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EU ETS: LAST CALL BEFORE THE DOORS CLOSE ON THE NEGOTIATIONS FOR THE POST-2020 REFORM

Assessment of options to reform the EU ETS



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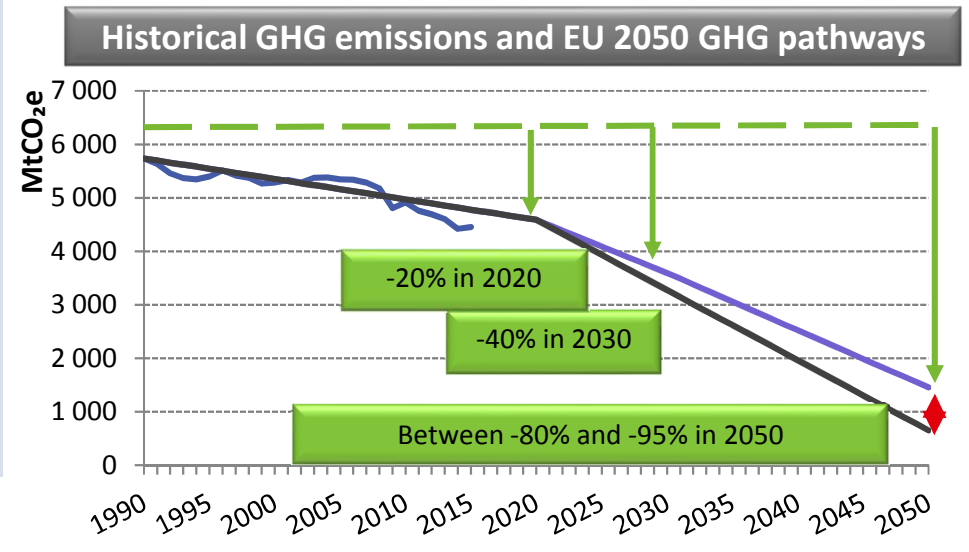
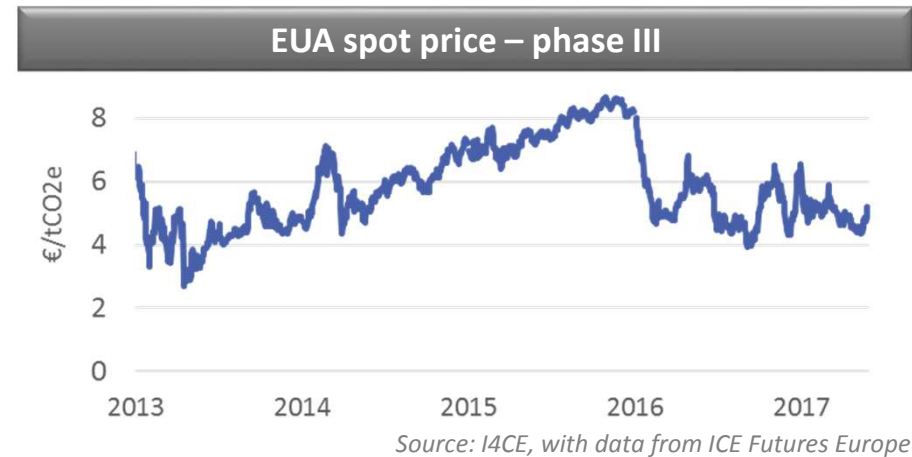
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October 10, 2017

INTRODUCTION | THE CONTEXT

The EU ETS reform takes place in a fast-changing context both at the EU and the international levels

- A significant EUAs surplus + depressed prices = undermining the credibility of the EU ETS
- A window of opportunity to reform the EU ETS is currently open but closing soon : the trilogue negotiations started in April 2017 is expected to succeed in October 2017.
- Other pieces of the 2030 climate and energy framework are under negotiation: the EC released legislative proposals on renewable energy, energy efficiency, the organization of the electricity market, emissions from non-ETS sectors
- The Brexit adds uncertainty to the revision of the EU ETS directive
- The EU ratified the Paris Agreement : EU 2030 and 2050 targets should now reflect this increased ambition.



INTRODUCTION | OBJECTIVES OF THE REPORT

Assessing quantitatively EU ETS reform options currently discussed in the Trilogue as well as other possible evolutions

- This report aims at providing **quantitative assessment of the ETS reform propositions and of other possible evolutions of the EU ETS during its Phase IV (2021-2030) with a long-term perspective until 2040**, taking into account the implementation of other pieces of the EU Climate and Energy package.
- The analysis considers **5 scenarios** :
 - 3 scenarios which represent possible outcomes of the trilogue negotiations on the EU ETS reform:
 - 1. Parliament scenario**
 - 2. Council scenario**
 - 3. Parliament scenario with a review of the cap in 2024**
 - Analysis of emissions reductions, the functioning of the MSR and the costs of necessary abatements up to 2040
 - Analysis on the framework mechanism for free allocation in Phase IV (2021-2030)
 - And 2 prospective scenarios:
 - 1. Brexit scenario**
 - 2. Scenario with an EU price corridor**

Members:

Decision-makers involved in the EU ETS: the French Ministry for the Ecological and Inclusive transition (Directorate General for Energy and Climate), the French Ministry for the Economy and Finance (Directorate General of Treasury and Directorate General for Enterprise), the UK Department for Business, Energy and Industrial Strategy, the EDF Group and Arkema

INTRODUCTION | OUR APPROACH

Our project is based on the collaboration between 3 entities with their specific expertise

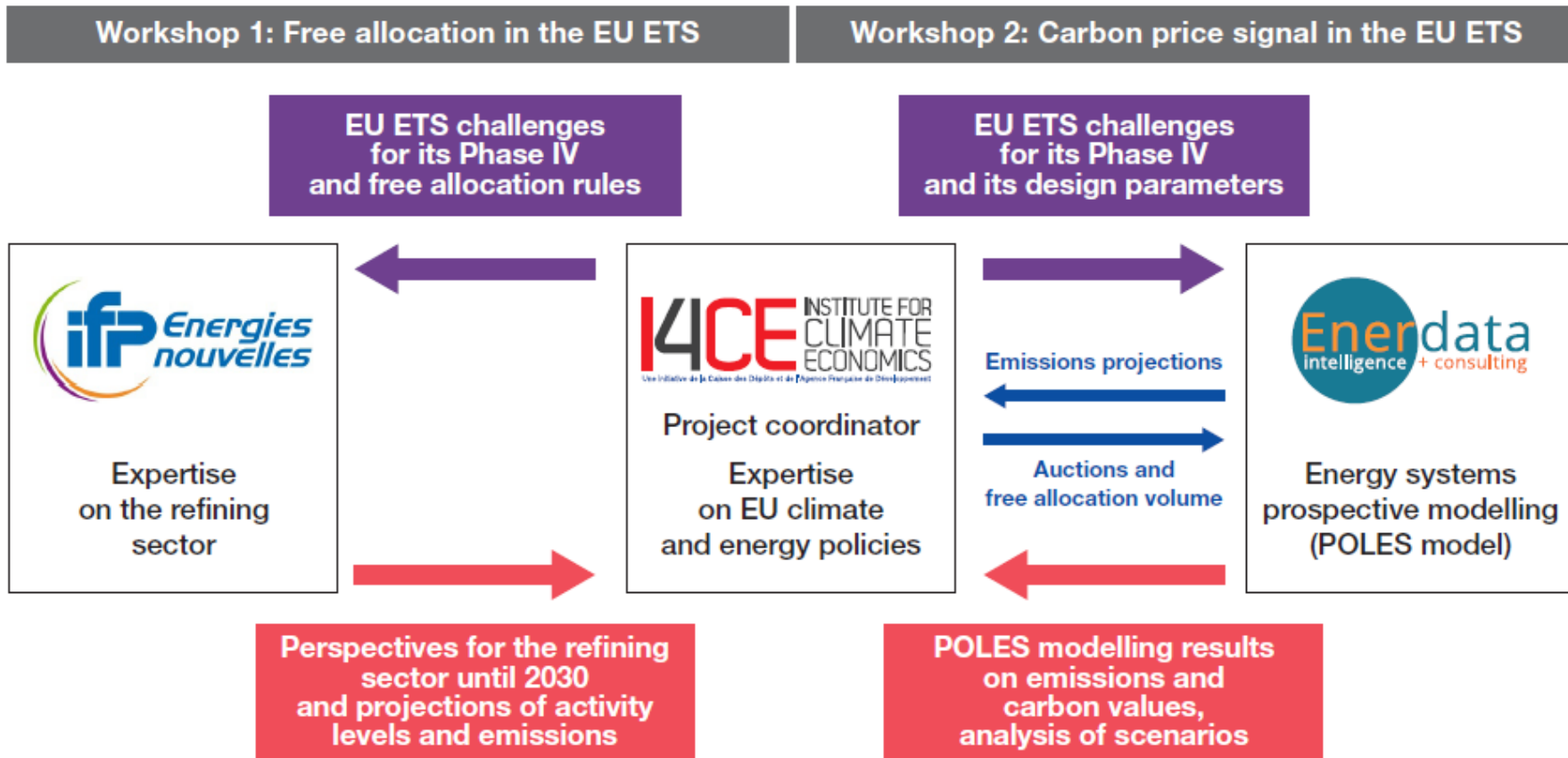


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- 4. Impacts on the free allocation framework : a focus on refinery sector**



1 | Assessment of options discussed in the trilogue negotiations to strengthen the EU ETS

1 | Options to strengthen the EU ETS : context

Positions of EU Parliament and Council

- In April 2017, trilogue negotiations started with counterproposals from the EU Council and EU Parliament adopted in February 2017.
- The analysis is based on three scenarios which model the EU ETS in the long term, taking into account other policies of the Climate and Energy Framework: **Parliament**, **Council** and **LRF +**.

	EU COMMISSION'S PROPOSAL/ MSR DECISION	EU PARLIAMENT'S AMENDMENTS	EU COUNCIL GENERAL APPROACH
Linear Reduction Factor 2021-2030	2,20%	2,20%	2,20%
Review Linear Reduction Factor	/	Possibility to increase the LRF after 2024 to 2,4%	/
Intake rate of the MSR	12%	24% until 2021(incl.)	24% until 2023 (incl.)
Cancellation of allowances in the MSR	/	800 million in 2021	Yearly cancellation of allowances after 2024 above the number of allowances auctioned the previous year
Cancellation of allowances by Member States	/	Possibility to cancel a volume of allowances corresponding to the closure of electricity generation in their territory capacity due to national measures	/

1 | Options to strengthen the EU ETS : Results

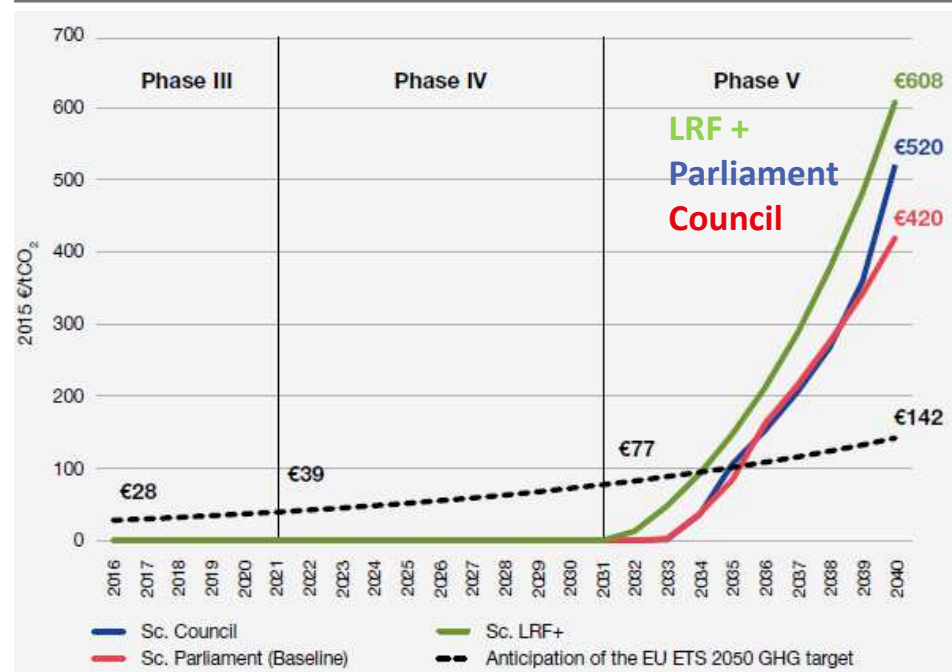
EU Parliament and Council's reform proposals are not sufficient to create an effective ETS by 2030

- The proposals to strengthen the EU ETS **fail to make it a driver of decarbonization** in energy and industry sectors over its Phase IV.
- **GHG emissions reductions notably driven by renewable energy and energy efficiency policies** are sufficient to respect the EU ETS target in Phase IV.
- The EU ETS does not constrain emissions reductions and **the carbon value (cost of GHG reductions) is thus equal to zero.**

Estimating the cost of CO2 reductions required: the carbon value

The carbon value in POLES is **not** the EU ETS market price. It represents the cost of GHG emissions reductions required to respect the constraint set by the EU ETS considering a sliding 5-years carbon budget.

EU ETS carbon value in the scenarios Council, Parliament and LRF +



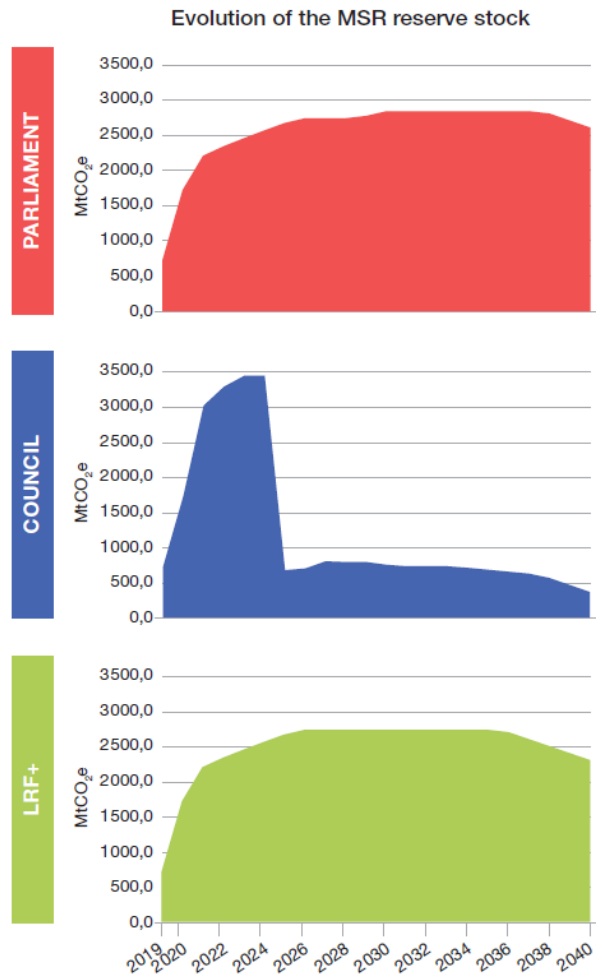
The line « Anticipation of the EU ETS 2050 target » in the graph corresponds to a sensitivity analysis on the carbon budget. In this modelling exercise, stakeholders have a vision of the 2016-2050 carbon budget set by the EU ETS: future emissions reductions needed are perfectly anticipated.

1 | Options to strengthen the EU ETS : Results

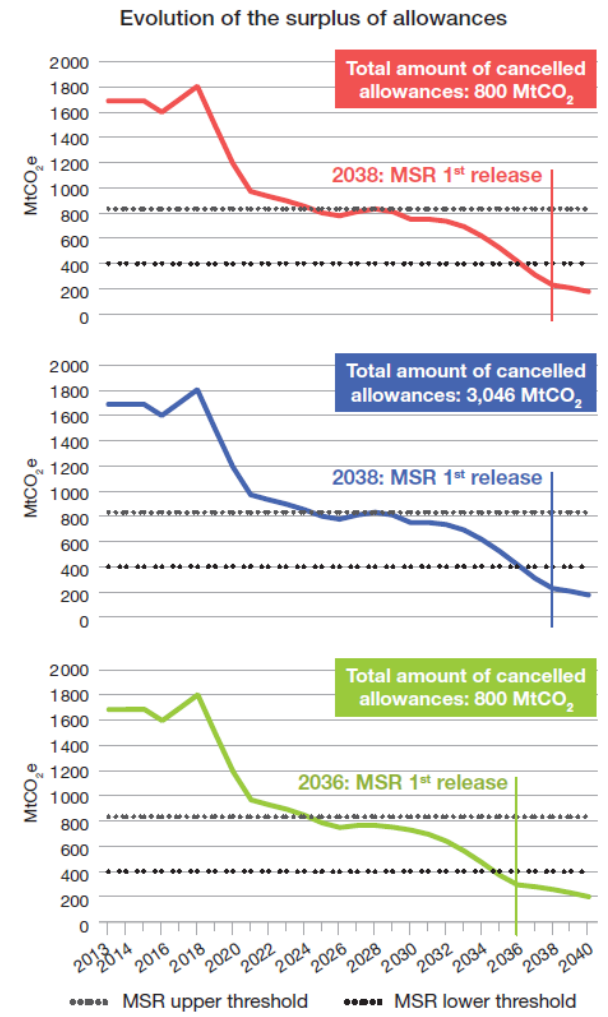
The MSR is not sufficient to mitigate effects between the EU ETS and renewable energy and energy efficiency policies

In spite of the doubling of its withdrawal rate in the first years of its functioning, the MSR is not able to mitigate the effect of complementary policies on the EU ETS during its Phase IV while absorbing the historical surplus of EUAs.

MSR stock: 2019-2040



EU ETS surplus 2013-2040

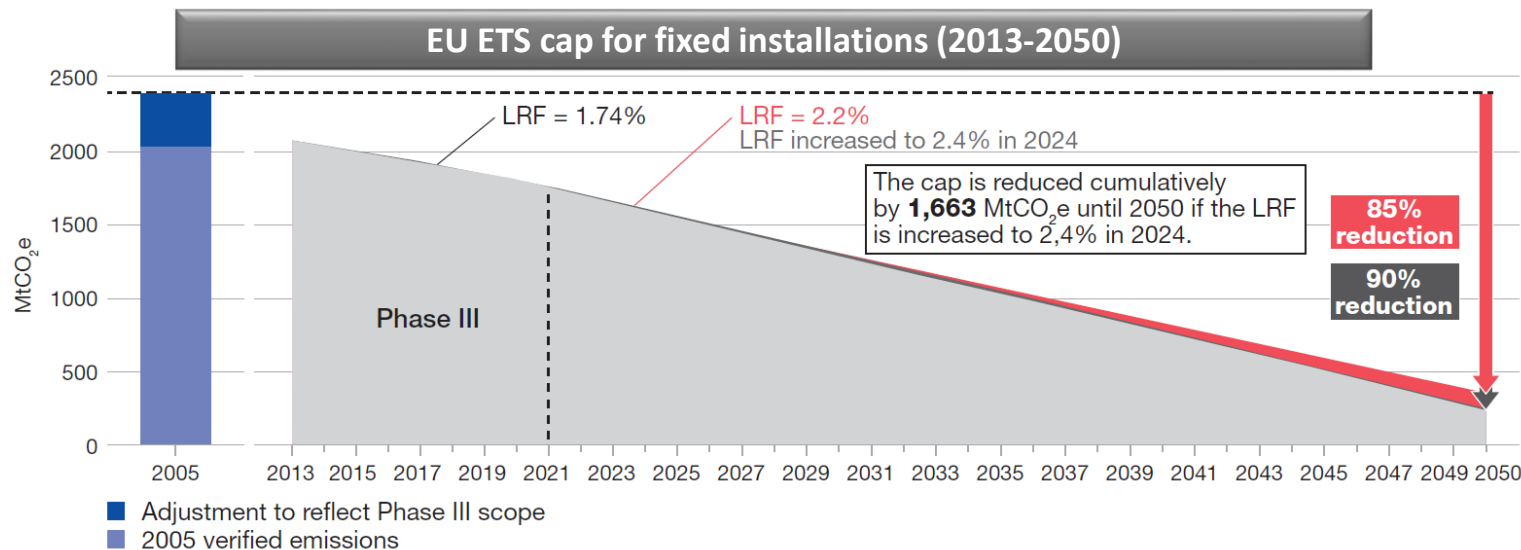


Source: I4CE & Enerdata, 2017

2 | Options to strengthen the EU ETS: long-term perspectives

By 2050, the EU ETS requires a drastic decrease in GHG emissions from industry and energy sectors

- As currently discussed in the trilogue negotiations, the EU ETS trajectory is aligned on the low end of long-term EU climate ambition
- Long-term EU climate objectives and the EU ETS trajectory should now be updated to integrate the objectives of the Paris Agreement
- And still, the EU ETS requires a drastic decrease in GHG emissions
- From the early 2030s, the cost of abatement required to respect the EU ETS target increases significantly.



Interpretation of the graph:

The grey area represents the EU ETS emissions cap in the case where the LRF is increased to 2.4% in 2024. The red area represents additional emissions in the cap in the case where the LRF is equal to 2.2% from 2021.

1 | Options to strengthen the EU ETS : how to manage a sustainable transition pathway

Long-term climate targets need to be anticipated for a sustainable low-carbon transition

- If the long-term constraint is not anticipated from today :
 1. In Phase IV, **EU ETS market prices would be too low** to give the right signals;
 2. In the longer term, higher EU ETS market prices would risk **leading policy-makers to alleviate the constraint set by the EU ETS**, and thus decrease its ambition
- With a proper anticipation of the EU ETS long term target, the need for further GHG emissions reductions would appear from today and would result in **a sustainable and politically acceptable decarbonization pathway.**
- **An updated 2050 EU roadmap**, integrating the objectives of the Paris Agreement, would be necessary to give more visibility to all
- Attention should be paid to the **environmental integrity of the MSR on the long run:**
 - Even with the cancellation of 800 million allowances in the MSR, as proposed by the Parliament, there would still be **more than 2 billion allowances** in the MSR in 2040
 - The proposal of the EU Council empties the MSR by **2044.**



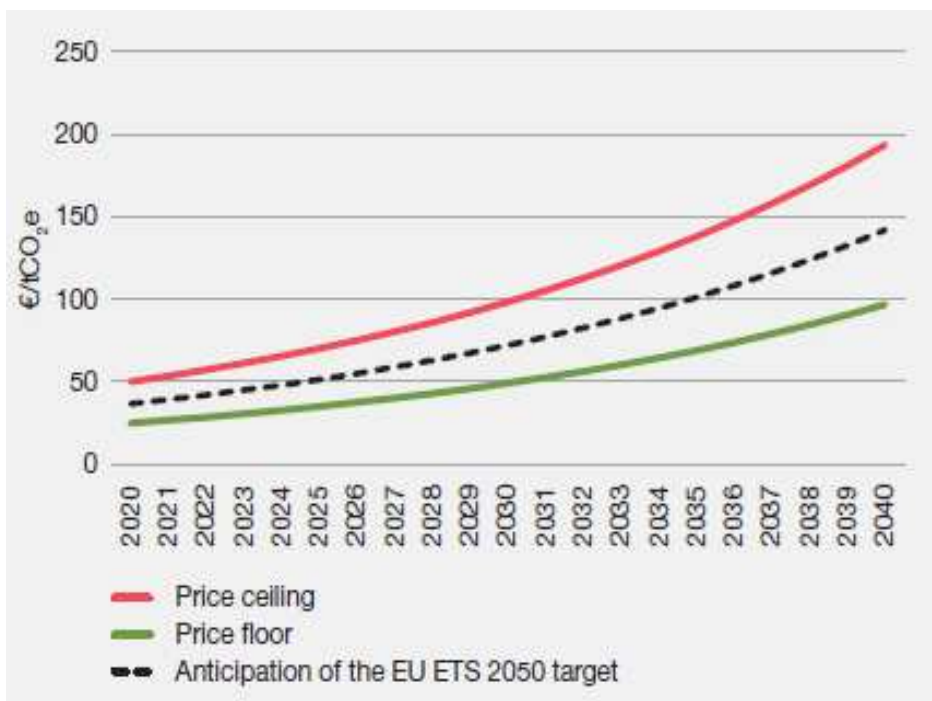
2 | Assessment of prospective scenarios:

- The implementation of a price corridor on the EU ETS**
- An exit of the UK from the EU ETS**

2 | A EU carbon price corridor in the EU ETS

A price corridor as a solution to the lack of anticipation of EU ETS operators

EU ETS carbon price corridor trajectory



In this scenario, a Price Corridor is implemented through an additional reserve on the EU ETS

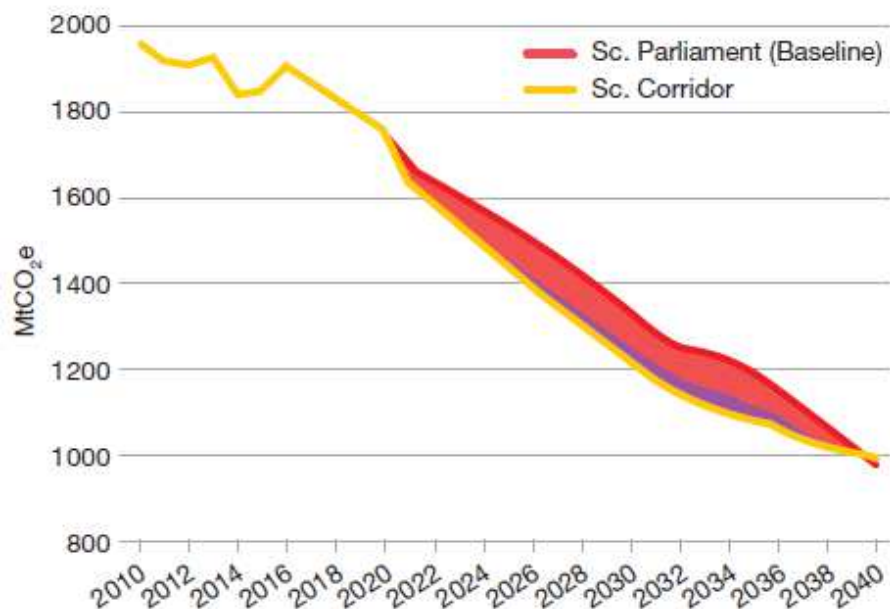
- This scenario does **not** model a price-based MSR
- Auctions are cancelled until the carbon value reaches the floor and corresponding allowances are transferred to a dedicated reserve (the “Price Corridor Reserve (PCR)”)
- Allowances are released from the PCR when the carbon value is higher than the ceiling
- The MSR and the PCR work independently from each other,

The trajectory of the carbon price are based on the recommendations of the Canfin-Grandjean-Mestrallet report (2016)

Price floor : starting at **25€** in 2020 / Price ceiling : starting at **50€** in 2020 / Both increasing by **7%** annually,

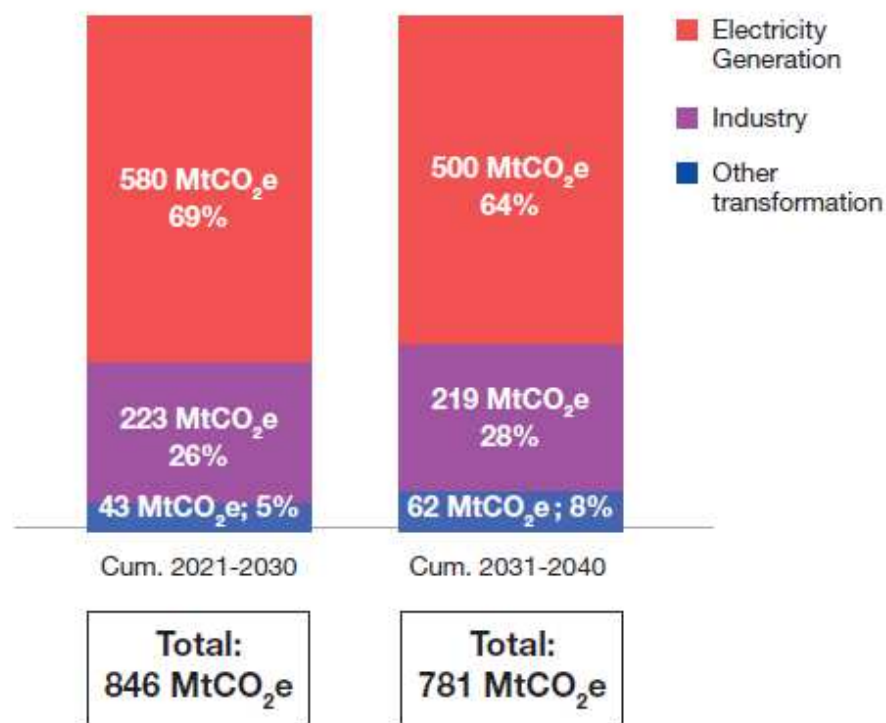
2 | A EU carbon price corridor in the EU ETS

The implementation of a Price Corridor leads to earlier mitigation efforts in EU ETS sectors



Note:

Other transformation includes the refining of mineral oil and the production of coke.

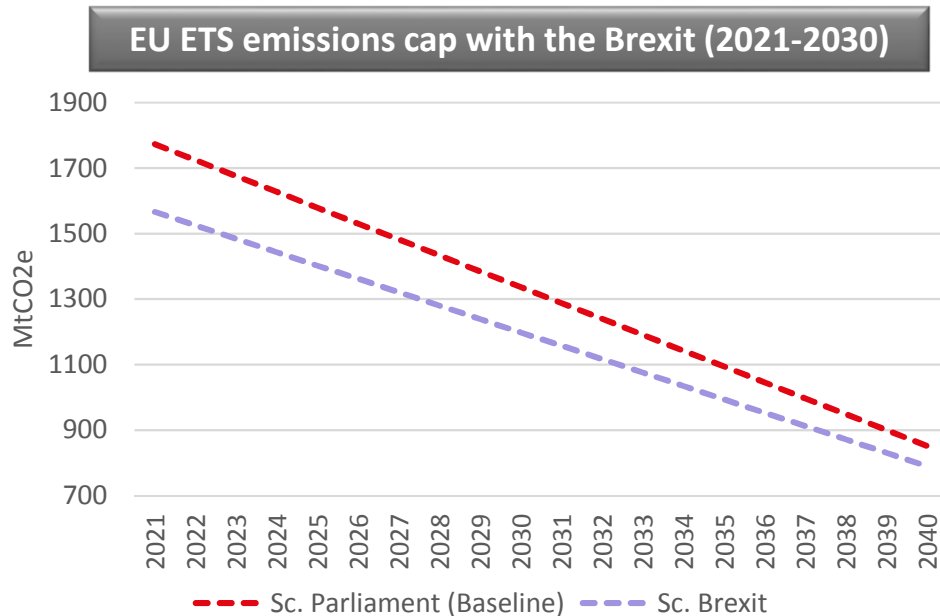


Source: Enerdata, 2017

- The implementation of a price corridor leads to **earlier mitigation actions in EU ETS sectors** and reduces cumulatively emissions by around **1,6 GtCO₂e** by 2040.
- **More than half** of these additional emissions reductions are achieved in the power sector.

2 | The Brexit and the EU ETS

A possible exit of the UK from the EU ETS adds to the uncertainty of the situation



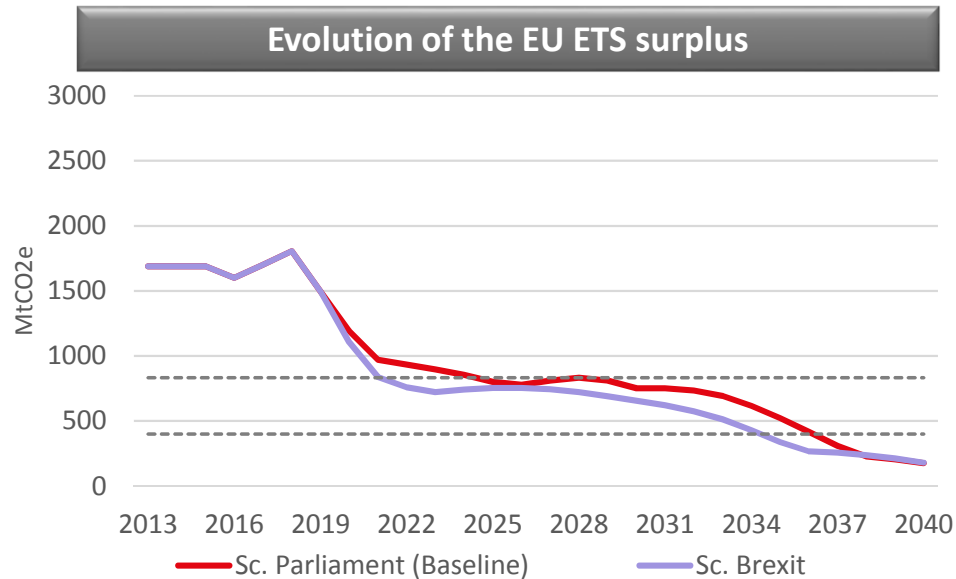
Assumptions

- The UK is considered to be no longer part of the EU ETS from the beginning of Phase IV
- EU objectives for renewable energy and energy efficiency are considered unchanged.
- The EU ETS cap is redefined in such a way as to **keep the ambition of the rest of the EU ETS constant**.
- Other EU ETS design parameters are considered unchanged.

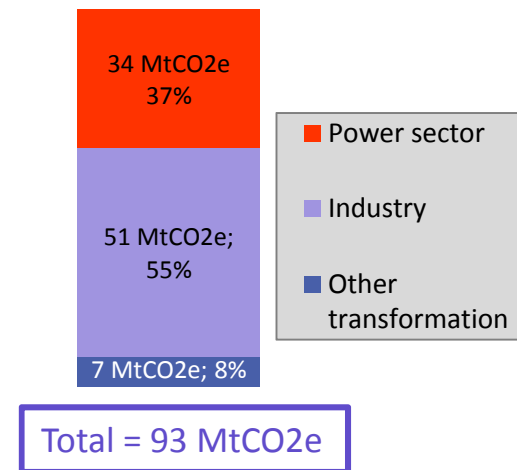
- The new EU ETS cap defined in the Brexit scenario corresponds to **higher mitigation efforts for the rest of the EU ETS**.

2 | The Brexit and the EU ETS

In case of a Brexit, careful attention should be paid to the adaptation of the EU ETS parameters



Cumulated additional emissions in the Brexit scenario compared to the Parliament scenario (2017-2040)



Source : Enerdata, 2017

- The Brexit impacts the **decrease of the surplus** and the **MSR functioning**.
- Resulting emissions in the Brexit scenario are higher than in the Baseline in 2040.
- The results of the Brexit scenario **cannot be dissociated from the assumptions** made for the adjustment of the EU ETS parameters.



3. Assessment of possible outcomes of the trilogue: impacts on the free allocation framework

3 | Free allocation : positions in the trilogue

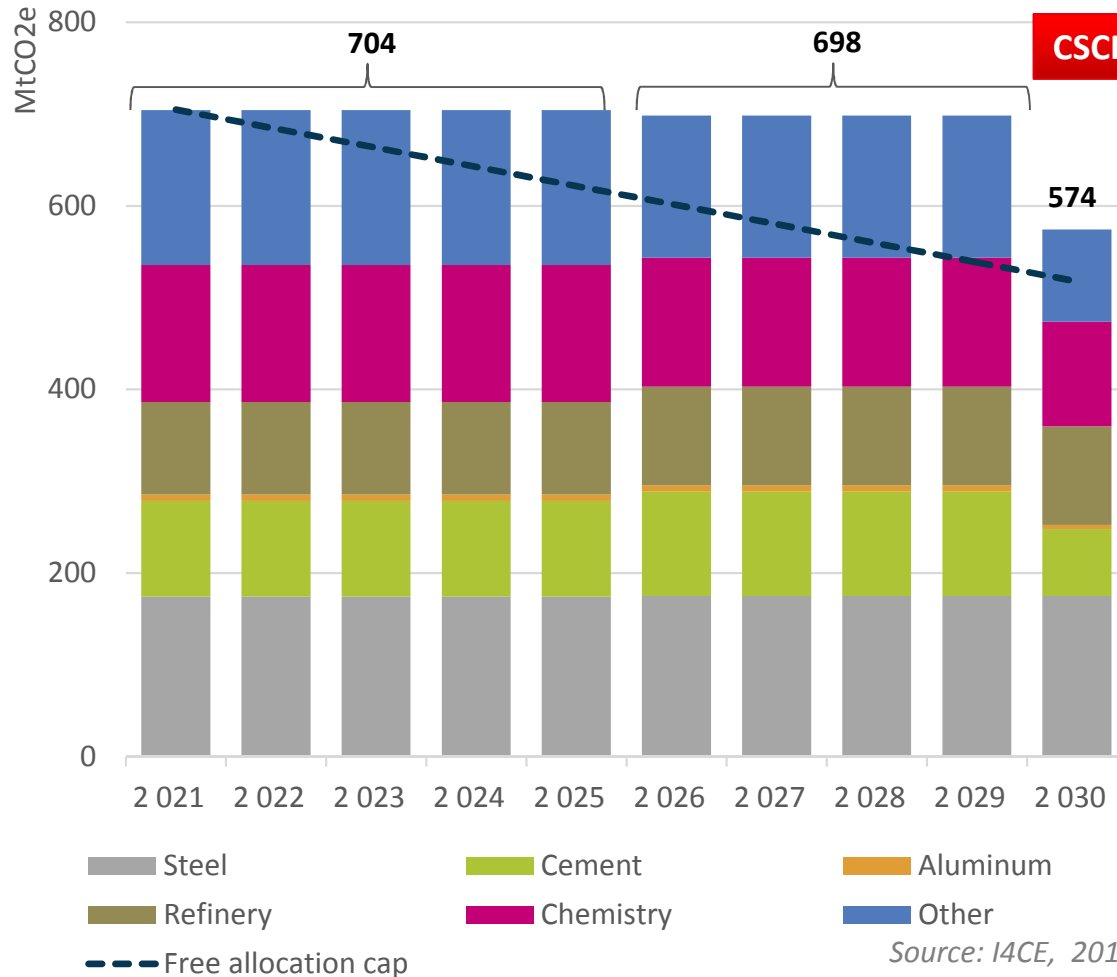
Post-2020 EU ETS reform proposals differ on a number of parameters which impact free allocation

Parameters	Parliament scenario	Council scenario
LRF	2.2%/year	2.2%/year
Adjustment of free allocation share to avoid triggering CSCF	+ 5 %	+ 2 %
Funds with allowances from FA share	1% of allowances for the fund to compensate indirect costs and 400 million allowances for NER	400 million allowances for Innovation Fund
Proportion of benchmarked-based allocation freely allocated	100% for sectors on CL list; 30% for district heating; 0% for others	100% for sectors on CL list; 30% for sectors not on CL list
Eligibility to CL list	0.2	0.2
Free allocation to waste gas used for electricity production	Yes	No
Application of CSCF	Only to sectors with an intensity of trade with third countries below 15% or a carbon intensity below 7Kg CO ₂ /Euro GVA	To every sector
Growth rates	Differentiated by sectors	
Benchmark decrease rates	Differentiated by sectors: the lowest possible rate has been used (0.25%) for major sectors covered by the EU ETS (refinery, cement, aluminum, steel)	Differentiated by sectors: the lowest possible rate has been used (0.20%) for major sectors covered by the EU ETS (refinery, cement, aluminum, steel)

3 | Free allocation in the trilogue : Results

Parliament scenario : a CSCF triggered in 2030

Final free allocation in Phase IV- Parliament scenario

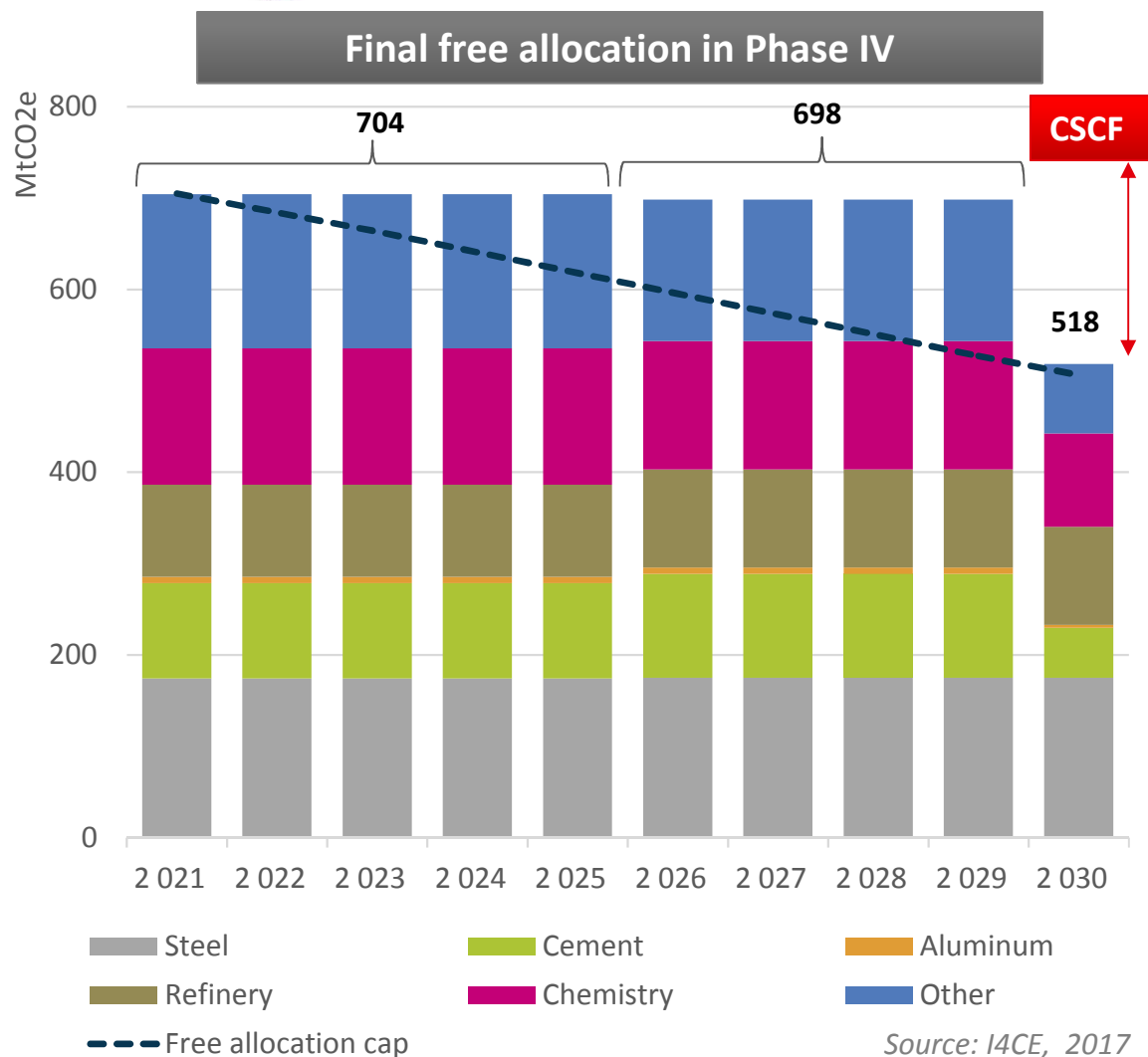


- The possible increase of the free allocation share by 5 percentage points corresponds to **775 million EUAs**.
- This amount is used in totality between **2022 and 2030**.
- In **2030**, a *Cross Sectoral Correction Factor* (CSCF) is triggered for **all sectors but** * :
 - **19.10** Manufacture of coke oven products
 - **19.20** Manufacture of refined petroleum products
 - **20.15** Manufacture of fertilizers and nitrogen compounds
 - **24.10** Manufacture of basic iron and steel and of ferro-alloys
- The **CSCF** is equal to **64.2 %** in 2030.

- The CSCF only applies to sectors with an intensity of trade with third countries below 15% or a carbon intensity below 7Kg CO2/Euro GVA
- The lowest possible benchmark decrease rates have been used in each scenario (0.25% in the Parliament scenario and 0.20% in the Council scenario) for major sectors covered by the EU ETS (refinery, cement, aluminum, steel)

3 | Free allocation in the trilogue: Results

LRF+ scenario: An increase of the LRF in 2024 does not significantly impact free allocation



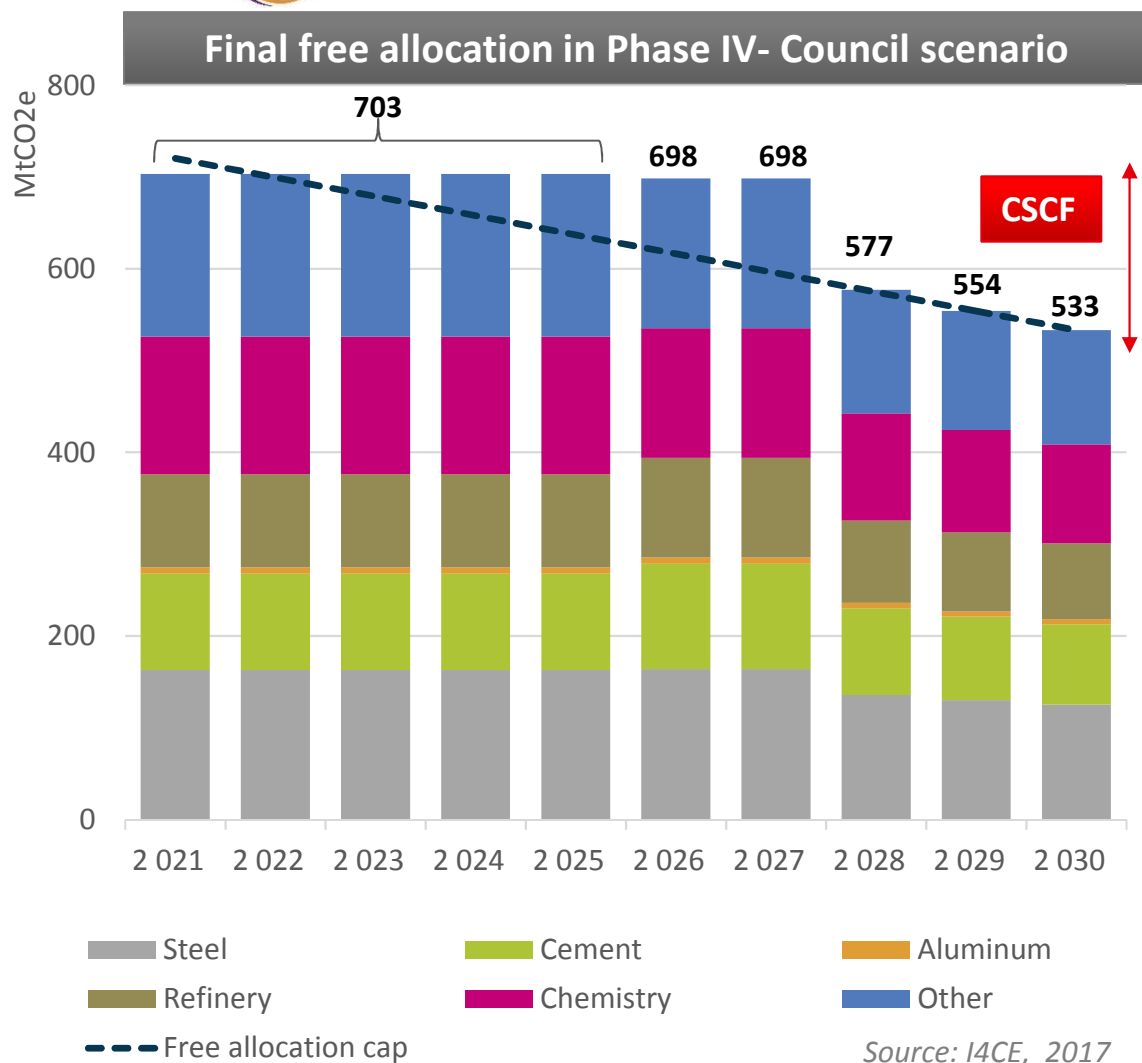
Parliament scenario with an increase of the *Linear Reduction Factor (LRF)* to 2.4% in 2024

- With an augmentation of the LRF to 2.4% in 2024, the possible increase of the free allocation share by 5 percentage points corresponds to **769 million EUAs**.
- The results are **very similar to the Parliament scenario**.
- The additional allowances are used in totality between **2022 and 2030**.
- In **2030**, a *Cross Sectoral Correction Factor (CSCF)* is triggered in sectors concerned* and is equal to **48.1%** in 2030, a value lower than in the Parliament scenario (64.2%).

* The CSCF only applies to sectors with an intensity of trade with third countries below 15% or a carbon intensity below 7Kg CO2/Euro GVA

3 | Free allocation in the trilogue: Results

Council scenario : a CSCF triggered from 2028



- The possible increase of the free allocation share by 2 percentage points corresponds to **310 million EUAs**.
- This amount is used in totality between **2023 and 2028**.
- A *Cross Sectoral Correction Factor* (CSCF) is triggered **from 2028** and is equal to **76.3%** in 2030.

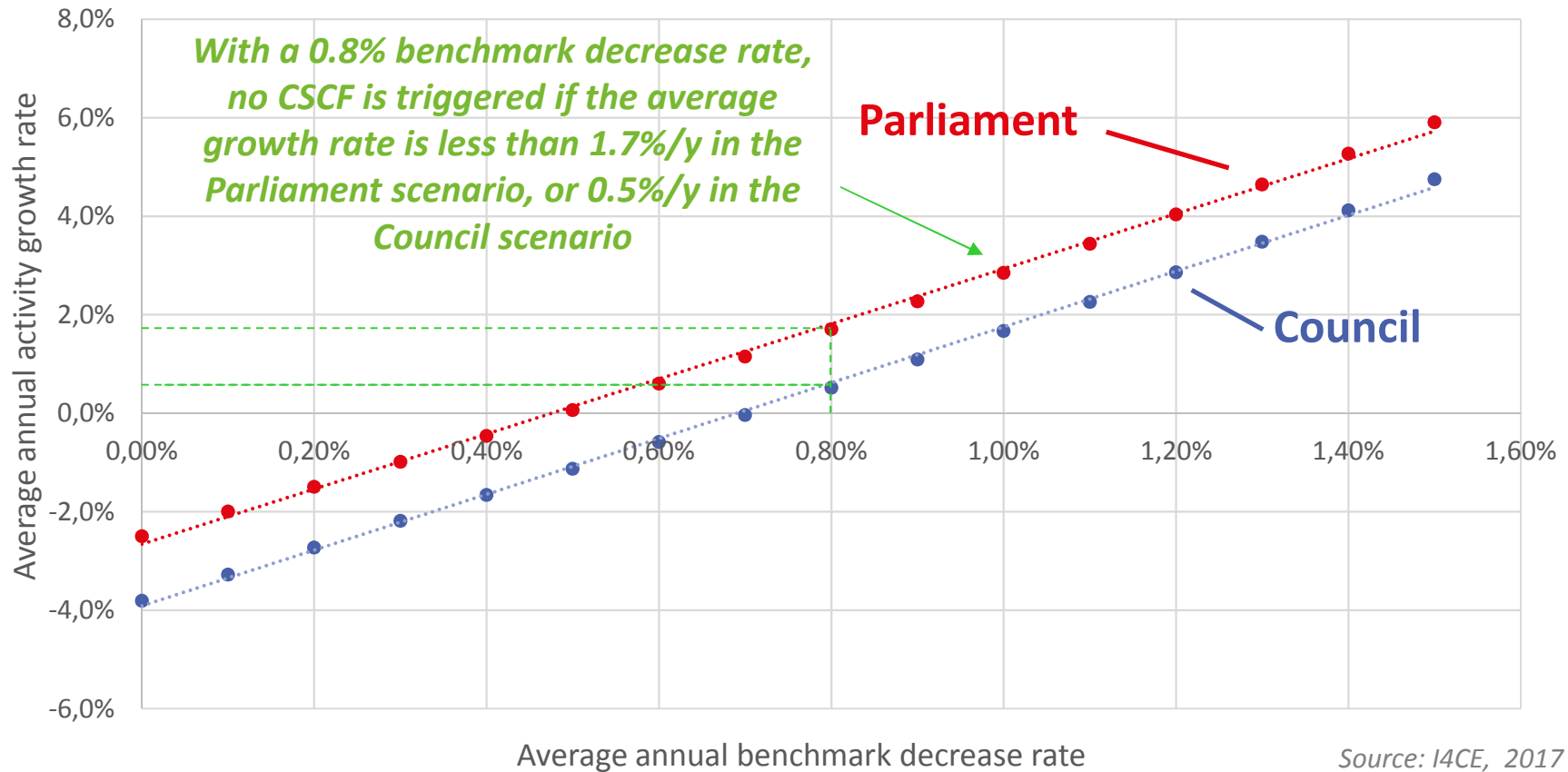


The lowest possible benchmark decrease rates have been used in each scenario (0.25% in the Parliament scenario and 0.20% in the Council scenario) for major sectors covered by the EU ETS (refinery, cement, aluminum, steel)

3 | Quantification of EU ETS design parameters

Assumptions on future growth rates and benchmark decrease rates balance each other out

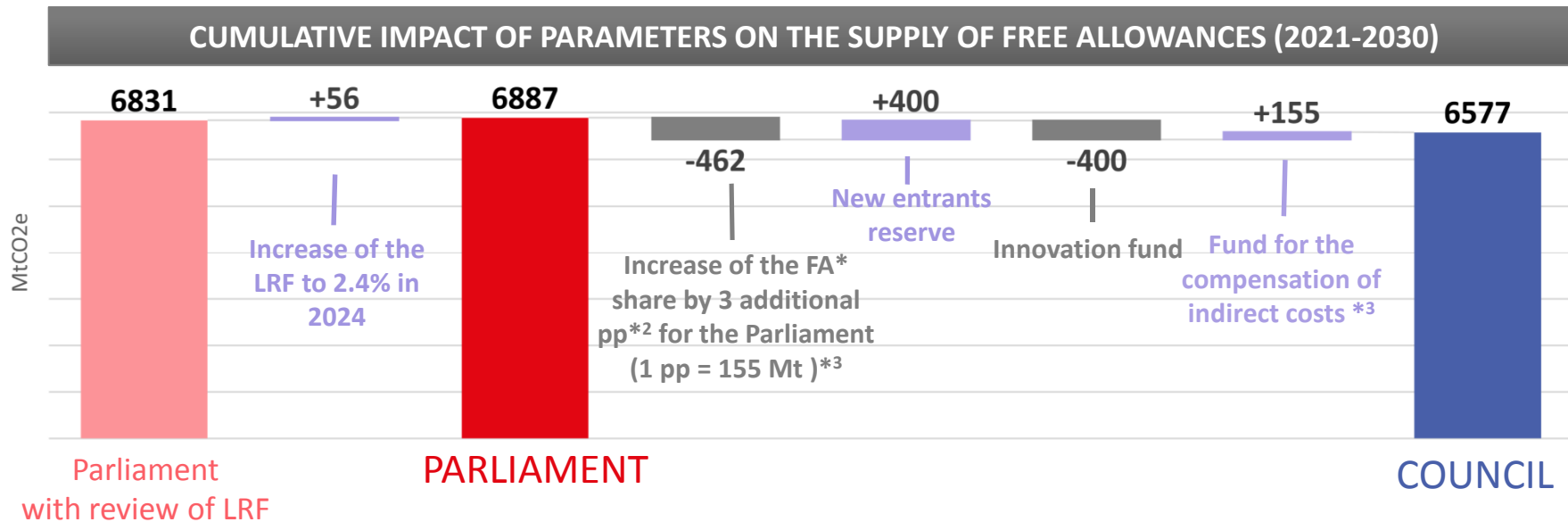
For each average benchmark annual decrease rate, maximum average annual activity growth rate for which no CSCF is needed *



* In this graph, benchmark decrease rates and activity growth rates are uniform across sectors

3 | Quantification of EU ETS design parameters

*More free allowances for the EU Parliament than
for the EU Council scenario*



Source: I4CE, 2017

- The Parliament’s position on the EU ETS reform results in **a larger amount of free allowances** than the Council’s
- The supply of free allowances remains higher in the Parliament scenario **even with an increase of the LRF to 2,4% in 2024**

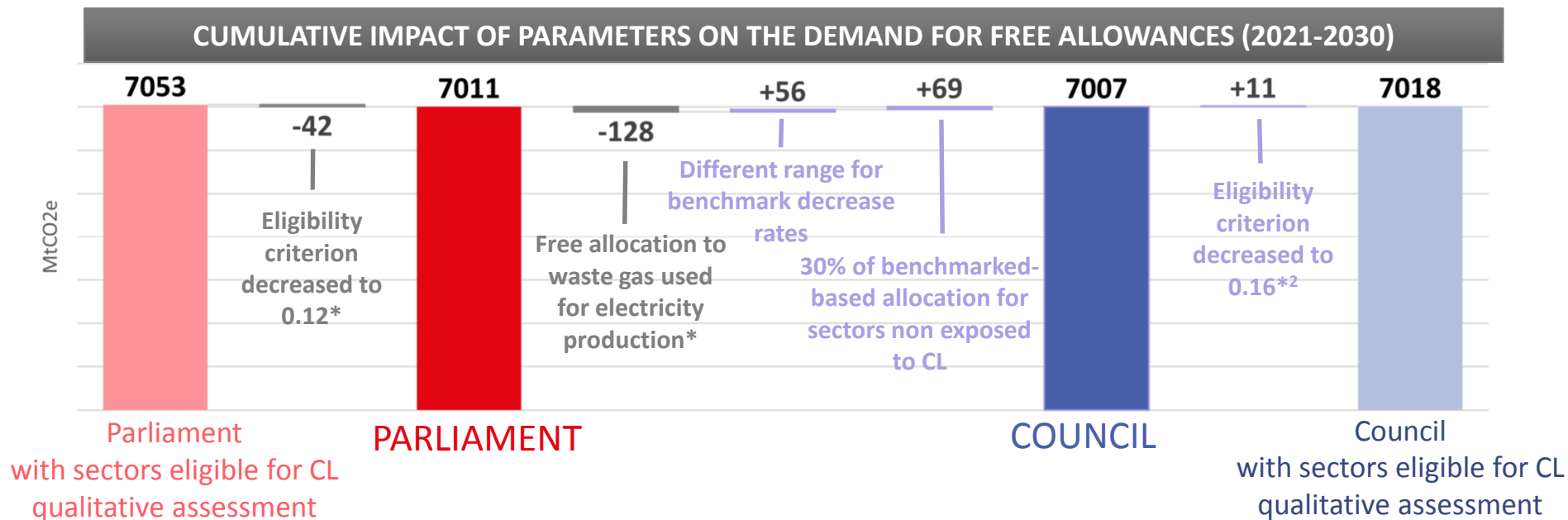
* FA = free allocation

*² pp = percentage points

*³ For a LRF equal to 2,2% from 2021 to 2030

3 | Quantification of EU ETS design parameters

The Council's and the Parliament's preferred design parameters result in a similar demand for free allowances



Source: I4CE, 2017

- The Council's and the Parliament's preferred EU ETS design parameters result in **a similar demand for free allowances**.
- Including all the sectors eligible to the qualitative assessment into the carbon leakage list has **a larger impact under the configuration of the Parliament**.

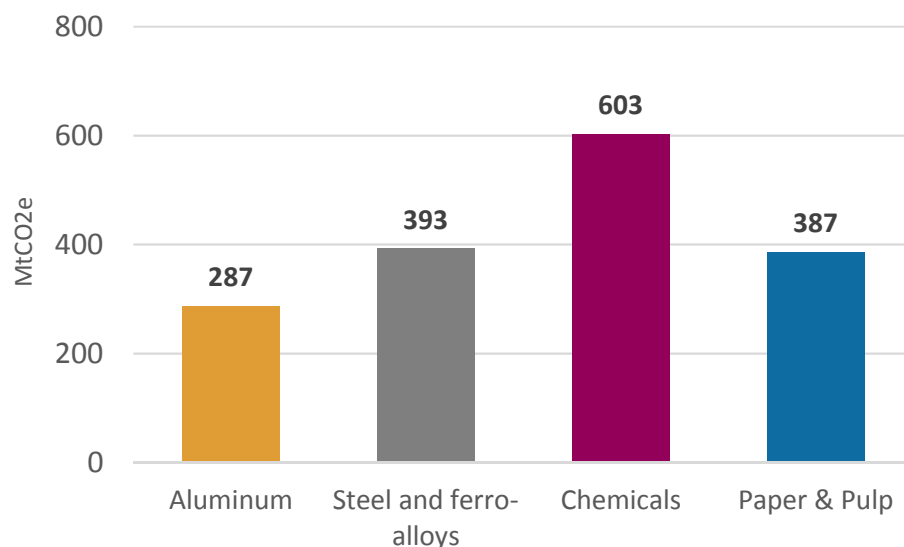
*Under the assumptions taken for free allocation in the Parliament scenario

*²Under the assumptions taken for free allocation in the Council scenario

3 | Compensation of indirect costs

Around 24 % of auctioning volumes would be required to compensate indirect costs

Indirect CO2 emissions eligible for compensation by sector (2021-2030)



Source: I4CE, 2017

- Over Phase IV, with an aid intensity of 75% harmonized over the EU ETS, a total of **1,670 million** allowances would be required to compensate indirect costs in the main eligible sectors.
- It represents around **12%** of total allowances supply in Phase IV and **24%** of auctioning volumes (taking into account the EU ETS design parameters of the Parliament amendments.)



4. Impacts on the free allocation framework : a focus on refinery sector

4 | Specific assumptions for the refinery sector

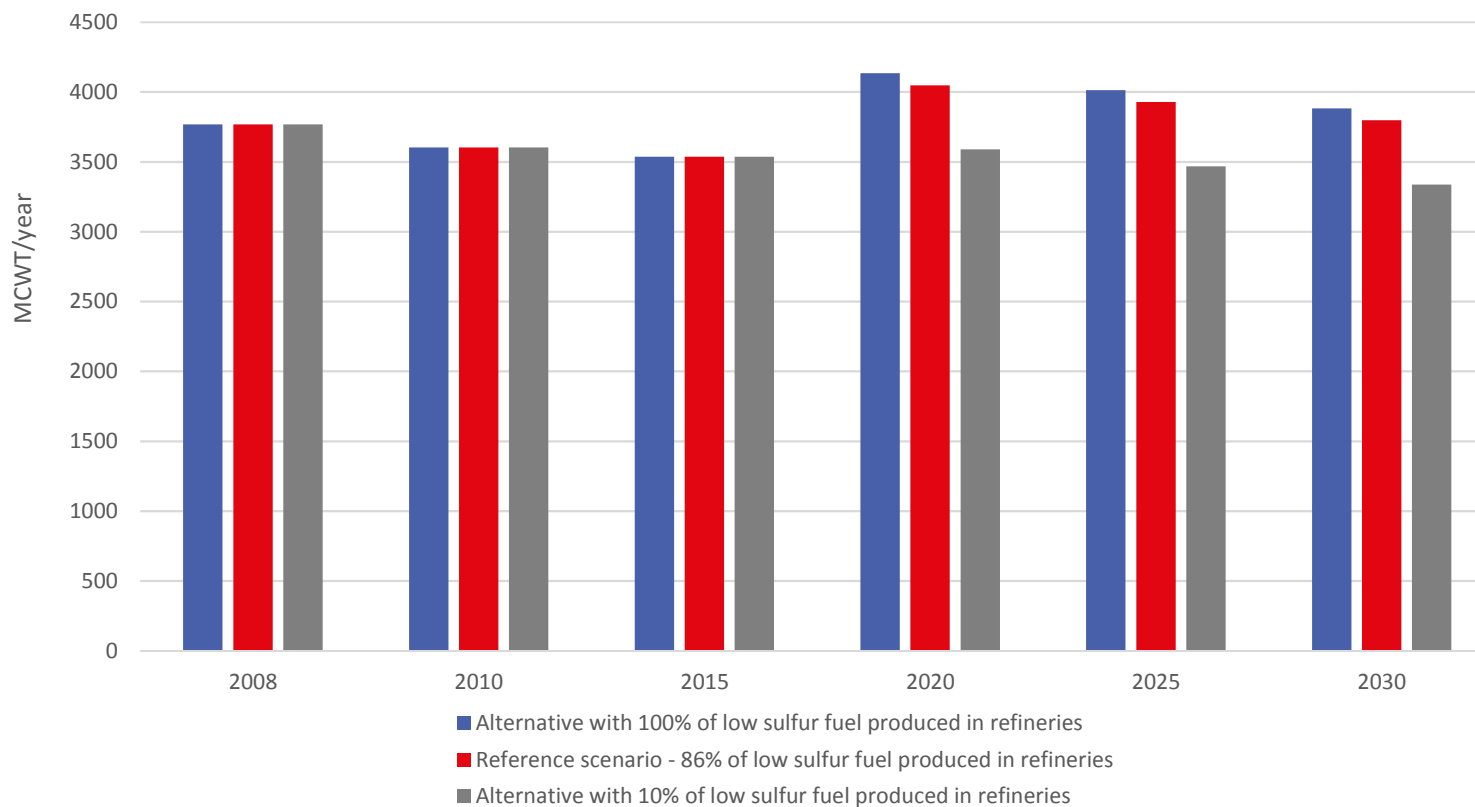
The refinery sector roadmap

- **The IMO Regulation will have a significant impact on the refining sector:** in 2020 the Marine fuel Oil used on board should be at 0,5% sulfur content
- **Two technical options to produce marine fuel with a 0,5% Sulfur content :**
 - In refineries - desulfurization
 - On board - scrubbers
- **Our main scenario, elaborated by IFPen after discussions with experts, is based on the following configuration in 2020:**
 - 86% of the marine fuel oil produced in European refineries is at 0,5 % S
 - 14% of the marine fuel oil is desulfurized on board by scrubbers
- **Two additional scenarios were developed, corresponding to the extreme situations of respectively 10% and 100% of the marine fuel oil produced in refineries at 0,5 S content, to give an idea of the sensitivity of the parameters**

4 | Specific assumptions for the refinery sector

The Refinery sector roadmap

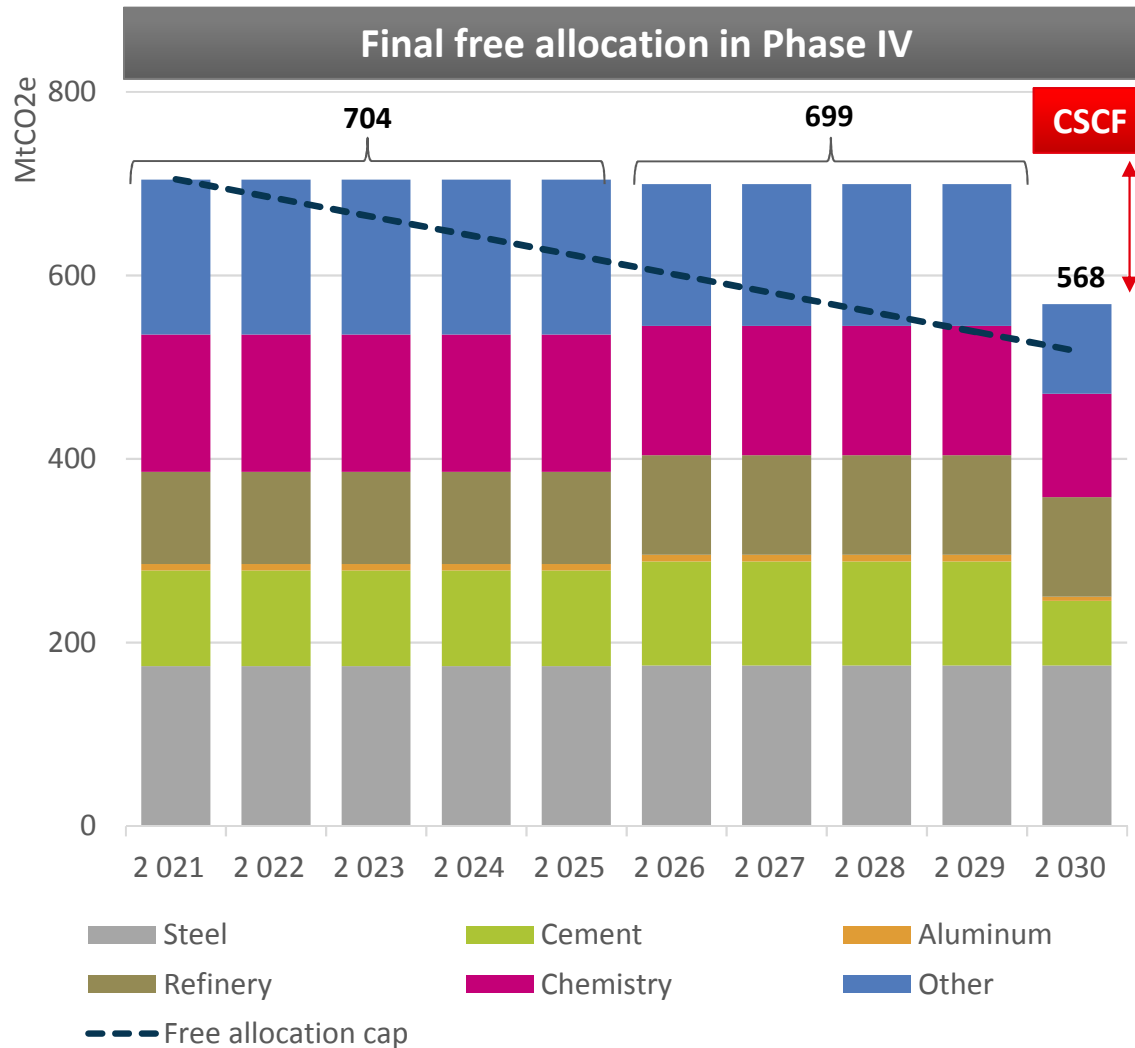
Projections of activity levels in the refining sector



Source: IFPen, 2017

4 | Implications on projections for the refinery sector on free allocation

Impact of higher refining activity on the Parliament scenario



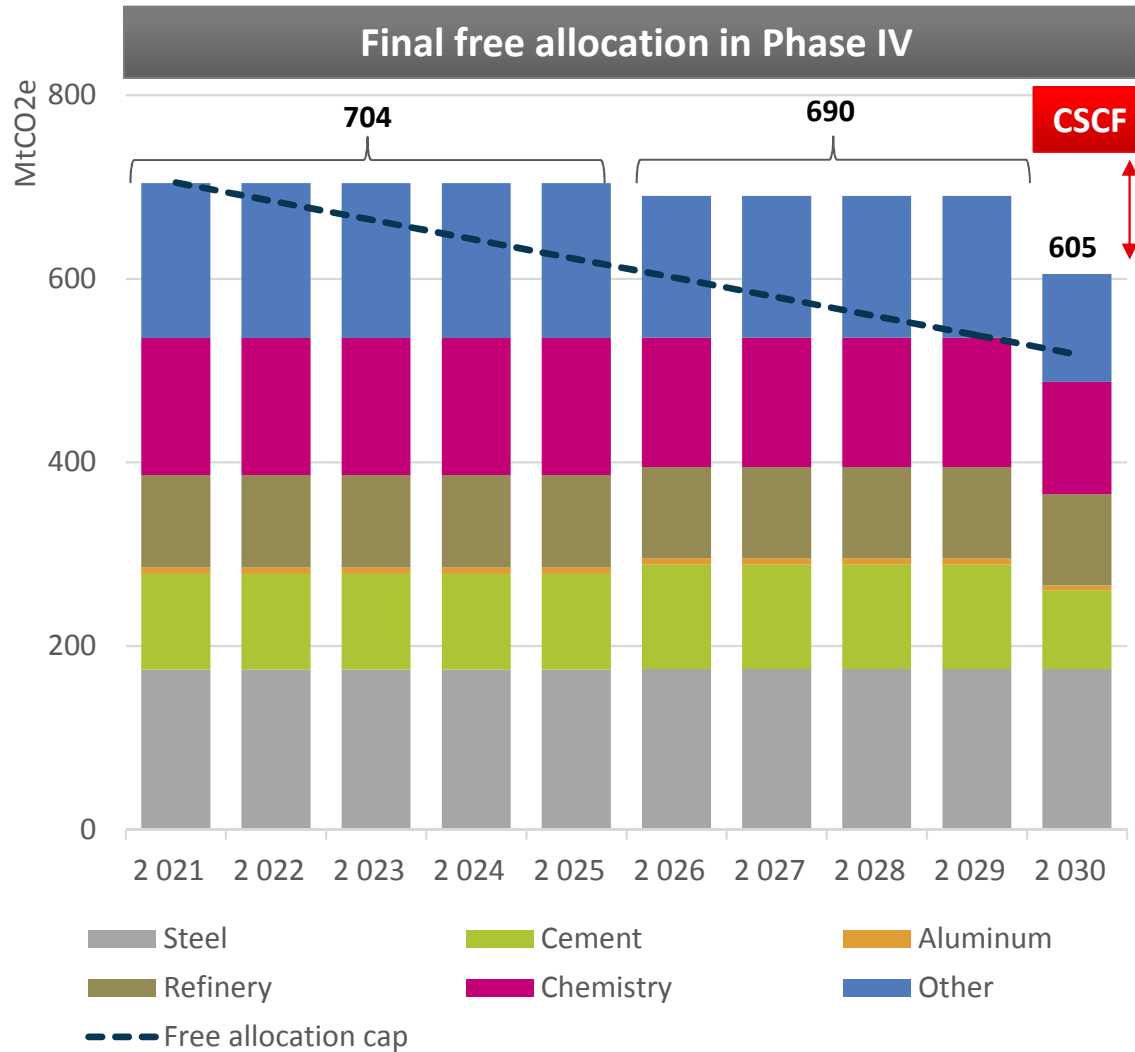
Parliament scenario with 100% of the marine fuel oil produced in refineries at 0,5 S content

- Preliminary allocation in the first subperiod (based on activity levels in the years 2013-2017) **does not change compared to the reference scenario**. The limitation on the sulfur content of marine fuel is not enforced yet in that period.
- In the second subperiod, preliminary allocation is slightly higher than in the reference scenario. In **2030**, a *Cross Sectoral Correction Factor (CSCF)* is triggered in sectors concerned* and is equal to **62.1%**.

Source: I4CE, 2017

4 | Implications on projections for the refinery sector on free allocation

Impact of lower refining activity on the Parliament scenario



Parliament scenario with only 10% of the marine fuel oil produced in refineries at 0,5 S content

- Preliminary allocation in the first subperiod (based on activity levels in the years 2013-2017) **does not change compared to the reference scenario**. The limitation on the sulfur content of marine fuel is not enforced yet in that period.
- In the second subperiod, preliminary allocation is slightly lower than in the reference scenario. In **2030**, a *Cross Sectoral Correction Factor (CSCF)* is triggered in sectors concerned* and is equal to **75.4%**.

Source: I4CE, 2017

10 TAKEAWAYS (1/2)

1. The revised EU ETS directive **will not be sufficient to make the EU ETS a driver of decarbonisation in industry and energy sectors** during its Phase IV, unless an unexpected proposal comes out of the trilogue negotiations.
2. The MSR will not be sufficient to **mitigate the interactions of renewable energy and energy efficiency policies with the EU ETS**.
3. The implementation of an EU-wide price corridor on the EU ETS would be **a solution to the lack of anticipation of ETS operators** and would lead to **earlier mitigation efforts in EU ETS sectors**.
4. The revision of other EU legislations thus appears as an opportunity to **create an ambitious and consistent policy mix** and **manage the interactions** between the different policy instruments.
5. In particular, the **Governance Regulation**, which, as proposed by the EU Commission, aims at ensuring the achievement of EU targets while ensuring policy coherency, could be enhanced to specifically address overlapping policies with the EU ETS.
6. A possible exit of the UK from the EU ETS **adds to the uncertainty of the current revision of the EU ETS directive**. In that case, **careful attention should be paid to the adaptation of the emissions cap and the MSR parameters**.

10 TAKEAWAYS (2/2)

7. The framework for free allocation to prevent carbon leakage risks in industrial sectors is a **focal point in the negotiations on the EU ETS reform**.
8. We find that **the positions of the Council and the Parliament on the EU ETS reform will probably result in a CSCF triggered at the end of Phase IV**, under conservative assumptions for benchmark decrease rates in major sectors covered by the EU ETS (refinery, cement, aluminum, steel).
9. Quantifying the impact of EU ETS design parameters on free allocation enables to evaluate how to avoid triggering the CSCF, keeping in mind that **free allocation should not result in windfall profits and was meant to be a transitional tool**.
10. If the framework for the compensation of indirect costs in electro-intensive sectors were harmonized across the EU ETS, we find that **around 24% of EUAs auctioning volumes would be required over Phase IV to compensate indirect costs in the main eligible sectors**.

CONTACT

Merci de votre attention!

N'hésitez pas à télécharger notre rapport et le Point Climat correspondant:

“EU ETS - Last call before the doors close on the negotiations for the post-2020 reform”



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