

Basics of ETS and EU ETS Part 1: Scope and Coverage



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Emissions profiles

Background Information

OVERALL GHG EMISSIONS (EXCL. LULUCF) **496.1 MtCO₂e (2016)**

OVERALL GHG EMISSIONS BY SECTOR



Energy (excluding transport) 279.2 (56%)
Transport 81.8 (17%)
Industry 62.4 (13%)
Agriculture 56.5 (11%)
Waste 16.2 (3%)

Source: ICAP 2019

Background Information

OVERALL GHG EMISSIONS (EXCL. LULUCF) **4,353.0 MtCO₂e (2016)**

OVERALL GHG EMISSIONS BY SECTOR

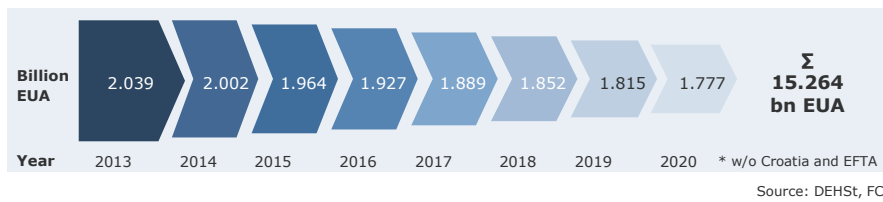


Energy 3,391.0 (78%)
Industrial Processes 386.0 (9%)
Agriculture 436.0 (10%)
Waste 140.0 (3%)

Source: ICAP Status Report 2019

EU Cap 2013-2020

_ Stationary installations: EU decisions from 22th of October 2010
(2010/634/EU)*



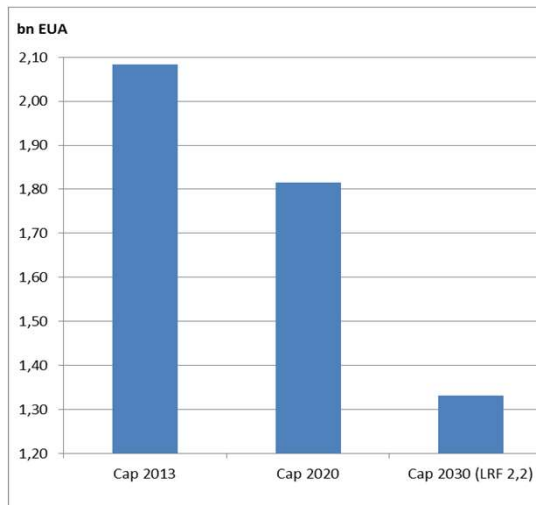
The EU ETS cap over time

_ Annual cap

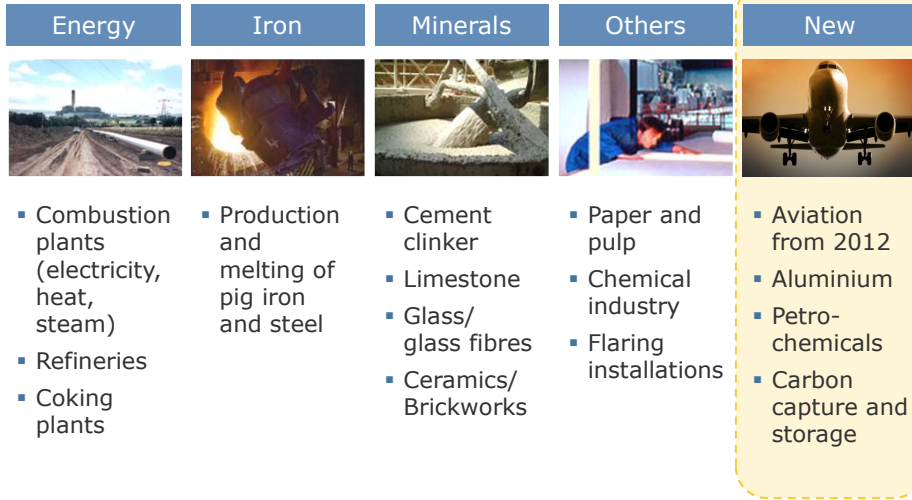
- 2013: 2.08 bn EUA
- 2020: 1.82 bn EUA
- 2030: **1.33 bn EUA**

_ Total volume

- 2013-2020: 15.6 bn EUA (LRF 1.74%)
- 2021-2030: **15.5 bn EUA** (LRF 2.2%)



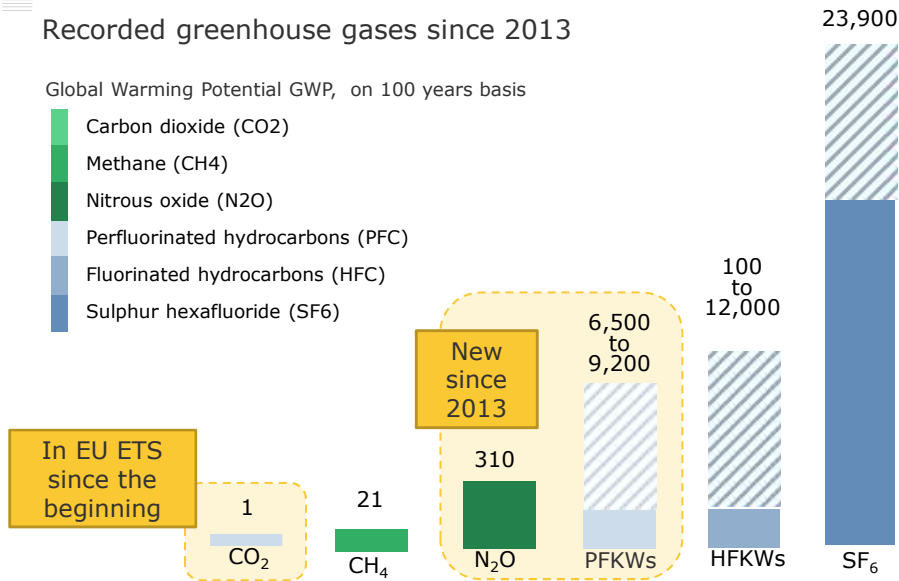
Sector activities under the EU ETS from 2013 onwards



Recorded greenhouse gases since 2013

Global Warming Potential GWP, on 100 years basis

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorinated hydrocarbons (PFC)
- Fluorinated hydrocarbons (HFC)
- Sulphur hexafluoride (SF₆)



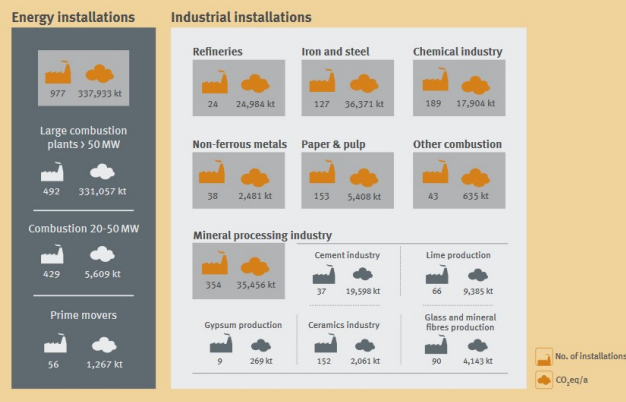
Inclusion criteria defined in the EU ETS

= EU-ETS applies a clear installation based approach incorporating specific capacity thresholds with regard to the total rated thermal heat input or daily production, depending on the activities performed

= **An „ installation“** is a stationary technical unit where one or more covered activities are carried out and any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution
(Directive 2003/87/EC Art. 3 (e))

EU-ETS – ETS covered installations (Germany)

Which Sectors Participate in Emissions Trading?



Source: DEHSt

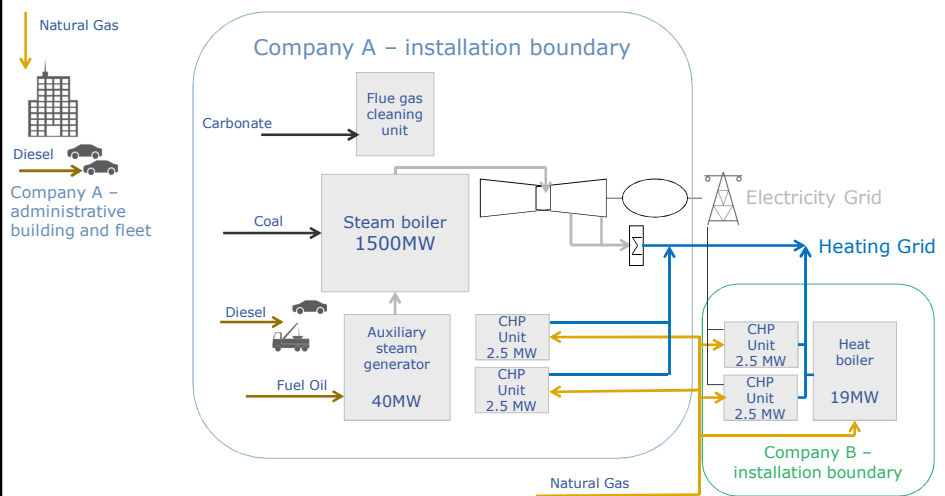
Definitions: Emission source and source stream in EU ETS

= **“Emission source”** means a separately identifiable part of an installation or a process within an installation, from which relevant greenhouse gases are emitted or, for aviation activities, an individual aircraft (MRR Art. 3 (5))

= **“Source stream”** means any of the following:

- (a) a specific fuel type, raw material or product giving rise to emissions of relevant greenhouse gases at one or more emission sources as a result of its consumption or production;
- (b) a specific fuel type, raw material or product containing carbon and included in the calculation of greenhouse gas emissions using a mass balance methodology (MRR Art. 3 (4))

Coverage exercise: installation boundaries



Coverage exercise: solutions sheet

(1) What are the emission sources and relevant source streams of Company A?

= Emission sources:

- Steam boiler
- Auxiliary steam generator
- Flue gas cleaning unit
- 2 CHP units
- Several vehicles
- Boiler for heating purposes in administrative building

= Source streams:

- Coal
- Fuel Oil
- Carbonate
- Natural gas (CHP units)
- Natural gas (administrative buildings)
- Diesel (vehicles)

(2) Please identify which emission sources of Company A have to be reported under the rules of the European Emissions Trading Scheme (EU-ETS).

- = Steam boiler
- = Auxiliary steam generator
- = Flue gas cleaning unit
- = 2 CHP units

Coverage exercise: solutions sheet

(3) What are the emission sources and relevant source streams of Company B?

= Emission sources:

- Heat boiler
- 2 CHP units

= Source streams:

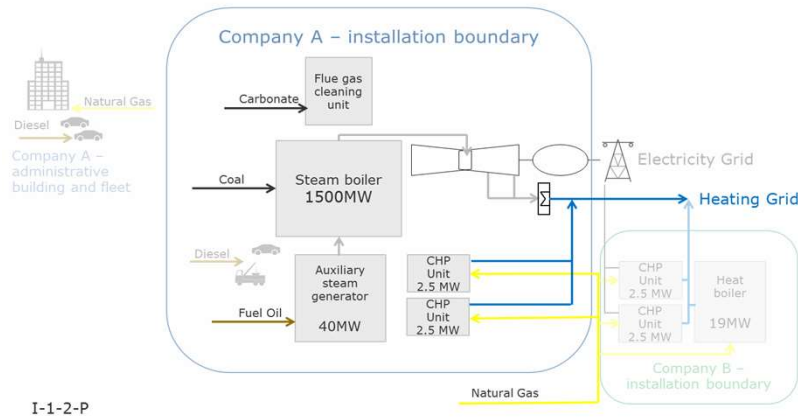
- Natural gas (CHP units)

(4) Please identify which emission sources of Company B have to be reported under the rules of the European Emissions Trading Scheme (EU-ETS).

- = None of the emission sources have to be reported under the rules of the EU-ETS. The CHP units are not considered for the determination of the 20 MW threshold; the boiler alone is below 20 MW. Therefore, the installation is below the relevant threshold.

Coverage exercise: Solution - relevant installation and its source streams (emissions)

Hard Coal Plant



Activities and GHGs included in the EU ETS - Overview

2005-2007	2008-2012	2013-2020
Activities included		
<ul style="list-style-type: none"> • Combustion >20MW • Industrial activities, e.g. refineries; iron and steel plants; cement clinker; glass; lime; bricks; ceramics; pulp, paper and board 		
	<ul style="list-style-type: none"> • Further industrial activities, e.g. steam cracker • Aviation (from 2012) 	<ul style="list-style-type: none"> • Further industrial activities, e.g. organic chemicals, foundries
GHGs included		
CO ₂		
		<ul style="list-style-type: none"> + N₂O (Nitric, adipic and glyoxylic acid) + PFC (Aluminium)
Critical issues for operators		
<ul style="list-style-type: none"> • Definition of installation boundaries • Cumulation of units 		

Are you now familiar with the following terms/concepts?

- ETS covered activities
- Installation, installation boundaries
- Stationary emissions
- Direct/indirect emissions
- Emission sources
- Source stream
- Capacity thresholds
- Accumulation rule

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