

Emissions Trading

Glossary of Terms

Cap and Trade

A market-based policy tool that establishes an aggregate emission cap on total emissions from a group of sources and creates a financial incentive to reduce emissions. The emission cap is expressed as allowances distributed to individual emission sources that must surrender allowances to cover their emissions. The program provides flexibility for sources with low-cost reductions to reduce even further and sell allowances to others with higher costs of control, resulting in achievement of the environmental goal at lowest cost.

(Source: Tools of the Trade: a Guide to Designing and Operating a Cap and Trade Program for Pollution Control, USEPA, June 2003)

Target

A Target is a national goal of emissions in a specific year, including Regulated and Non-Regulated sectors.

The Target can include regulated reductions through emissions trading, or other regulations, and it can also include voluntary activities such as public energy conservation campaigns.

If a nation fails to achieve its Target, the Government will be embarrassed politically, but no charges will be laid.

“Target” should not be confused with “Cap,” or “Baseline.”

Large, Direct Emitters (LDEs)

Individual facilities which emit large quantities of greenhouse gases directly into the atmosphere,

e.g. facilities which emit more than (e.g.) 100,000 tonnes of Direct Emissions of CO₂e per year. Typical LDEs include coal-fired electricity generating stations, petroleum refineries, cement kilns.

Direct Emissions

Direct emissions of greenhouse gases are emitted directly from the exhaust stacks of a facility.

e.g. a coal-fired electricity generating station emits CO₂ directly into the atmosphere from combustion of coal in its boilers.

Indirect Emissions

Emissions from suppliers of goods and services to a facility.

e.g. a motor vehicle assembly plant consumes electrical energy, generated by a coal-fired power station. From the assembly plant's point of view, the emissions from the combustion of coal in the power station are indirect emissions, because they are not emitted directly from the assembly plant's own stacks.

Capped Facilities

The facilities which must comply with the emissions trading

Regulation.

Synonyms:

Capped Sector, Capped Emitters, Regulated Sector, Regulated Emitters, "Under the Cap"

Uncapped Facilities

The facilities, sites, organizations or individuals which are not required to comply with the emissions trading Regulation.

Synonyms:

Uncapped Sectors, Non-Regulated Sectors, Non-Regulated Emitters

Cap

A regulated, specified, maximum total of emissions of greenhouse gases from the total of Capped Facilities in an emissions trading system in a specific year.

In a Cap-and-Trade system, the Cap is applied to the Capped Facilities as a group, and not applied to each individual Capped Facility.

At the beginning of the year, the Government Creates and Allocates Allowances equal to the announced Cap for that year, e.g. if the Cap for 2017 is 18 Megatonnes of CO₂e, the Government will Create and Allocate 18 Megatonnes of CO₂e Allowances.

Hard Cap

A Cap significantly lower than the total emissions that would have been expected from the Capped Sector, in the absence of the emissions trading Regulation.

e.g. A Capped Sector emits a total of 10 Megatonnes of CO₂e in 2010. The Government imposes a “Hard” Cap of 8 Megatonnes of CO₂e on the Capped Sector for 2011.

Allowance

A permit to emit a specified quantity of greenhouse gas into the environment

An allowance is a certificate, printed by the Government, and/or a record in the Registry, a data base maintained by the Government. Each allowance must be marked with the country of origin, the year of creation, the quantity and name of the pollutant, and a unique serial number. At the beginning of each year of emissions trading, the Government creates Allowances equal to the Cap, e.g. if the Cap for the regulated facilities is 15.8 Megatonnes CO₂e in a certain year, the Government creates 15.8 thousand Allowances, each Allowance representing 1000 tonnes of CO₂e.

Strong Synonym: Permit (original USEPA term)

Weak Synonym: Credit (a vague, misleading term)

Allocation

After the Government creates new Allowances, at the beginning of the year, the Government Allocates (gives, distributes, sells) these new allowances to facilities, organizations or individuals according to some fair scheme.

Free Allocation

Allocation of Allowances to facilities or organizations for free.

The Government can Allocate some or all of the new Allowances to Capped Facilities for free, or to organizations in the Uncapped Sectors for free.

Auction

The Government may choose to sell some or all Allowances to Capped Facilities or to other organizations by auction.

Offset

A reward for emission reductions outside the Capped Sector. An organization which is not a Capped Facility can complete an emission reduction project and apply to the Government for creation of Offsets, to reward the emission reductions. If the Government agrees that the emission reductions were real and satisfy program requirements, the Government will create a specific number of kilotonnes of Offsets, with specific serial numbers, and transfer these new Offsets to the applicant's Account in the Registry.

Strong Synonyms: Offset Credit, Emission Reduction Credit

Weak Synonym: Credit (a vague, misleading term)

Baseline

In an emission reduction project, the Baseline is the total annual emissions that would have occurred, in the absence of the project. In the creation and award of Offsets, calculation of the Baseline is important in calculating how many Offsets the project deserves.

Reward for Early Action

Awarding Offsets to a recipient for an emissions reduction project that was completed before the beginning of the emissions trading system.

Tradeable Units

Allowances and Offsets are both Tradeable Units, equal to each other at Retirement.

Registry

A set of spreadsheets which tracks the history of every Tradeable Unit and every facility or organization that holds any Tradeable Unit. The Registry shows the Creation, Allocation, Transfer and Retirement of every Tradeable Unit. The Registry looks like an old fashioned bank ledger, with each page of the ledger showing the history of one Account. The Registry is visible to the public.

Account

Each page in the Registry shows the history of one Account. Each Capped Facility and each organization which has ever owned any Tradeable Units has an Account in the Registry. The Government has an Account, to show the creation of Tradeable Units. The only other Account is the Retirement Account.

Transfer

Tradeable Units can be Transferred (e.g. sold) from one Account to another. Each Transfer must be recorded in the Registry.

Monitoring and Reporting

To comply with the Regulation, each Capped Facility must Monitor its greenhouse gas emissions, completely, accurately and honestly, and Report its total annual emissions to the Government at the end of each year.

Retirement

At the end of each year, each Capped Facility must Retire (Transfer to the Retirement Account) Tradeable Units equal to its Reported emissions for the year.

Retirement Account

At Retirement, an Account holder withdraws Tradeable Units from its Account, and Transfers the Tradeable Units to the Retirement Account in the Registry.

The Retirement Account functions as a “graveyard” for Retired Tradeable Units. The “tombstones” are marked with the serial numbers of the Retired Tradeable Units. Retired Tradeable Units are never Transferred out of the Retirement Account.

Banking

The saving of Tradeable Units in an Account, from one year to the next. A Capped Facility which has more Allowances than it needs for Retirement at the end of the year can Bank its extra Allowances.

Cogeneration

The sequential production of useful mechanical energy and useful thermal energy in the same engine. Cogeneration is usually the production of electricity and useful process steam from a steam turbine or gas turbine power plant. For the purposes of emissions trading, the air emissions from the cogeneration plant can be divided between mechanical energy and thermal energy.

Leakage

Avoiding an environmental regulation by moving an activity outside the regulated facility. E.g. an oil sands plant could avoid greenhouse gas emission limits on its upgrader by moving the upgrader to a third world country.

Baseline and Credit

Another form of emissions trading, not the same as Cap and Trade. In a **Baseline and Credit** system, the **Government does not specify a Cap**. The **Government specifies an annual emission limit (the “Baseline”)** for each **Regulated Facility**, which is required to **Monitor and Report** its annual emissions. **At the end of the year, a Regulated Facility which has emitted less than its Baseline receives “Credits” from the Government.** Another **Regulated Facility** which has emitted more than its **Baseline** must buy **Credits** equal to its exceedance, and **Transfer the extra Credits to the Government**.

Note that the word “Baseline” in a Baseline and Credit system is not the same as the word “Baseline” in Offset creation.

Intensity-Based

In a **Baseline and Credit** system, the Government might establish the emissions **Baseline** for a certain **Capped Facility** according to a specific **Emission Intensity**.

Synonym: Rate-Based

e.g.

A Coal-fired Electricity Generating Station, a Capped Facility
Generates 15,000,000 Megawatt-hours per year of electrical energy

Government-Specified Emissions Intensity for setting the Baseline:
600 kg CO₂e per Megawatt-hour of generated electricity

Baseline for this facility:

$15,000,000 \times 600 = 9 \text{ billion kg/y} = 9 \text{ Megatonnes/y CO}_2\text{e}$

Emission Factor

A commonly accepted numerical value for the emissions released by combustion of a specific quantity of a specific fuel, e.g. combustion of one litre of gasoline releases 2.36 kg of CO₂ into the atmosphere.

Command and Control

An alternative to **Emissions Trading**. The traditional method of environmental regulation; the Government specifies the exact emission limit for each facility, and prosecutes the facility owner if the facility exceeds the specified emission limit.