

# EU-ETS to decarbonize Europe

## History & Challenges



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# FOREWORD

In the ever-evolving landscape of environmental policy and global climate change, the European Union Emissions Trading System (EU-ETS) is a critical initiative that aims to reduce greenhouse gas emissions in Europe. It stands as a pivotal initiative that has gathered international attention. Since its inception, the EU-ETS has been at the forefront of efforts to reduce greenhouse gas emissions, setting a precedent for market-based approaches to environmental stewardship.

The evolution recently adopted to take into account the new European Package fit for 55 will strongly reinforce the importance of the EU-ETS for the years to come and will strengthen the level-playing field between players and industrial goods produced inside and outside the EU internal market. Notably, the CBAM will be critical to protect European production against carbon intensive goods produced on unregulated markets. This comprehensive study delves into the intricate journey of this pioneering emissions trading system. From its early conceptualization to its current role as a cornerstone of the EU's climate policy framework, this research provides a nuanced understanding of the system's evolution.

I want to express my deepest gratitude to Mr. Frédéric Branger and Mr. Jeremie Benhamou (DGEC), Dr. Peter Botschek, Mr. Nicola Rega and Mr. Justin Van Schepen (CEFIC), as well as Mr. Sam Van Den Plas and Ms. Lidia Tamellini (Carbon Market Watch) for the time they generously devoted to our recent interviews. Their insights and expertise have proven to be of crucial importance in shaping the depth and quality of our study on EU-ETS.

I extend my sincere appreciation to Ms. Coralie Jeannot from Citepa for her meticulous and thorough technical review of the study. Her inputs have been valuable in strengthening the accuracy and reliability of our findings.

I hope this study will inspire continued dialogue, innovation, and collaboration in our collective pursuit of a sustainable and resilient future. We welcome all feedback and constructive discussion.

We are also eager to soon share our next study on this subject which will focus on the evolution that has been recently adopted by EU Member states and that will structure the EU-ETS market for years to come.

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## EXECUTIVE SUMMARY

The study explores the European Union Emissions Trading System (EU-ETS), a crucial mechanism for reducing greenhouse gas (GHG) emissions across Europe. This work focuses on presenting the EU-ETS, its functioning and its history. It is meant to be an introduction to the EU-ETS and an explanation of some of its recent evolutions.

The EU-ETS came into effect in 2005, covering only highly emissive installations from critical industries at first. The scope was gradually extended to include some other industries and aircraft operators. Since the start of Phase III (2013), it covers nearly half of all EU GHG emissions.

The mechanism plays a central role in Europe to reduce GHG emissions by promoting efficient and cost-effective measures. Evolving across phases, the EU-ETS expanded its scope, integrating 11,000 energy-intensive installations as well as intra-european flights. The system targets a 62% reduction of emissions by 2030, compared to 2005 level.

The Emission trading scheme functions as a "cap and trade" system. It is a market-based mechanism that sets a limit (cap) on the total amount of greenhouse gas emissions allowed and enables entities to trade emission allowances. Every year, concerned installations have to surrender the number of allowances balancing out their previous year's emissions<sup>1</sup>.

To prevent carbon leakage outside EU, free allowances were implemented since the beginning of the system. They are allocated based on benchmarks, with the most efficient installations receiving a higher level of allowances (up to 100%, depending on whether the sector is exposed to Carbon leakage or not) and the least efficient ones having to purchase a significant share of their allowances. Today, while

some sectors vulnerable to carbon leakage still receive free allowances, auctioning has become the default method to inject allowances within the EU-ETS. Companies can thus either acquire their allowances from auctions, through direct exchanges with other actors, or through free allowances if eligible.

The European Union Allowances (EUA) carbon prices have experienced notable fluctuations over the course of the ETS. After the changes brought to the EU-ETS Directive for Phase IV (2018) and the Covid-19 pandemic, prices rose significantly from around 10 €/tCO<sub>2</sub>e<sup>2</sup> in previous years to a peak of 100 €/tCO<sub>2</sub>e in February 2023. Most analysts forecast further price increase in the coming years.

The EU-ETS has faced initial challenges, notably the mitigation of a carbon leakage risk. The allocation of free allowances to sectors risking production relocation was introduced as a solution. This approach preserves the economic incentive for installations to reduce their emissions, while safeguarding industries' competitiveness and preventing negative economic and ecological impacts. However, this strategy and its regulatory implementation has revealed several limitations. The excess of allowances has caused an imbalance in the market, weakening emission reduction incentives. Measures have been taken to manage this surplus, such as back-loading auctions in 2014 and finally introducing a Market Stability Reserve (MSR) in 2019. These mechanisms influence the total allowances in circulation, contributing to a more stable market environment.

With the implementation of the EU "Fit for 55" package in 2021, a new directive of the EU-ETS was issued in May 2023, bringing several changes to the system. **The reform of the EU-ETS will be the subject of ACE Énergie's next study.**

<sup>1</sup> For one given year Y, the date of restitution (compliance) is currently on 30/04 the following year Y+1. It will be delayed at 30/09 as of 2024.

<sup>2</sup> The three greenhouse gases covered in the EU-ETS are: CO<sub>2</sub>, N<sub>2</sub>O and PFC.

## INTRODUCTION

The Kyoto Protocol, established in 1997, imposed binding greenhouse gas (GHG) reduction targets on 37 industrialized nations. It led to the necessity of developing policy instruments to meet these obligations. In 2000, the European Commission proposed the initial concepts for the European Union Emissions Trading System (EU-ETS) in a green paper. This paper served as the basis for extensive stakeholder consultations that were instrumental in shaping the EU-ETS during its early stages. The EU-ETS Directive was adopted in 2003, paving the way for the introduction of the EU-ETS in 2005.

The European Union Emissions Trading System is a “cap and trade” system designed to limit GHG emissions from installations and aircraft operators, which collectively contribute to approximately half of EU GHG emissions. **This system enables the trading of allowances to ensure that the total emissions from these entities remain within the set cap while allowing for the adoption of the most cost-effective measures to reduce emissions.**

Since its creation in 2005, the system has experienced various changes, with the implementation divided into distinct trading periods referred to as phases. The fourth phase of the EU-ETS, started in 2021 and will end in 2030. On 14 July 2021, the European Commission adopted the “Fit for 55” package, a set of policy proposals intended to revise and modernize EU regulations about climate, energy, and transportation. In particular, “Fit for 55” aims to reduce GHG emissions by at least 55% by 2030 compared to 1990.

The “Fit for 55” package implied a more ambitious EU-ETS. **In May 2023, the revised EU-ETS directive was issued, bringing several changes to the system:** extension to maritime transport, faster reduction of emissions allowances in the system and gradual phasing-out of free allowances for some sectors, implementation of the global carbon offsetting and reduction scheme for international aviation (CORSIA) through the EU-ETS, increase of funding for the modernization fund and the innovation fund, revision of the market stability reserve, new and separate emission trading system for buildings and road transport (ETS II), etc.

Interviews were conducted with EU-ETS stakeholders from the public and private sectors to prepare this study. We extend our thanks to the interviewees from the French Directorate General for Energy and Climate (DGEC), the European Commission’s Directorate-General for Climate Action, Carbon Market Watch, as well as European industry representatives: Chemical industry (CEFIC), Steel industry (EUROFER) and cement industry (CEMBUREAU) for their valuable insights on the EU-ETS.

The following study will focus on the history and functioning of the EU-ETS, as well as its early **challenges and implications**. A second study is to be published in the upcoming months and will adopt a **more prospective approach, exploring the recent evolutions of the EU-ETS and their implications for the future of industry emissions in Europe.**





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## ABOUT ACE ENERGIE

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Founded in 2019, ACE Energie operates in the fields of financing energy efficiency operations and climate transition consulting. With a firm belief in its ability to offer the industry a distinctive range of solutions, ACE Energie brings together a unique combination of expertise. This includes proficiency in transition financing mechanisms, comprehensive understanding of the energy market, and technical knowledge of industrial processes.

Through its consulting services, ACE Energie supports companies in making their energy transition a success. The teams support three main customer segments:

**Energy-intensive manufacturers**, through support for the key functions related to energy-climate issues. For energy sourcing, ACE Energie offers guidance in evaluating sourcing options such as market sourcing, power purchase agreements (PPA), local production, and alternative sources. ACE Energie also assists clients in managing market exposure and navigating the regulatory complexities of different markets. In terms of operations, ACE Energie promotes a culture of operational excellence in energy management. Lastly, ACE Energie works closely with teams responsible for defining decarbonization strategies, helping them identify economic opportunities and effectively address challenges.

**Investment funds**, to facilitate the allocation of capital towards projects with significant climate impact. To achieve this, ACE Energie conducts rigorous technical due diligence related to carbon and energy issues. They provide insights into complex regulatory frameworks and bring a forward-thinking perspective on emerging trends in energy products and services.

Furthermore, ACE Energie is committed to driving innovation in the realm of energy-climate issues. They assist **innovative companies** in reimagining their unique processes, exploring new product opportunities, and shaping their strategic vision.

The consulting team at ACE Energie is available, to discuss your specific challenges, to share insights gleaned from similar customer experiences, or to offer effective approaches to tackle your energy-climate challenges.







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