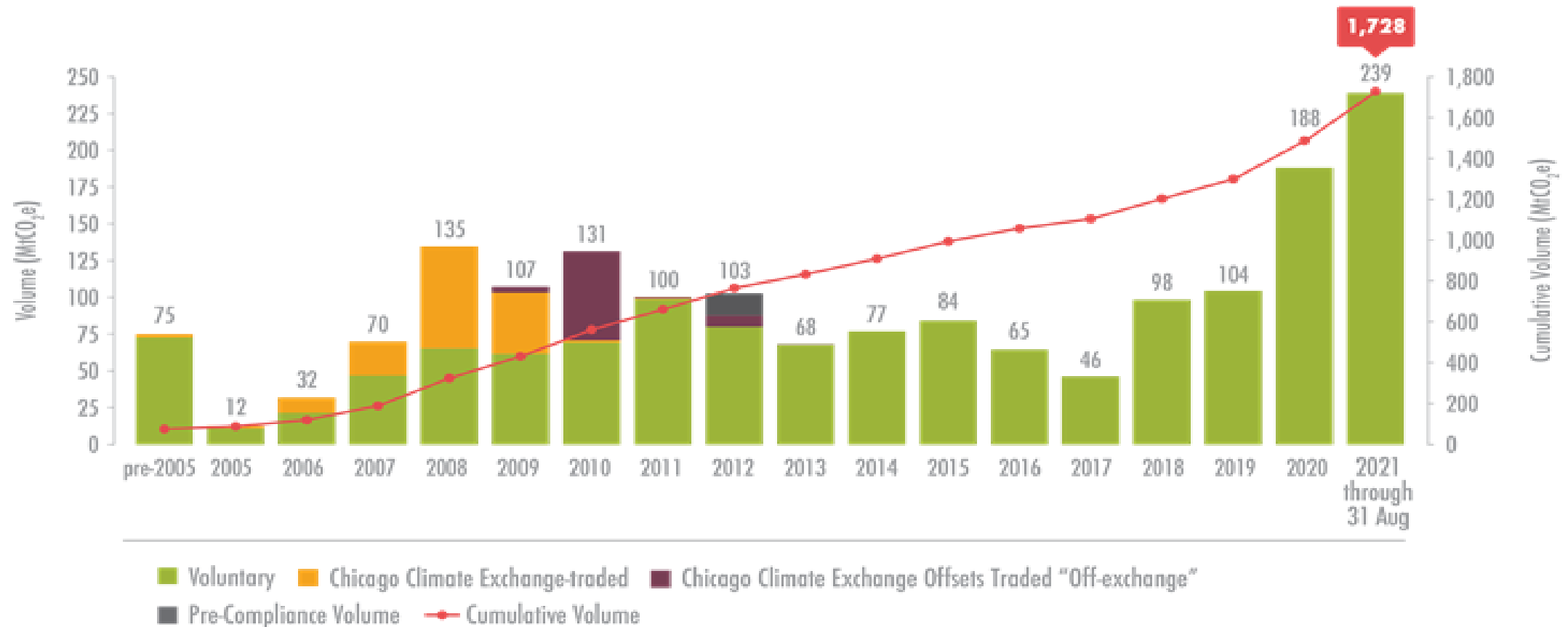
State of the Voluntary Carbon Markets 2021



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Increasing Trade Volume after 2017



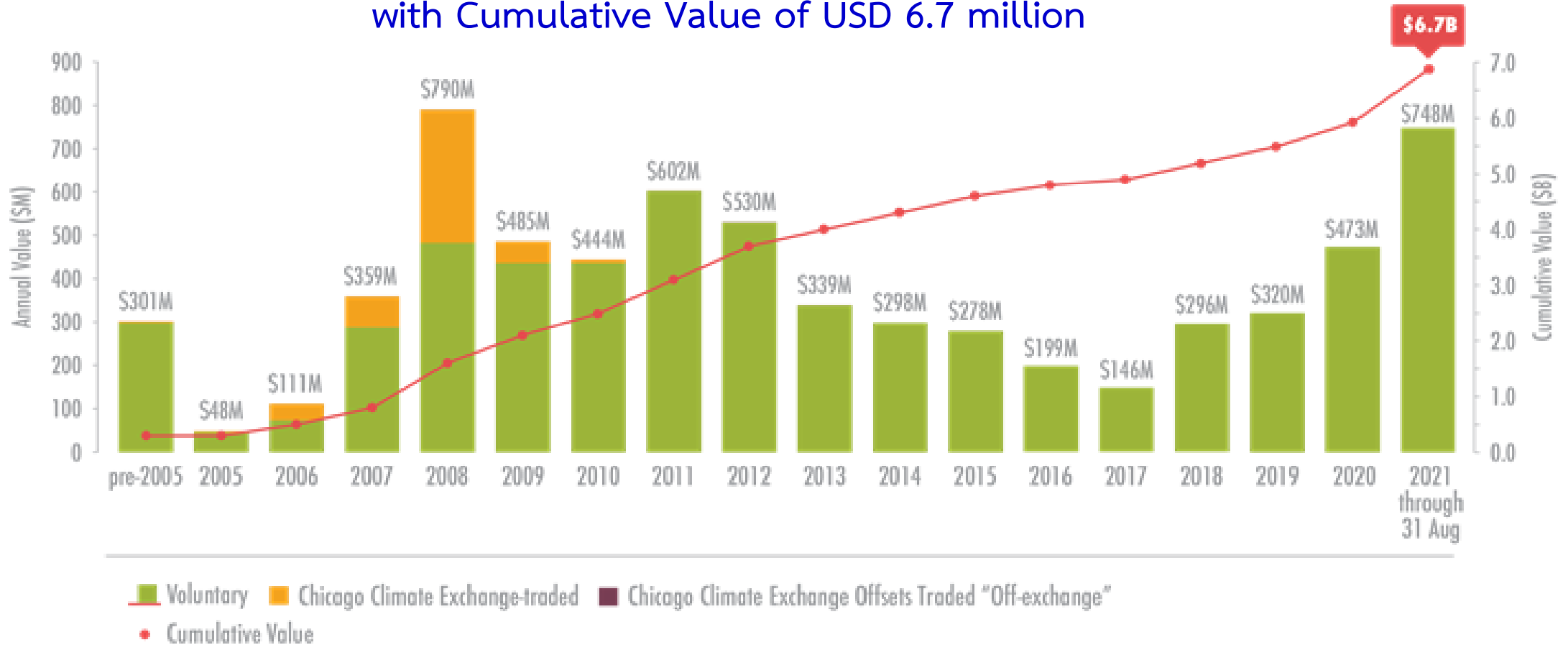
State of the Voluntary Carbon Markets 2021 (1)



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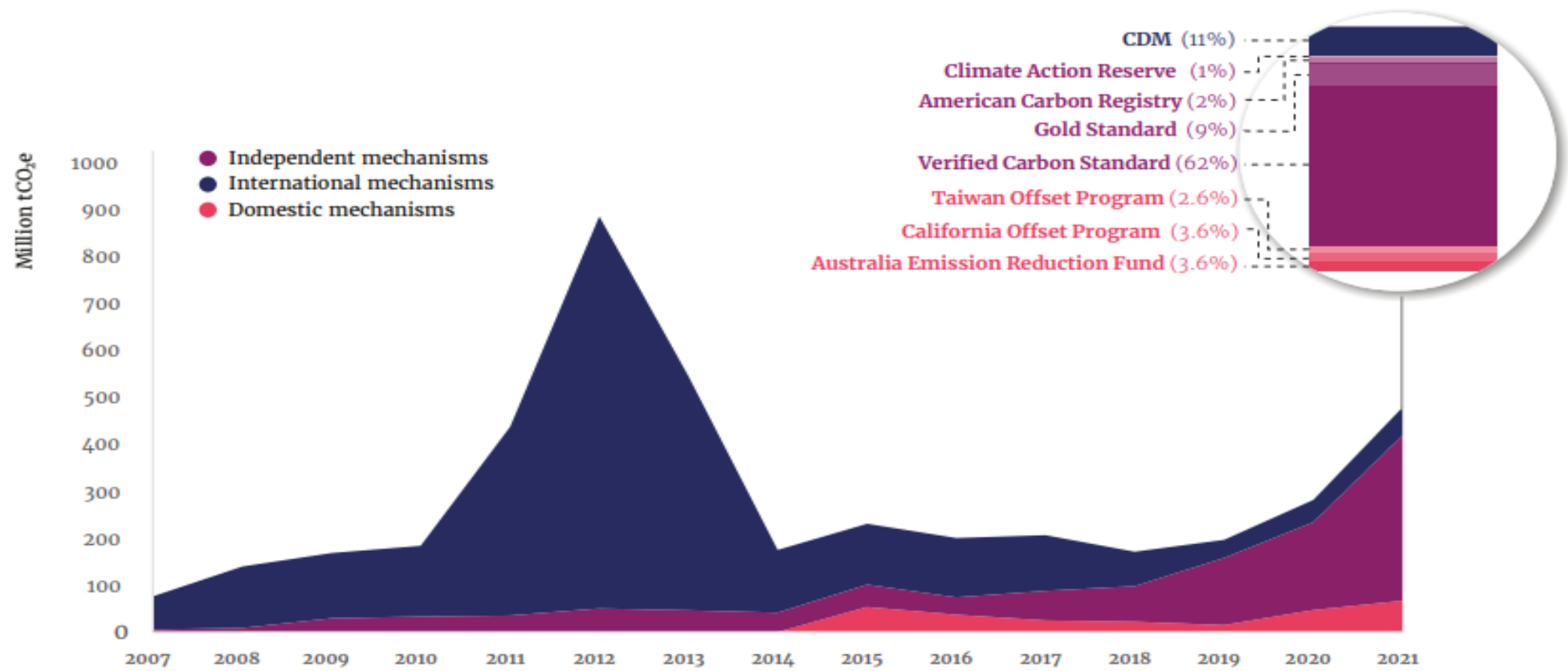
Trade Value in 2021 came close to the peak in 2008 at USD 790 million
with Cumulative Value of USD 6.7 million



Global volume of issuances by crediting mechanism category



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State of the Voluntary Carbon Markets 2021 (3)



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Volumes for EM Respondents that Reported Transactions for 2020 and 2021 (through 31 August)

	Volume (MtCO ₂ e)	Price per ton (USD)	Value (USD)
2021 (through August)	239.3	\$3.13	\$748M
2020	188.2	\$2.51	\$473M
2019	104.3	\$3.07	\$320M

Source: *Ecosystem Marketplace, a Forest Trends Initiative.*

Market Share, Transacted Volume and Average Price by Standard



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Carbon Credit VERRA / VCS is top trading with up trend

	2019		2020		2021 (through August)	
	Volume (MtCO ₂ e)	Price (USD)	Volume (MtCO ₂ e)	Price (USD)	Volume (MtCO ₂ e)	Price (USD)
American Carbon Registry (ACR)	2.5	\$5.36	5.4	\$8.44	2.0	\$11.37
Clean Development Mechanism (CDM)	4.9	\$2.02	7.0	\$2.19	8.2	\$1.13
Climate Action Reserve (CAR)	4.0	\$2.34	2.1	\$4.44	4.9	\$2.12
Gold Standard	13.2	\$5.27	13.9	\$4.57	5.2	\$3.94
Plan Vivo	0.9	\$8.99	1.2	\$8.49	0.7	\$11.58
Verified Carbon Standard (VCS)	44	\$1.74	66.1	\$3.76	125.6	\$4.17

Transacted Volume and Average Price by Project Region



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Highest trade in Asia with up trend for double fold in 2019 และ 2021

	2019		2020		2021 (through August)	
	Volume (MtCO ₂ e)	Price (USD)	Volume (MtCO ₂ e)	Price (USD)	Volume (MtCO ₂ e)	Price (USD)
Africa	16.1	\$3.94	14.9	\$4.24	23.9	\$5.52
Asia	45.6	\$1.80	63.0	\$1.60	91.8	\$3.34
Europe	1.1	\$2.92	1.7	\$9.47	0.8	\$2.96
Latin America & Caribbean	15.3	\$3.45	18.9	\$4.17	36.6	\$3.74
North America	15.5	\$3.51	11.6	\$6.31	10.0	\$5.13
Oceania	0.5	\$12.53	0.1	\$20.57	0.1	\$32.93

Global VCM Volumes Price and value (As of 2021)

Highest trade in Forest and Land use from VCM in 2020-2021



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	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	0.5M	\$10.38	\$4.7M	1.0M	\$8.81	\$8.7M

Carbon Credits – GHG Mitigation Projects in Thailand

1. Clean Development Mechanism (CDM)

Allow Annex I countries invest GHGs mitigation projects in Developing countries



CDM credits
 **16.32**
MtCO₂e
154/68

Remaining credits
2.27
MtCO₂e


2008 –
Present

July 2022

2. Thailand Voluntary Emissions Reduction (T-VER)

- Developed by TGO in 2014,
- Based on CDM experiences,
- Appropriate for Thailand Context



TVER credits
 **13.514**
MtCO₂e
312/136


27 Sep 2022

3. Joint Crediting Mechanism (JCM)

Bilateral cooperation between
Thailand and Japan

11/5 Projects



JCM credits
 **2,015**
tCO₂e

Goal
0.19
MtCO₂e

29 Sep 2022

4. Other International Standards

- VCS (41/29)
- Gold Standard (36/19)

2.00 MtCO₂e
3.72 MtCO₂e



29 Sep 2022

2008 –
Present

Climate Change Institute FTI-CCI

Marketplace for 1) Carbon Credit, 2) RE, 3) REC

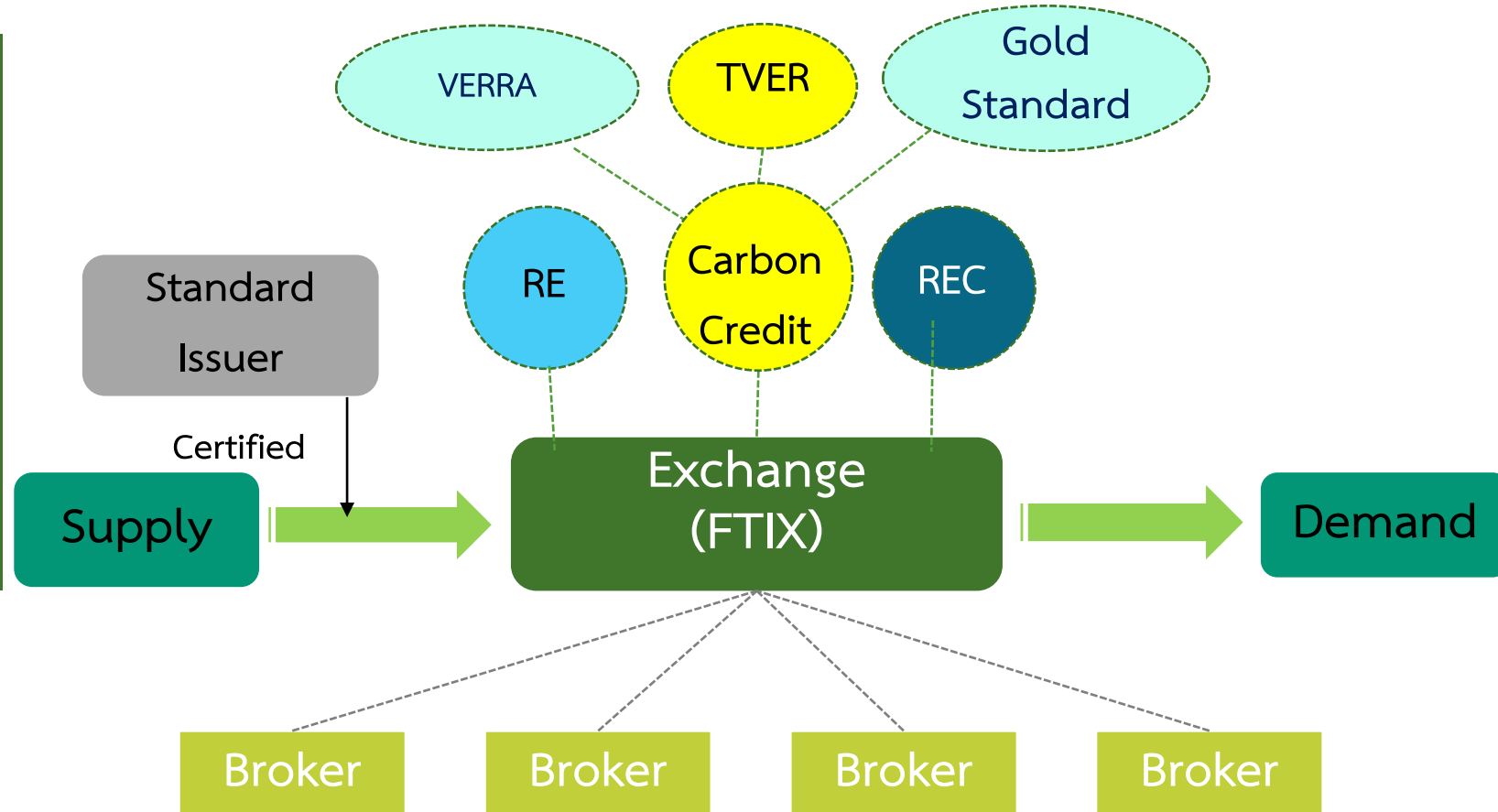


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FTIX

FTI: CC/RE/REC X Platform



Opportunity & Challenge



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Opportunity

- ☐ Leadership in Climate Change Management
- ☐ Cost Reduction and Profit Increase for Sustainable Business
- ☐ Additional Income from Green Investment
- ☐ Investment Attraction from Major Climate Funds
- ☐ Adaptation to cope with Future Risk
- ☐ Expedite Energy Transition
- ☐ Greener Consumer, Health and Environment

Challenge

- ☐ Climate Change is Global Problem but Loss & Damage is on the Vulnerable Group the most
- ☐ Pressure from Ambitious Targets, Non-Tariff Barrier, and Corporate Policy to Cope with Climate Change
- ☐ Cost from MRV – Measurement, Report, Verification



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Thank You

ขอบคุณ