



CME Group – Voluntary Emissions Markets

Market based mechanism for carbon emissions

Market-based mechanisms for carbon emission are taking place in Mandatory and Voluntary markets.

Mandatory → Allowance for producing less emissions

- Countries implement an Emission Trading Scheme (ETS)
- Define an emission reduction target over a period
- Decide which type of industry are covered
- **Allowances** are emitted and allocated
- ETS are “**Cap and Trade**” mechanism

Some form of Emission Units might be accepted for offset (CER)

Main ETS:

ETS	Allowance	Start
EU ETS	EUA	2005
New Zealand ETS	NZU	2008
California ETS	CCA	2012
Korea ETS	KAU	2015
China ETS	-	2021

*Sources: Refinitiv

Trading volume (2020):

10.3 billion allowances* – each worth 1 tone of CO₂.

\$272 billion*

EU ETS: 90% of global value and most of the total market trading volume*.

Voluntary → Credit (Unit) for removing emissions

Emission **Units** are issued from specific projects or programs reducing GHG emissions.

These Units can be **traded** and purchased by firms to **offset emissions** they generate.

First introduced by the Kyoto Protocol and implemented under the Clean Development Mechanism (CDM) in the form of Certified Emission Reduction (CER)

Other Emission Units can be issued for projects registered by other entities than the UN-based CDM.

Units traded in the voluntary market are a **key mechanism to achieve carbon-neutrality**.

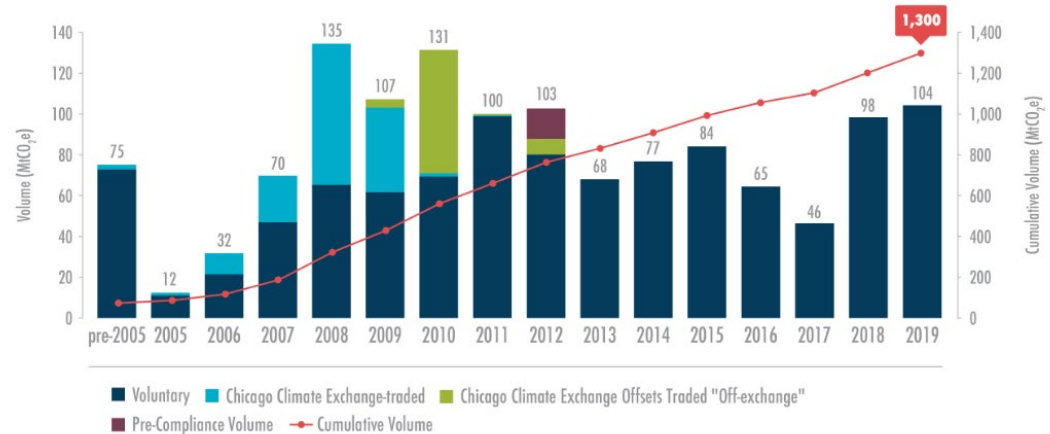
Example of Emission Units:

Program	Unit
Clean Mechanism Development (CDM)	CER
Verified Carbon Standard (VCS)	VCU
China GHG Voluntary Emission Reduction Program	CCER

State of Voluntary Emissions Market

- UN Race to Zero campaign
 - 2,162 businesses
 - 127 countries
 - 708 cities
 - 25% global CO₂, over 50% GDP
- How can they satisfy these pledges?
 - Remove/cut emissions
 - Negative emissions
- Taskforce on Scaling Voluntary Carbon Markets
 - 15-fold scale-up needed by 2030 vs 2019, maybe more
 - One of Six Key Areas of Focus:
CORE CARBON REFERENCE CONTRACTS

Historical Voluntary Offset Transaction Volumes



The volume of voluntary carbon offsets transacted in 2019 reached its highest level since 2010.

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Carbon Offsetting and Reduction Scheme for International Aviation

- **Background**
 - Adopted by ICAO in 2016
 - Carbon neutral growth beyond 2020 from international aviation
 - Global aviation emissions account ~2% global emissions
 - Projected to mitigate 2.5 billion tons of CO₂E
- **Structure**
 - Technical Advisory Body (TAB)
 - Eight approved Registries
 - Rolling Applications
- **Phases**
 - Pilot 2021-2023
 - First Phase 2024-2026
 - Second Phase 2027-2035



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Global Emissions Offset (GEO) Futures

- Physical contract – Seller’s option
- Longer term hedge without delivery
 - Roll position
 - Exit position
 - Exchange for Physical (EFP)
- Emission reduction goals
 - Emerging hybrid approach - 80/20 Rule
- Carbon neutral commodities
 - Pair with existing commodities during transition

CONTRACT SPECIFICATIONS

CONTRACT	CBL GLOBAL EMISSIONS OFFSET FUTURES
COMMODITY CODE	GEO
RULE CHAPTER	1265
LISTING PERIOD	Monthly contracts listed for the current year and the next three calendar years. List monthly contracts for a new calendar year following the termination of trading in the December contract of the current year.
CONTRACT SIZE	1,000 environmental offsets
SETTLEMENT TYPE	Deliverable
TERMINATION OF TRADING	Trading terminates three business days prior to the last business day of the contract month.
MINIMUM PRICE TICK	\$0.01 per environmental offset
VALUE PER TICK	\$10.00
BLOCK TRADE MINIMUM THRESHOLD	10 contracts
TRADING AND CLEARING HOURS	Sunday - Friday 6:00 p.m. - 5:00 p.m. (5:00 p.m. - 4:00 p.m. CT) with a 60-minute break each day beginning at 5:00 p.m. (4:00 p.m. CT)

What is a “carbon-neutral” cargo?

The “carbon-neutral” denomination does not mean that a cargo does not cause any emissions, but rather that the carbon emissions have been offset through the purchase of credits from carbon removal projects.

Based on the Greenhouse Gas Protocol which represents the most widely used GHG accounting standards, lifecycle GHG emissions can be divided and measured according to three “scopes” (Scope 1, 2 and 3):

- Scope 1 emissions are direct emissions from owned or controlled sources.
- Scope 2 emissions are indirect emissions from the generation of purchased energy.
- Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

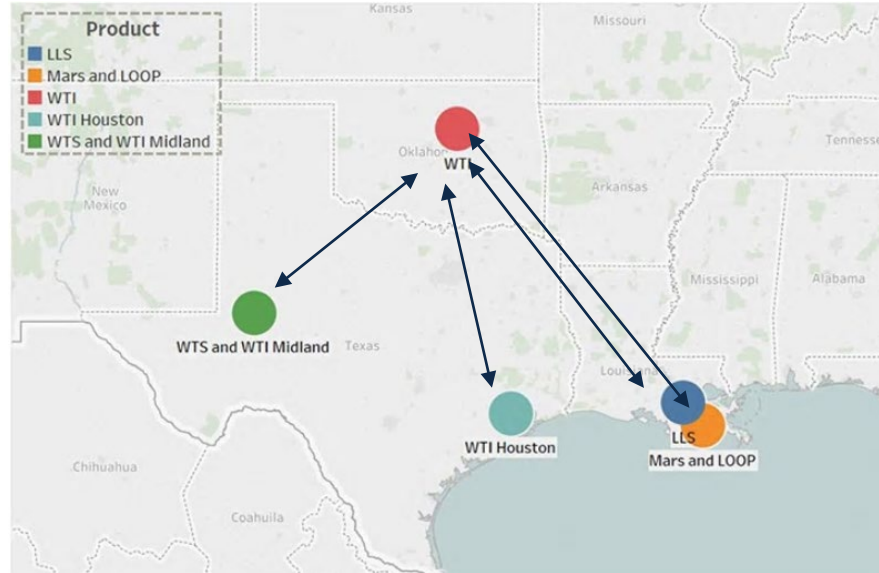
Many firms have already transacted “carbon neutral” cargoes in the LNG and more recently in the crude oil market.

Date	Seller	Buyer	Arranging Bank	Tanker	Delivery	Source of Certificates	Scope covered	Press Release
Jun-19	Shell	Tokyo Gas		LNG	Japan	From Shell project portfolio	1, 2 & 3	link
Jun-19	Shell	GS Energy		LNG	South Korea	From Shell project portfolio	1, 2 & 3	link
Jun-19	JERA			LNG	India	CER	3	link
Mar-20	Shell	CPC		LNG	Taiwan	From Shell project portfolio	1, 2 & 3	link
Oct-20	Total	CNOOC		LNG	China	VCS	1, 2 & 3	link
Mar-21	Mitsui	Hokkaido Gas		LNG	Japan	From Mitsui portfolio	1, 2 & 3	link
Mar-21	Gazprom	Shell		LNG	U.K	VCS	1,2 & 3	link
Mar-21	RWE	POSCO		LNG	South Korea	Gold Standard		link
Apr-21	DGI	Toho Gas		LNG	Japan			
Aor-21	Pavilion			LNG	Singapore	VCS, CCB		link
Jan-21	Occidental	Reliance	Macquarie	Crude oil	India	VCU through CBL platform	1, 2 & 3	link
Mar-21	Woodside	Trafigura		Condensate		Gold Standard, VCS		link
Apr-21	Trafigura	Braskem		Naphtha	Brazil	VCS (nature-based)		link

Source: https://giignl.org/sites/default/files/PUBLIC_AREA/giignl_lng_carbon_offsetting_061820.pdf

Evolution - basis markets

- Anchor with GEO
 - Project type
 - Geographic region
 - Community benefits
- Existing commodities markets
- Spot pricing, follow by futures



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