

CARBON MARKETS

Carbon markets trade in emissions reductions (also known as carbon 'credits'). Such credits are created by measuring how much emissions have been reduced below a pre-decided baseline in terms of standardized units.

For example, if two polluters are required to reduce their emissions by 1 tonne of carbon dioxide each, and one of them achieves a reduction of 2 tonnes, it can 'sell' the extra tonne to the other polluter. The second polluter would not have to reduce its emissions, but could simply use the credit that it bought to show that it complied with the pollution regulation.

MARKETS PROVISIONS IN THE PARIS AGREEMENT

- Carbon markets are dealt with under Article 6 of the Paris Agreement.
- Two important parts of Article 6 are:
 - Article 6.2—Internationally Transferred Mitigation Outcomes
 - Article 6.4—Sustainable Development Mechanism
- Rules and guidelines under Article 6 were supposed to be finalized by 2018 Conference of the Parties (COP24) in Katowice, along with the broader 'Paris Rulebook'. It did not happen.
- Rules and guidelines on markets are now expected to be finalized in Madrid this December (COP25).

	Article 6.2	Article 6.4
Type of market	Bilateral and multilateral	Global and centralized
Precursor	No direct precursor, but it would apply to markets like the EU Emissions Trading System	Clean Development Mechanism
Unit	ITMO; not standardized	A6.4ER; equivalent of one tonne of CO ₂
Trading should...	Promote sustainable development Ensure environmental integrity Avoid double counting	Foster sustainable development Ensure overall mitigation in global emissions
Share of proceeds	No provision	Will go toward adaptation in developing countries



ARTICLE 6.2 INTERNATIONALLY TRANSFERRED MITIGATION OUTCOMES

- This sub-article deals with bilateral or mini-multilateral markets. The best existing example is the European Union Emissions Trading System (EUETS).
- There could be more such markets or clubs—a SAARC Carbon Market, for example, or an India–China Joint Emissions Trading System.
- Each market or club can have contradictory or overlapping club rules, which would make tracking actual emissions reduction very complicated. Article 6.2 aims to tackle this ‘spaghetti bowl’ problem.
- Article 6.2 applies to any ‘internationally transferred mitigation outcome’ (ITMO), **if** a country is using this ITMO to fulfill its national climate target (also known as a Nationally Determined Contribution or NDC).
- As a concept, ITMO has deliberately been kept vague. It obviously includes carbon credits (which are relatively standardized), but can apply to any future innovations in transferring ownership of emissions reductions across borders.
- If a country is counting an ITMO towards its NDC, it is required to:
 - Promote sustainable development and ensure environmental integrity and transparency, including in governance
 - Apply robust accounting to ensure the avoidance of double counting
- The details of how to satisfy these requirements are not specified in the sub-article. They will be specified in the guidelines to be finalized in Madrid.

ARTICLE 6.4 SUSTAINABLE DEVELOPMENT MECHANISM

- This sub-article sets up a centralized, global platform to trade standardized carbon credits.
- The platform established by Article 6.4, informally referred to as the Sustainable Development Mechanism (SDM), is the direct successor to the Clean Development Mechanism (CDM) under the Kyoto Protocol.
- Credits are generally referred to as ‘A6.4ERs’, which stands for ‘Article 6.4 Emissions Reductions’.
- It is very likely that the rules under this sub-article will standardize each A6.4ER at one tonne of carbon dioxide equivalent (1 tCO₂e).
- In order to avoid repeating fatal mistakes of the CDM (see *Box: From Kyoto to Paris: CSE’s concerns with markets*), the key aims of the SDM are:
 - Promoting greenhouse gas emissions mitigation **while fostering sustainable development**
 - Delivering an **overall mitigation** in global emissions
- The sub-article is clear that there cannot be ‘double-counting’—a carbon credit can only be counted towards achieving the national target (NDC) of one country.
 - Preventing double-counting is harder under

- the Paris Agreement than under the Kyoto Protocol, and much more important,
- This is because, unlike the Kyoto Protocol, all countries have taken on national targets under the Paris Agreement. The incentive to double count is much higher.

- A 'share of proceeds', i.e., a percentage of the

value of credits traded through the SDM, will go towards covering the cost of adaptation in developing countries.

- This is a successor to the 2 per cent share-of-proceeds which is currently transferred from the CDM to the already operational Adaptation Fund.

KEY OPEN ISSUES

- NDCs are not standardized, very few include absolute emissions reduction targets. India's target, for example, is stated in terms of emissions-per-unit-GDP. How can carbon credits be counted against such NDCs?
- It is difficult to distinguish business-as-usual emissions reduction from truly 'additional' reduction that can be credited and traded.
- Should credits from the Kyoto Protocol's CDM be allowed to be carried forward into the SDM under Article 6.4 of the Paris Agreement?
- New and increasingly ambitious NDCs have to be submitted every five years (see the factsheet on *Paris Targets*). Can credits be used across NDCs? Should their value change (reduce) with time, to account for increasing ambition?
- How do we ensure that emissions trading results in 'overall mitigation'? Some countries have proposed 'compulsory cancellation' of a fixed percentage of credits generated. Alliance of Small Island States wants this to be fixed at 20 per cent.
- Interaction issues:
 - How do Article 6 markets relate to emissions markets created outside the UNFCCC process such as the International Civil Aviation Organization's CORSIA?
 - Are the markets under Article 6.4 and 6.2 completely separate? Can an ITMO become an A6.4ER? Under what conditions?


From Kyoto to Paris: CSE's concerns with markets

Carbon markets in the Kyoto era, particularly the Clean Development Mechanism (CDM), were created in the hope that their expansion would lead to the scaling up of investments in low-carbon and mitigation technologies. However, they cannot be termed successful interventions, for a number of reasons:

Emissions reduction targets of developed countries were largely outsourced: The Kyoto target of developed countries translated to a reduction of 2.59 GtCO₂e between 2008 and 2012. CDM allowed emissions reduction projects in developing countries to earn Certified Emission Reduction Credits (CERs), each equivalent to one tonne of CO₂ reduction. By 2012, expected CERs from all registered CDM projects totaled nearly 2.5 GtCO₂e. Basically, all developed countries' emissions reduction obligations were capable of being outsourced.

Massive surplus of assigned amount units: The targets defined under the Kyoto Protocol for some countries were excessively liberal. This resulted in some countries being allocated 'assigned amount units' (AAUs), i.e. tradable units or credits which represented an emissions allowance of one metric tonne of CO₂e. Russia and some East-European economies-in-transition were assigned nearly 13 billion AAUs, resulting in a massive surplus which was enough for all countries to avoid any mitigation action until well after 2020. Some restrictions were placed on the trade of these units after 2012, but the damage for the first commitment period (2008–12) had already been done.

Excessively cheap non-CO₂ reductions: CDM did not differentiate between reductions in emissions of CO₂ and other greenhouse gases (such as HFC-23) with much higher warming potential. This resulted in a disproportionate generation of cheap CERs from these non-CO₂ gases. The investment required to generate nitrous oxides (N₂O)—or perfluorocarbons-based (PFC) CER—was estimated at around US \$0.79 per tonne CO₂e—the lowest among all sectors. HFC, PFC, sulphur compounds (SF) and N₂O projects account for



only 1.7 per cent of the projects approved under the CDM, but 46 per cent of the CERs issued. This is a problem—even though CO₂ has a lower warming potential, its use is much more widespread and ingrained in the economy. CDM, therefore, allowed emissions reductions without making fundamental changes in economies of developed countries.

Concerns about carbon leakage: ‘Carbon leakage’ refers to a reduction in emissions in one country or sector causing an increase in emissions in a different country or sector. This negates the effect of emissions reduction efforts and causes concerns about trade competitiveness. Leakage is measured as a percentage, which represents the emissions increase within non-regulated jurisdictions divided by the reductions within regulated jurisdictions. The EU considered that its Emission Trading System was at risk of causing a leakage of between 2 per cent to 73 per cent. It identified 44 sectors (including refineries, iron and steel, and cement) which were most at risk between 2015 and 2019. It then allocated free credits to European companies within these sectors to ensure that they would not lose out to competitors outside the EU. This further reduces the potential of such market solutions to achieve real emissions reductions.

Excessively cheap forestry reductions: The inclusion of afforestation and reforestation (A&R) in CDM resulted in the creation of some of the cheapest CERs available. They were estimated to require an investment of around US \$10 per tonne CO₂e—significantly cheaper than sectors such as wind (closer to US \$40 per tonne CO₂e) and solar (US \$391 per tonne CO₂e). This was despite the imposition of a cap on the use of CDM forestry sink projects by Annex I Parties to fulfill their emissions reduction commitments. This was also despite the exclusion of the ‘avoided deforestation’ sector which, based on evidence from voluntary markets, has the potential to generate even cheaper offsets (estimated at US \$5.2 per tonne CO₂e versus US \$7.7 per tonne CO₂e for the A&R sector). Hence, the inclusion of the forestry sector in any Paris market mechanism threatens to generate offsets without significant economic changes in developed countries.

Skewed interpretation of additionality: The interpretation of additionality for CDM’s purposes is excessively slanted towards business and financial criteria at the cost of environmental criteria. This only serves to maintain an unsustainable status quo. Supply-side ‘energy efficiency’ projects (which effectively subsidize the continued use of fossil fuels) were allocated 4.8 per cent of all CERs. In comparison, demand-side efficiency (which does not lock in current patterns of fossil fuel usage), accounted for only 0.3 per cent of all CERs. Hydroelectric power was considered additional enough to merit 15 per cent of the allocated CERs, while solar power was allocated just 0.34 per cent. Additionality apparently seeks something more, but the current application of the concept is decidedly business-as-usual.

Possible net increase in global emissions: The actual mitigation effectiveness of CDM is very hard to assess. A 2014 study estimated that the global effect of CDM by 2020 could be anywhere between an increase in total emissions by 3.6 billion tonne CO₂e or a reduction of 3.2 billion tonne CO₂e.

Corruption, conflicts of interest and lack of transparency: Even though CDM has mechanisms in place for oversight, and third party validation and verification, their credibility has been repeatedly challenged. The CDM executive board, which registers projects and issues CERs, has faced allegations of conflicts of interest and lack of transparency because its decisions are made behind closed doors. Designated Operational Entities, which are certified by the board to act as third party verifiers of CDM projects, have been subject to concerns about their independence and the susceptibility of their third party verifiers to bribes or collusion. In 2008–09, the UN suspended two individuals (who were responsible for validating nearly two-thirds of the emissions reductions now being utilized by industries in the developed world) for irregularities found in their project assessments. Concerns have also been raised about the revolving door in the highly specialized CDM industry, which fosters conflicts of interest.