



# **Estimating emission permits in Italy**

**Emanuela Recchini**



**1**

Introductory remarks

**2**

The European Union Emission Trading System: an overview

**3**

The accounting treatment of emission permits under EU ETS in Italy

**4**

Concluding remarks

## Policy context

- ✓ The EU 2030 Climate and Energy Framework, adopted in 2014, is an example in the European context of the strategies and policies aiming at reducing the emissions of greenhouse gases generated by the human activities.

Target of at least 40% cuts in greenhouse gas emissions from 1990 levels by 2030 (ambitious emission reductions targets were already in place before 2014)



- ✓ The Paris Agreement, reached by Parties to the UNFCCC at COP 21 in Paris in 2015 to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future.

## Policy instruments

Among the available instruments to achieve the target, our focus will be emission trading.

## Accounting framework

Emission trading, a new emerging issue linked to the debate on climate change, has implications that involve both satellite accounts on the environment and core national accounts.

## 2 The European Union Emission Trading System (EU ETS)

### Overview

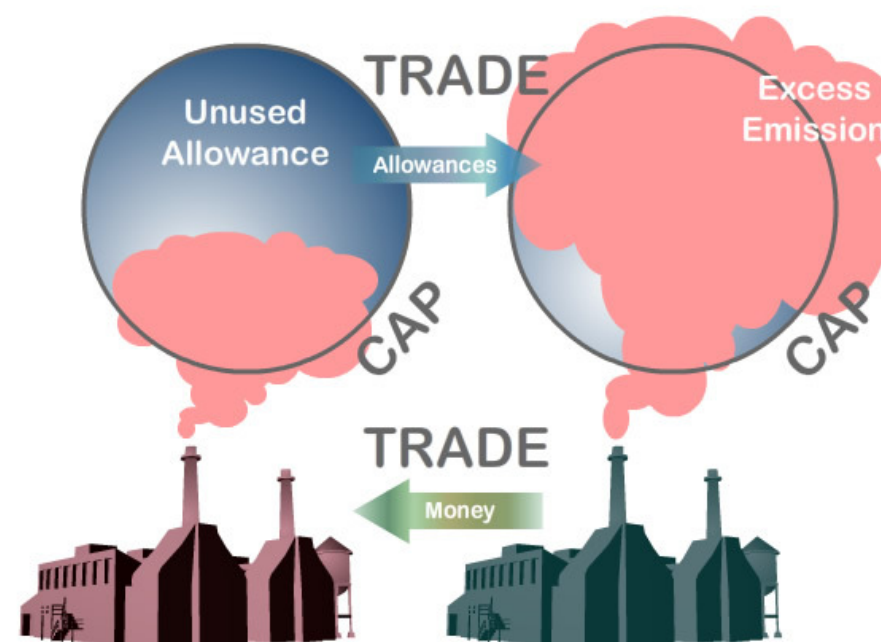
In the EU, **emissions trading systems** have been identified as a **cost effective** alternative to traditional policy instruments such as “command and control” regulations to cut greenhouse gas emissions.

With a view to reducing CO<sub>2</sub> emissions, the **EU ETS** was introduced in 2005. The system is based on the “**cap and trade**” principle. Examples of sectors covered: power stations, oil refineries, coke ovens, iron and steel plants and factories making cement, glass, lime, bricks, ceramics, pulp, paper and board, petrochemicals, aviation, **other combustion**.

Within this Europe-wide **cap**, companies receive or buy emission permits (“allowances”) which they can **trade** with one another as needed.

Each **allowance** gives the holder the right to emit one tonne of CO<sub>2</sub>.

At the beginning of each year (April in the EU) a company must surrender enough allowances to cover all the emissions released in the year before.



## 2 The European Union Emission Trading System (EU ETS)

### *Allocation of allowances*

Until 2012, allowances in the EU ETS were allocated by governments **for free** (according to *grandfathering* - based on historical emissions - or *benchmarking* - based on historical output and on benchmark emission coefficients).

Starting from 2013, **auctioning** has become the main method of allocating allowances.

In Italy, the **GSE (Gestore Servizi Energetici)** is in charge of auctioning Italian emission allowances on the European Common Auction Platform. Proceeds from the auctions are transferred from GSE to the Treasury.

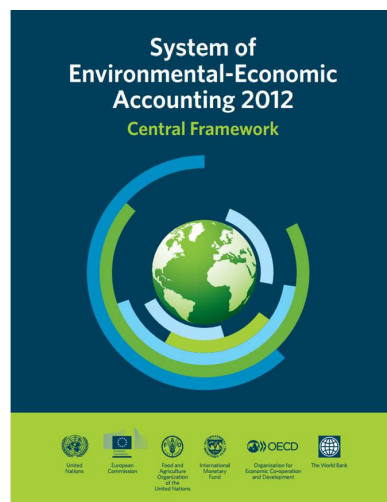


### 3 The accounting treatment of emission permits under EU ETS in Italy

Environmental-economic accounts are **satellites to the core accounts of SNA**

#### At the global level

##### System of Environmental-Economic Accounting 2012 – Central Framework (SEEA-CF)



- ❖ Adopted by the United Nations Statistical Commission as an **international statistical standard on a par with SNA**
- ❖ Describes the interrelationships between economy and environment.
- ❖ Is based on a system approach and follows **same principles, definitions and classifications of SNA**

#### At the EU level

The Commission expressed its view in favor of **integrated environmental economic satellite accounts** already in 1994 and reaffirmed it in 2009.



##### Regulation on European environmental economic accounts

- ❖ Approved in **2011** for three modules:
  - air emissions accounts
  - **environmentally related taxes by economic activity**
  - economy-wide material flow accounts
- ❖ Extended in **2014** to three additional accounts:
  - environmental protection expenditure accounts
  - environmental goods and services sector accounts
  - physical energy flow accounts.



### 3 The accounting treatment of emission permits under EU ETS in Italy

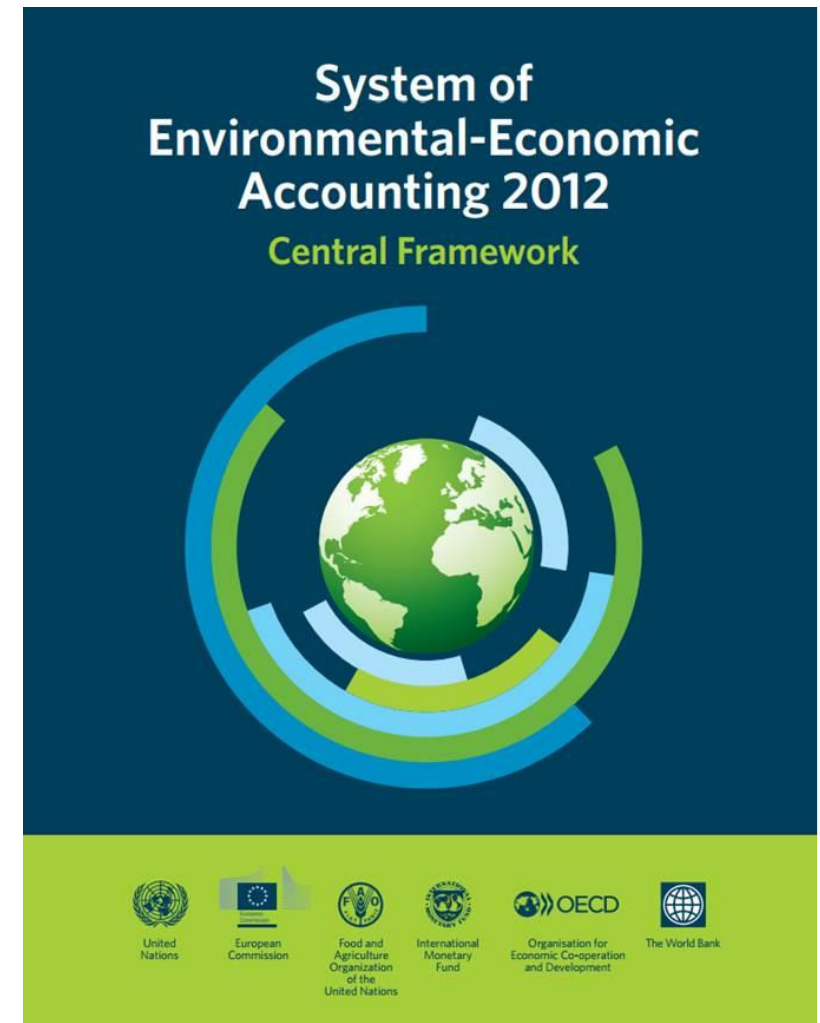
#### *Emission permits in the SEEA-CF*

A common and important mechanism for managing the interaction between the economy and the environment is the **use of permits** to use the environment as a sink for emissions.

The **SEEA-CF** has taken on the updated research and discussion in the 2008 SNA in the areas of treatment of **tradable emission permits**.

§ 4.186 (a): *The payments for emission permits, issued by governments under cap-and-trade schemes, should be recorded at the time the emissions occur as taxes on production on an **accrual basis** (see MGDD 2016 ed. VI.5.2 § 7).*

§ 4.187: *The taxes paid for tradable emissions permits are treated as **environmental taxes** and categorized as **energy taxes** when the permits relate to emissions of carbon dioxide. Where possible, these taxes should be separately identified within energy taxes. When the tradable permits relate to other types of emissions, the taxes should be categorized as pollution taxes.*



### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *Environmental taxes: main concepts and definitions*



An **environmental tax** is “a tax whose tax base is a physical unit (or a proxy of a physical unit) of something that has a **proven, specific, negative impact** on the environment, and which is identified in **ESA 2010** as a tax”

Eurostat (2013), *Environmental taxes – A statistical guide*.

Only payments that are identified as taxes in the National Accounts can be environmental taxes.

The **tax base** is of primary importance to determine the inclusion or not of a tax in the set of environmental taxes, while its purpose as stated by the tax legislator is not relevant.

Environmental taxes include both instruments with an environmental motivation and instruments with a different stated purpose.



### 3 The accounting treatment of emission permits under EU ETS in Italy

According to the Eurostat Statistical guide concerning environmental taxes, the **list of environmental tax bases** includes:

#### GREENHOUSE GASES

- carbon content of fuels
- emissions of greenhouse gases (including proceeds from **emission permits** recorded as taxes in the national accounts).

**Payments for auctioned allowances** that in the core national accounts are registered as **taxes on production** are also considered as **environmentally related taxes** within integrated environmental and economic accounting.



### 3 The accounting treatment of emission permits under EU ETS in Italy

The introduction of auctioning - with the purchase of allowances from a government body - has major implications for the accounting treatment of the relevant transactions within **national accounts**.

How the payments for emission permits issued by governments under cap and trade system are dealt with in national accounts?



### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *The treatment of payments for emission permits issued by governments (1)*

Specific methodological work, concerning the **statistical recording** of the main transactions occurring under the EU ETS, has been developed within official statistics at the international level:

- ✓ discussions at UN, Eurostat, IMF, OECD and World Bank;
- ✓ Manual on Government Deficit and Debt (MGDD), providing guidance for the registration of auctions revenues in the national accounts (chapter VI.5 “Emission trading allowances” in the 2016 edition).



### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *The treatment of payments for emission permits issued by governments (2)*

When the Government assigns the emission permits by auction to firms, the sale and purchase should be recorded in the accounts of the two units involved (General Government and firm).

The main issues for the recording in the core system of national accounts are:

- ❖ as concerns the **General Government**, the registration in the GG Accounts of the amount collected at auction, as well as the time of recording;
- ❖ as concerns the holder of the allowances acquired (**the firm**), the registration of the same value in its asset account; this is not dealt with in the present work (part of the research agenda).





### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *The treatment of payments for emission permits issued by governments (3)*

##### *Preliminary remark*

According to ESA2010 (§ 1.101), flows shall be recorded on an accrual basis; that is, when economic value is created, transformed or extinguished, or when claims and obligations arise, are transformed or are cancelled (**accrual principle**).

Applying the accrual principle to the GG's amounts collected at auction:

- ✓ **in theory**, the time of recording of the revenue arising from emission permits should be when the emissions take place;
- ✓ due to practical difficulties, however, a **simplification** is worldwide agreed, according to which the emissions are assumed to be generated when the allowances are surrendered, i.e. at the beginning of the following year (in April in the EU).

European system  
of accounts

ESA 2010



### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *The treatment of payments for emission permits issued by governments (4)*

The MGDD recommends that **payments for emission permits** should be valued at their market price and recorded

- ❖ as **financial assets** of the permit holder, once the permits are acquired
- ❖ as **taxes on production in the GG Accounts** when the permits are used (surrendered).

ISSN 2315-0815

**eurostat**  
Manuals and guidelines

**Manual on Government Deficit and Debt**  
Implementation of ESA 2010

2016 edition

**eurostat** 



### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *The accounting of the tax revenue in Italy*

The Italian National Institute of Statistics (Istat) is responsible for the accounting of payments for emission permits in Italy.



Istat, following the MGDD recommendations, records payments received by government for the allowances, through auctions in Italy, as **other taxes on production** in the GG accounts, **in the year of surrender of the allowances**.

The **tax revenue** is calculated as follows:

**N° of auctioned allowances surrendered x Associated average auction price of stock of allowances**

### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *The allocation of the tax revenue by economic activity in Italy (1)*

The overall amount of the tax revenue is allocated to paying economic activities.

**How?** Through the breakdown by NACE of the auctioned allowances surrendered.

**Sources:** European Environment Agency (**EEA**) and the Italian National Institute for Environmental Protection and Research (**ISPRA**).



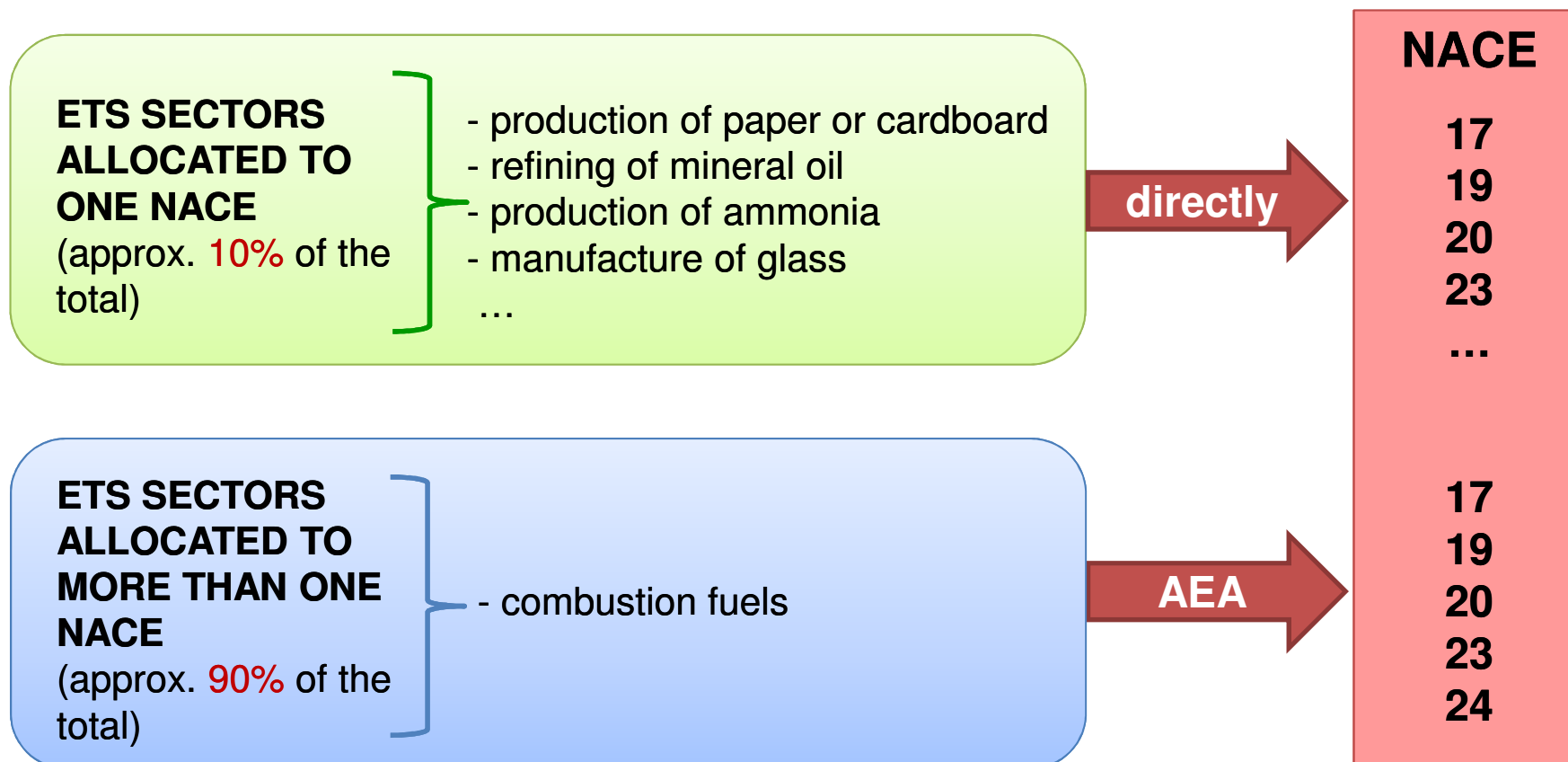
European Union Transaction Log (EUTL) run by the European Commission: it provides aggregated data by country, by main activity type and by year on the verified emissions, allowances and surrendered units of the stationary installations reporting under the EU ETS, as well as aircraft operators.



Register of emissions and emission allowances set up in Italy for the purposes of ETS: it contains data on the Italian territory, collected locally by the Regional Focal Points, to be transmitted to the EEA.

### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *The allocation of the tax revenue by economic activity in Italy (2)*



In doubtful cases, such as the “combustion” category, the allocation is made on the basis of the greenhouse gas emissions from combustion processes by NACE (source: [Istat, Air Emission Accounts](#)).

### 3 The accounting treatment of emission permits under EU ETS in Italy

#### *Main categories of environmental taxes*

CATEGORY	DESCRIPTION
<b>ENERGY TAXES</b> (including fuel for transport)	<p>Taxes on energy products used for both transport and combustion processes (stationary purposes). The most important energy products for transport purposes are petrol and diesel. Energy products for stationary use include fuel oils, natural gas, coal and electricity.</p> <p><i>CO<sub>2</sub> taxes are included under this category.</i></p>
<b>TRANSPORT TAXES</b> (excluding fuel for transport)	<p>Taxes relating to the ownership, the registration and use of motor vehicles, including taxes on other transport equipment (e.g. aircrafts), and related transport services (e.g. duties on charter or scheduled flights), when these taxes are deemed to comply with the general definition of environmental taxes.</p> <p>Taxes on petrol, diesel and other transport fuels are included under energy taxes.</p>
<b>POLLUTION TAXES</b>	<p>Taxes on pollutants emissions (either measured or estimated) in the air and water, the management of solid waste and taxes for the abatement of noise and vibrations.</p> <p><i>An exception is the CO<sub>2</sub> taxes, included under energy taxes.</i></p>
<b>RESOURCE TAXES</b>	<p>Taxes linked to the extraction or use of a natural resource (e.g. licenses paid for hunting, fishing and similar activities). Taxes on the extraction of oil or gas are no longer classified as resource taxes, in line with the statistical guideline which excludes all taxes on the extraction of oil and gas from the definition of environmental taxes.</p>

### 3 The accounting treatment of emission permits under EU ETS in Italy

Paying units by NACE	NACE description	Share of total tax paid
17	Manufacture of paper and paper products	3,4%
19	Manufacture of coke, refined petroleum products	11,1%
20	Manufacture of chemicals and chemical products	5,5
23	Manufacture of other non-metallic mineral products	8,6%
24	Manufacture of basic metals	7,6%
25	Manufacture of fabricated metal products, except machinery and equipment	0,02%
35	Electricity, gas, steam and air conditioning supply	60,7%
51	Air transport	3,0%
<b>Total</b>		<b>100%</b>

Source: Istat, Environmental Accounts.

The EU ETS is a policy instrument designed to achieve the target of cuts in greenhouse gas emissions.

The main transactions occurring under the EU ETS are **taxes on production** within national accounts and **environmentally related taxes** within environmental accounts.

Further issues concerning the recording of emission permits are in the **SNA research agenda**.







**Thank you for your attention!**

[recchini@istat.it](mailto:recchini@istat.it)