An Integrated Approach to Environmental Regulation and Inspection of Industrial Sites in the European Union

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Overview

Introduction

The EU Environmental Approval System

The use and development of Best Available Techniques (BAT)

Environmental Inspection of industrial sites

The development in Europe

Introduction – The EU at a Glance

28 Member States

Total Population: 507 Millions

Total Area: 4,3 Mio Km^2

~ 32.000 large industrial sites and
~ 18.000 large animal farms covered by
IED / IPPC licensing system

~ 53.000 sites covered by VOC directive, implemented in the IE Directive.

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The EU Environmental Approval System

What is meant by: "Integrated Permitting"

Growing evidence shows that the traditional division of environmental regulations into distinct groups addressing pollution of water, air and land separately limits the effectiveness of environmental policies and fails to take full advantage of technological innovations. (Source: OECD 1999)

The EU Environmental Approval System

What is meant by: "Integrated Permitting"

Integrated Permitting is when:
pollution of water, air , land, noise and prevention of environmental accidents

is addresses in the **one and same** permit

in regard to each industrial site.

Permits shall be based on Best Available Techniques.

The EU Environmental Approval System

Historical:

First National Integrated Environmental Permitting System

Denmark: 1974

France: 1976

United Kingdom: 1990

Netherlands: 1993

Finland: 1994

The EU Environmental Approval System

1996:

Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control (IPPC)

(To be implemented 1999 by Member States)

2008:

DIRECTIVE 2008/1/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 January 2008 concerning integrated pollution prevention and control (IPPC) (Codified version)

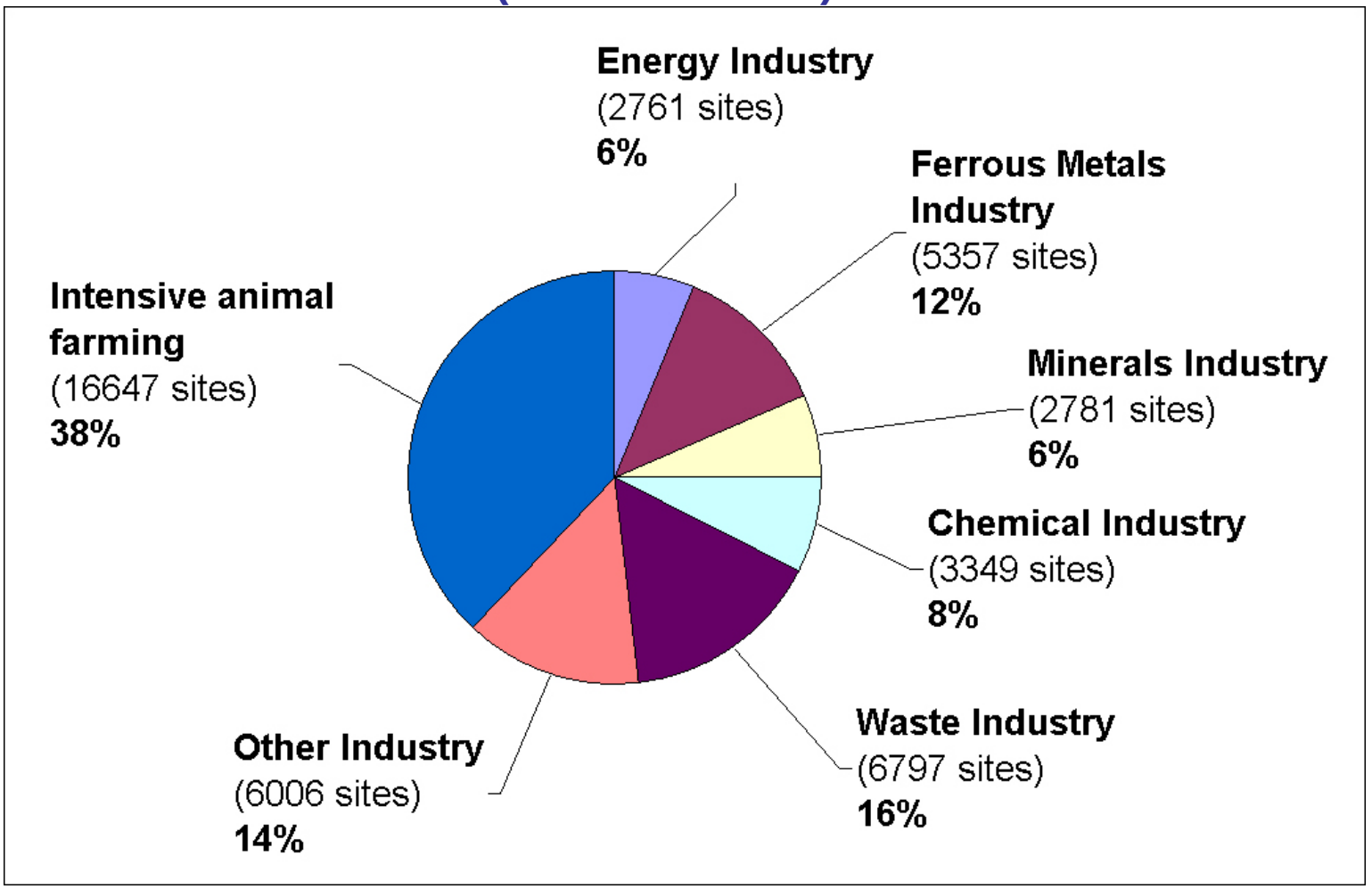
2010:

DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (IED)

(To be implemented Jan. 2013 by Member States)

Which Industries need an IED permit and how many sites in the EU

(Statistics: 2008)



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The EU Environmental Approval System

References:

http://iris.eionet.europa.eu/dqt/

The EU Environmental Approval System

New requirements following the IE Directive (in outline only)

Binding BAT Conclusions - following review of BREF notes - to be implemented by the relevant industry in max. 4 years and permits shall be reviewed by the authority

Baseline Report with information on the state of soil and groundwater contamination by relevant hazardous substances before starting operation
(Where the activity involves the use, production or release of relevant hazardous substances)

Upon definitive cessation of the activities, the operator shall assess the state of soil and groundwater and if necessary clean up to the level predefined in the Baseline Report.

Inspection by authority shall be done with a frequency of 1 – 3 years based on a risk-based approach

General Inspection Plans and all site related Inspection Reports shall be made **public** available

And some special provisions and more strict emission level values regarding large combustion plants in order to reduce air pollution.

The Process of getting an IED permit

Application from Industry – Inclusive Baseline report on existing pollution of the soil and groundwater (for industry producing or handling hazardous chemicals)

Public Notification

Assessment by authority

Draft permit – send to applicant for remarks

Final permit by authority

Public Notification of granted permit

4 weeks of access to complain

If complaints: > National Board makes final decision

The specific content of an IED permit

- Company name, address, type of industri etc.
- Location of the industrial site
- Description of the installation
- The decision and legal framework
- Conditions and terms for the permit
- Assessment of the installation's environmental impact on the surrounding
- Assessment of the emissions
- Application of Best Available Techniques
- Reasons for the given permit and the set conditions
- Other legal requirements
- How to complain regarding the permit

The specific content of an IED permit

Conditions regarding:

- **Management**
  General management
  Energy efficiency
  Efficient use of raw materials
  Avoidance, recovery and disposal of wastes produced by activities
  Demands regarding closure of the installation

- **Operations**
  Permitted activities
  The site
  Operating techniques
  Storage and handling of chemicals and waste
  Prevention of pollution of soil and ground water

The specific content of an IED permit

Conditions regarding:

- **Emissions**
  Emissions to Air (limits for emission and calculated immission / stack highs etc.)
  Emission to water (effluent limit to public wastewater treatment plant or direct discharge to rivers or the sea)
  Emission to land/soil
  Odour
  Noise and vibration

- **Sampling of emissions**
  Specific locations, source, parameters, reference period, frequency, standard to be used

- **Self monitoring**
- **Reporting to the authority**

The use and development of Best Available Techniques (BAT)

What is meant by: “BAT”

‘Best Available Techniques’ means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole:. (Source: IE Directive)

The use and development of Best Available Techniques (BAT)

What is meant by: “BAT”

‘Techniques’ includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

(Source: IE Directive)

The use and development of Best Available Techniques (BAT)

What is meant by: “BAT”

‘Available techniques’ means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator.
(Source: IE Directive)

The use and development of Best Available Techniques (BAT)

What is meant by: “BREF”

‘BAT reference document’(BREF) means a document, resulting from the exchange of information organised pursuant to Article 13, drawn up for defined activities and describing, in particular, applied techniques, present emissions and consumption levels, techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques, giving special consideration to the criteria listed in Annex III in the IE Directive

The use and development of Best Available Techniques (BAT)

What is meant by: “BAT conclusions”

‘BAT conclusions’ means a document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures.

(Source: IE Directive)

The use and development of Best Available Techniques (BAT)

Existing BREF

and BATC

(BAT Conclusions)

http://eippcb.jrc.ec.europa.eu/reference/

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The use and development of Best Available Techniques (BAT)

Best Available Techniques Reference Document (BREFs)	Adopted Document
Ceramic Manufacturing Industry	BREF (08.2007)
Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector	BREF (02.2003)
Emissions from Storage	BREF (07.2006)
Energy Efficiency	BREF (02.2009)
Ferrous Metals Processing Industry	BREF (12.2001)
Food, Drink and Milk Industries	BREF (08.2006)
Industrial Cooling Systems	BREF (12.2001)
Intensive Rearing of Poultry and Pigs	BREF (07.2003)
Iron and Steel Production	BATC (03.2012) BREF (03.2012)

The use and development of Best Available Techniques (BAT)

Best Available Techniques Reference Document (BREFs)	Adopted Document
Large Combustion Plants	BREF (07.2006)
Large Volume Inorganic Chemicals – Ammonia, Acids and Fertilisers	BREF (08.2007)
Large Volume Inorganic Chemicals – Solids and Others Industry	BREF (08.2007)
Large Volume Organic Chemical Industry	BREF (02.2003)
Management of Tailings and Waste-rock in Mining Activities	BREF (01.2009)
Manufacture of Glass	BATC (03.2012) BREF (03.2012)
Manufacture of Organic Fine Chemicals	BREF (08.2006)
Non-ferrous Metals Industries	BREF (12.2001)
Production of Cement, Lime and Magnesium Oxide	BATC (04.2013) BREF (04.2013)

The use and development of Best Available Techniques (BAT)

Best Available Techniques Reference Document (BREFs)	Adopted Document
Production of Chlor-alkali	BATC (12.2013) BREF (12.2001**)
Production of Polymers	BREF (08.2007)
Pulp and Paper Industry	BREF (12.2001)
Production of Speciality Inorganic Chemicals	BREF (08.2007)
Refining of Mineral Oil and Gas	BREF (02.2003)
Slaughterhouses and Animals By-products Industries	BREF (05.2005)
Smitheries and Foundries Industry	BREF (05.2005)
Surface Treatment of Metals and Plastics	BREF (08.2006)
Surface Treatment Using Organic Solvents	BREF (08.2007)

The use and development of Best Available Techniques (BAT)

Best Available Techniques Reference Document (BREFs)	Adopted Document
Tanning of Hides and Skins	BATC (02.2013) BREF (02.2013)
Textiles Industry	BREF (07.2003)
Waste Incineration	BREF (08.2006)
Waste Treatment	BREF (08.2006)

Reference Document (REFs)	Adopted Document
Economics and Cross-media Effects	REF (07.2006)
Monitoring of emissions from IED-installations	REF (07.2003)

EU BREF notes

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The structure of a BREF note

- Scope
- General Information
- Applied Processes and Techniques
- Present Consumption and Emission Levels
- Techniques to consider in the determination of BAT
- BAT Conclusions
- Emerging Techniques
- Concluding Remarks and Recommendations for Future Work

The structure of BAT Conclusions Example – Iron and Steel

1. General BAT Conclusions

1.1 Environmental management systems
1.2 Energy management
1.3 Material management
1.4 Management of process residues such as by-products and waste
1.5 Diffuse dust emissions from materials storage, handling and transport of raw materials and (intermediate) products
1.6 Water and waste water management
1.7 Monitoring
1.8 Decommissioning
1.9 Noise

The structure of BAT Conclusions Example – Iron and Steel

2. BAT Conclusions For Sinter Plants
3. BAT Conclusions For Pelletisation Plants
4. BAT Conclusions For Coke Oven Plants
5. BAT Conclusions For Blast Furnaces
6. BAT Conclusions For Basic Oxygen Steelmaking And Casting
7. BAT Conclusions For Electric Arc Furnace Steelmaking And Casting

Environmental Inspection

Frequency: Inspection each 1 – 3 year
Systematic Environmental Risk-Based approach taking at least into account:

(a) the potential and actual impacts of the installations concerned on human health and the environment taking into account the levels and types of emissions, the sensitivity of the local environment and the risk of accidents;

(b) the record of compliance with permit conditions;

(c) the participation of the operator in the Union eco-management and audit scheme (EMAS)

Environmental Inspection

How the inspection is done

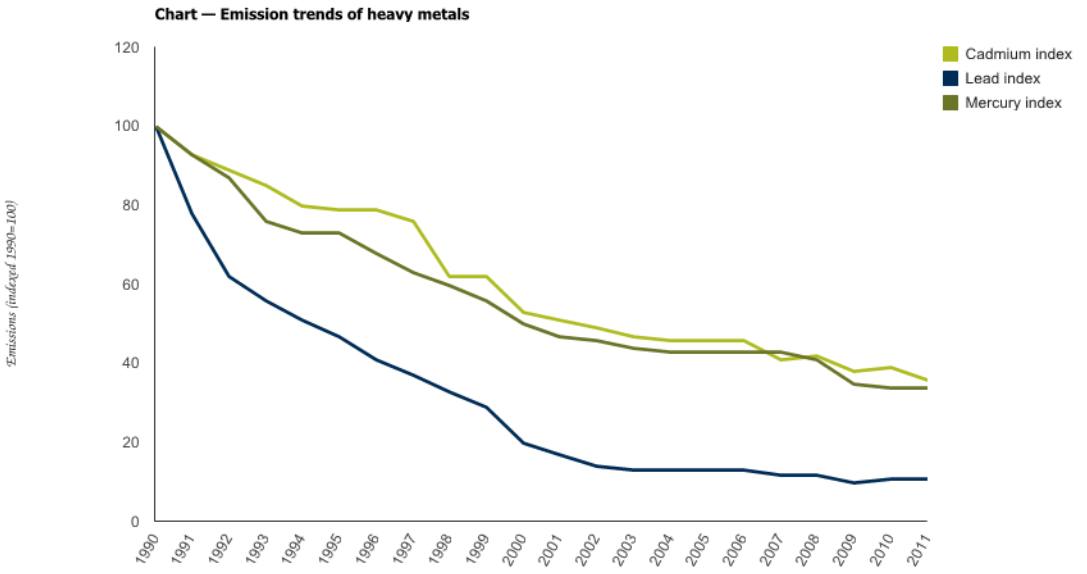
Enforcement of Environmental Law

Dialogue with the Industry

The development in Europe (outline of trends)

Fig. 1: Emission trends of heavy metals

Chart | Table



Data for Iceland, Luxembourg and Turkey was not reported.

Data sources:

- National emissions reported to the Convention on Long-range Transboundary Air Pollution (LRTAP Convention) provided by **European Environment Agency (EEA)**

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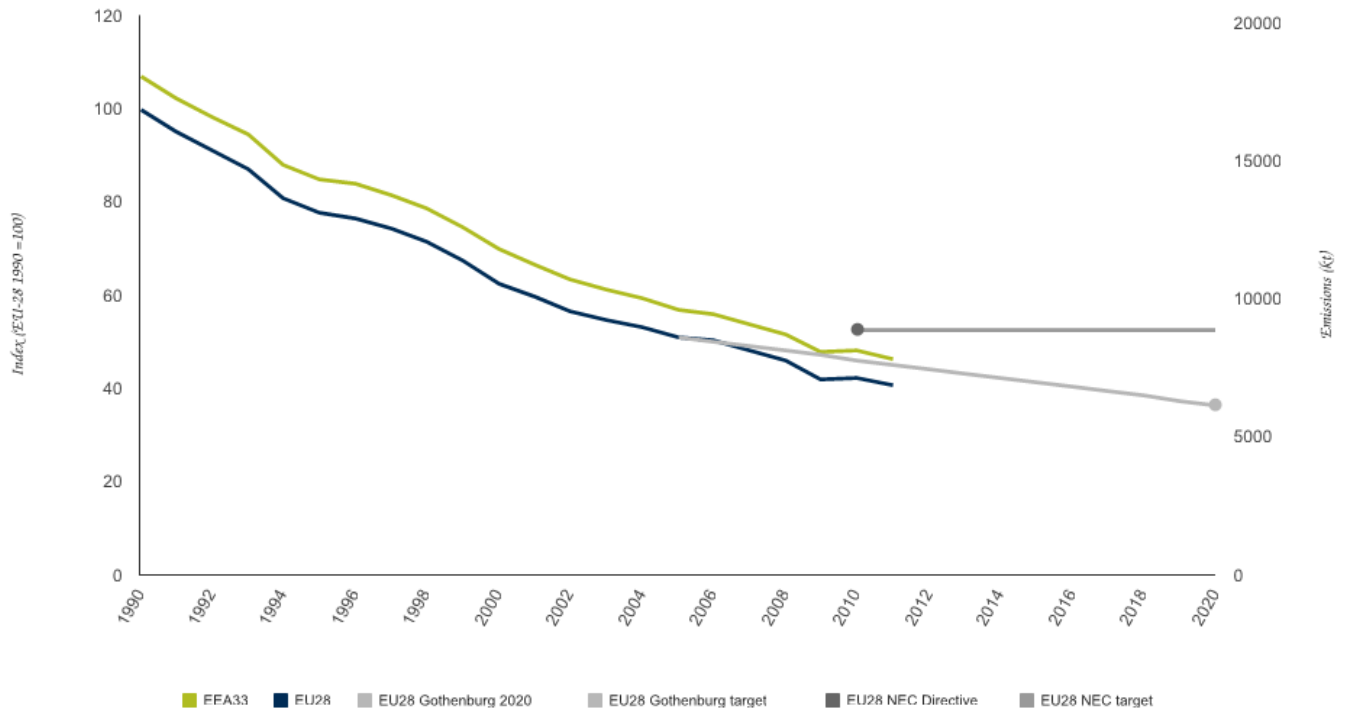
The development in Europe (outline of trends)

Fig. 1: Emission trends of non-methane volatile organic compounds

Chart | Table

Chart — Emission trends of non-methane volatile organic compounds



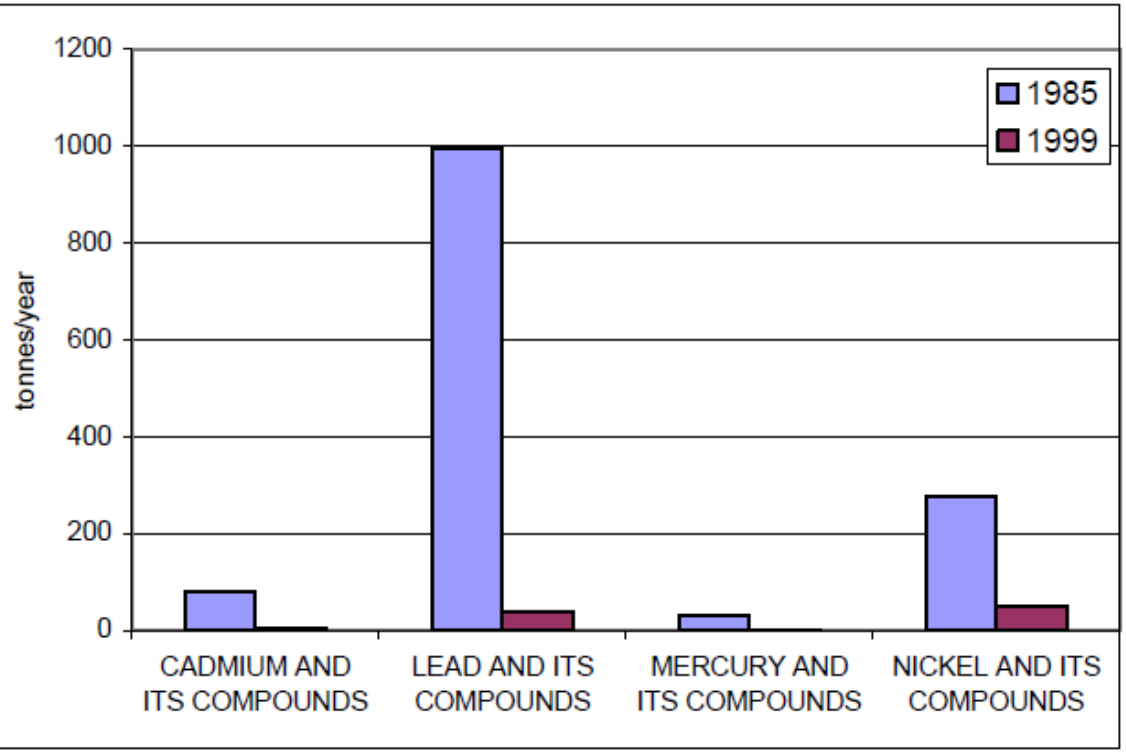
Data sources:

- National emissions reported to the Convention on Long-range Transboundary Air Pollution (LRTAP Convention) provided by **European Environment Agency (EEA)**

The development in Europe (outline of trends)

Emissions to water of hazardous substances from industry

Figure 1: Changes in emissions of heavy metals (t/year) from industrial sources in selected European countries between 1985 and 1999.



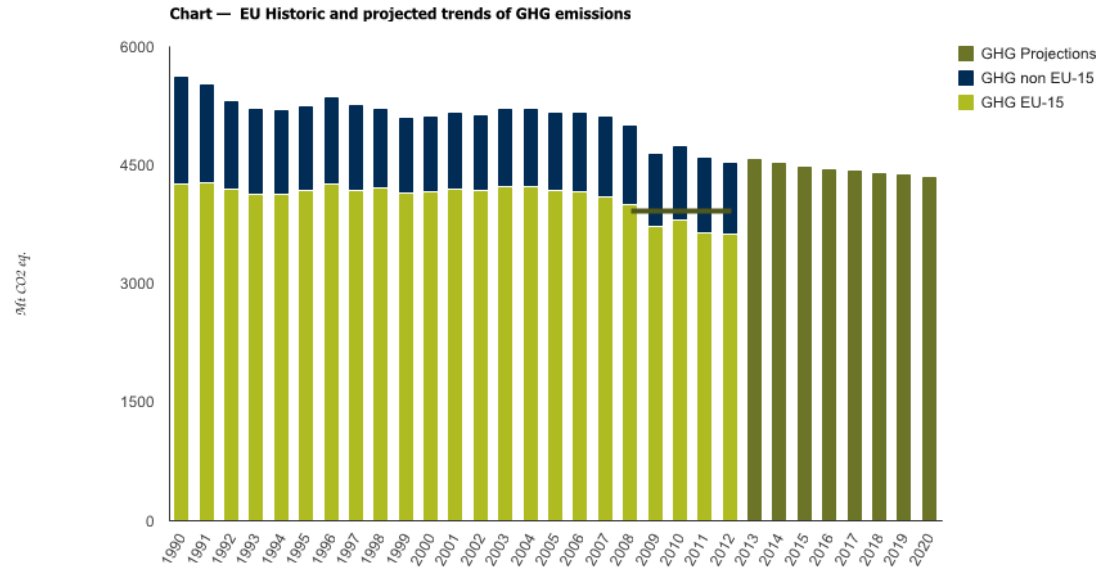
Notes: Only countries with data from all periods included: Switzerland, Germany, Denmark, Netherlands, Norway, Sweden.

Sources: EEA – ETC/WTR based on Member States data reported to the 5th North Sea Conference.

The development in Europe (outline of trends)

Fig. 1: EU Historic and projected trends of GHG emissions

Chart | Table



Note:
GHG totals do not include emissions from Land Use, Land-Use Change and Forestry (LULUCF) and international bunker fuels.
The horizontal line represents the common EU-15 absolute target for the CP1.

Data sources:

- National emissions reported to the UNFCCC and to the EU Greenhouse Gas Monitoring Mechanism provided by **Directorate-General for Climate Action (DG-CLIMA)**

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Thank you for your attention.

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