Proposal COM(2021) 551 of 14 July 2021 **amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading (EU ETS), Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the EU ETS** and Regulation (EU) 2015/757

Proposal COM(2021) 571 of 14 July 2021 **amending Decision (EU) 2015/1814 as regards the amount of allowances to be placed in the market stability reserve until 2030**

Proposal COM(2021) 564 of 14 July 2021 for a **Regulation establishing a carbon border adjustment mechanism**

FIT FOR 55:
EU-EMISSION TRADING SCHEME (EU ETS I)
FOR INDUSTRY AND ENERGY

cep**PolicyBrief** No. 5/2022

LONG VERSION

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A. Key elements of the EU proposal

1 "Fit for 55" Legislative Proposals and EU Emission Trading (EU ETS I)

- With its "European Climate Law" [Regulation (EU) 2021/1119; see cep**PolicyBrief** 03/2020], the EU committed itself to the target of "climate neutrality" by 2050 and tightened the reduction target for greenhouse gas emissions (GHGs) to 55% by 2030 as compared with 1990 levels (EU 2030 climate target).
- In order to meet the EU 2030 climate target and adapt EU climate and energy legislation accordingly, the Commission proposed its "Fit for 55" legislative package on 14 July 2021. As regards the existing EU Emission Trading Scheme (EU ETS I), the following legislative proposals are particularly relevant:
  - Proposal COM(2021) 551 amending the Directive on the EU Emission Trading Scheme (EU ETS) [EU ETS Directive 2003/87/EC], the Decision on the EU ETS market stability reserve (MSR) [MSR Decision (EU) 2015/1814] and the Regulation on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport [MRV Regulation (EU) 2015/757];
  - Proposal COM(2021) 571 amending MSR Decision as regards the amount of allowances to be placed in the MSR until 2030;
  - Proposal COM(2021) 564 for a Regulation establishing a Carbon Border Adjustment Mechanism (CBAM) [CBAM Regulation].
- The EU Emission Trading Scheme (EU ETS I) [see cep**Input** 03/2018] is a "Cap & Trade" scheme which
  - sets a cap on the maximum allowable GHG emissions from the sectors covered – energy production, energy-intensive industries, intra-community aviation – by limiting the number of EU ETS I allowances;
  - lowers the cap annually by a linear reduction factor (LRF);
  - allows EU ETS I allowances to be traded (Trade).
- The sectors currently covered by the EU ETS I are responsible for about 41% of all GHG emissions in the EU.
- By 2026, a separate EU ETS II is to be established for GHG emissions from road transport and buildings [EU ETS Directive, new Chapter IV].
- In order to bring the EU ETS I into line with the EU 2030 climate target, the Commission wants to [COM(2021) 551, p. 16–22]
  - extend the scope of the EU ETS I;
  - adjust the cap and increase the LRF;
  - modify the rules on benchmarks and the free allocation of allowances ("free allowances") as well as the number of allowances allocated to special funds or that are placed in the MSR in order to reduce an oversupply of allowances.
- In the course of the ongoing legislative procedure,
  - the European Parliament (EP) adopted its position in 1st reading on 22 June 2022 on the
    - EU ETS ("EP-Position EU ETS");
    - CBAM ("EP-Position CBAM");
  - the Council adopted on 15 March 2022 its General Approach on the CBAM ("Council-Position CBAM");
  - the Council adopted on 28 June 2022 its General Approach on the EU ETS ("Council-Position EU ETS").

2 Scope of the EU ETS I

- The scope of the EU ETS I will gradually be extended to include maritime transport [see cep**Input** 08/2021]. The allocation of EU ETS I allowances and the surrender requirements applicable to maritime transport activities apply to [EU ETS Directive, new Art. 3g and Art. 3ga]
  - 50% of emissions from ships on voyages between an EU port and a port outside the EU ("extra-EU voyages");
  - 100% of emissions from ships on voyages between two EU ports or at berth in an EU port ("intra-EU voyages").
- The scale of the obligation to surrender allowances in the maritime transport sector will increase as follows: 20% of the emissions in 2023, 45% in 2024, 70% in 2025 and 100% in 2026; unused allowances will be cancelled [EU ETS Directive, new Art. 3ga].
- The EP-Position EU ETS [Amendment 501] proposes to use at least 75% of the revenues from the auctioning of allowances to the maritime transport sector for a centrally managed "EU Ocean Fund", which will support projects and investments to improve the energy efficiency of ships and ports, innovative technologies to decarbonise the maritime sector and the use of sustainable alternative fuels.

- Industrial installations, whose thermal capacity is reduced to below a threshold of 20 megawatts (MW) due to investment in low-carbon technologies, are not currently subject to the EU ETS I.
- As of 2021, in order to create incentives for decarbonisation, such installations will [EP-Position EU ETS, Amendment 490: "be able to decide to"] remain in the EU ETS I, after the conversion of their production processes, until the end of a five-year period – and thus benefit from the free allocation of allowances [EU ETS-Directive, amended Art. 2 (1) in conjunction with Art. 11 (1)].
- The Commission shall by December 2025 submit a report and if appropriate a legislative proposal on an opt-in into the EU ETS I for installations smaller than 20 MW [EP-Position EU ETS, Amendment 490].
- Captured carbon emissions that are permanently bound in a product and do not enter the atmosphere during normal use (Carbon Capture and Utilisation, CCU) do not fall within the scope of the EU ETS I [EU ETS Directive, new Art. 12 (3b)].

3 Adjustment of the Cap and the Linear Reduction Factor (LRF)

- As from the year following entry into force of the amended EU ETS Directive, in order to align the total quantity of EU ETS I allowances with the new EU 2030 climate target [EU ETS Directive, amended Art. 9]
  - the LRF will be increased from the current 2.2% to 4.2% with the aim of reducing emissions from sectors covered by the EU ETS I from the current 43% to 61% [EP-Position EU ETS: 63%] by 2030, as compared with 2005 levels [COM(2021) 551, p. 20];
  - a "one-off downward adjustment of the cap" – "to be determined depending on the year of entry into force" of the amended EU ETS Directive – will ensure that the new LRF "has the same effect as if it had applied since 2021" [COM(2021) 551, p. 20].
- In order to expand the EU ETS I to maritime transport by 2023 [EP-Position EU ETS, Amendment 499: 2024] the cap, which was 1590 million allowances in 2021, will be increased by 79 million allowances [EU ETS Directive, amended Art. 3a]. This is less than the 100 million allowances that maritime transport would have to surrender based on the amount of GHGs emitted in 2019 [EU ETS Directive, Annex 10, Fig. 77].

4 Benchmarks

- The product-specific "ex-ante benchmark" indicates how many tonnes of GHG – expressed in CO_2 equivalents (CO_2e) – were emitted in the production of one tonne of a product, in the 10% most efficient installations in a sector or sub-sector, during a baseline period [EU ETS Directive, Art. 10a (1); see cep**Input** 03/2018, p. 7].
- The annual reduction factor ("update rate") of the ex-ante benchmark values is to "follow closer the emission reductions in the sectors and sub-sectors" [COM(2021) 551, p. 17] by increasing the maximum update rate from 1.6% to 2.5% as of 2026 [EU ETS Directive, new Art. 10a (2) (d)].
- The definitions of the ex-ante benchmarks are to be reviewed before 2026 [EU ETS Directive, new Art. 10a (1), sub-para. 3] in order to ensure "equal treatment of installations independently of the technology used, including when using low- or zero-carbon technologies" [COM(2021) 551, p. 19].

5 Availability of free allowances

- Whilst 57% of EU ETS I allowances have to be auctioned, the remaining 43% are allocated free of charge as free allowances to companies in sectors where there is a significant risk of production being moved to third countries that have no carbon pricing or GHG reduction targets (carbon leakage). This aims to create a "level playing field" for international competition.
- In order to ensure that "the method of allocation creates incentives for GHG emission reductions and energy-efficient technologies", allowances will only be allocated free of charge up to the level of the ex-ante-benchmark emissions [EU ETS Directive, Art. 10a (1)].
- Industrial installations covered by the obligation to carry out an energy audit [Energy Efficiency Directive 2012/27/EU, Art. 8 (4)] are subject to a 25% reduction in the allocation of free allowances if they [EU ETS Directive, amended Art. 10a (1)]
  - fail to implement the recommendations of the energy audit or
  - fail to achieve an equivalent reduction in GHG emissions.
- By contrast, the EP-Position EU ETS [Amendment 522] proposes an obligation for installations to prepare a "decarbonisation plan" by 1 July 2025. This is linked to a bonus-malus system consisting of

- an additional free allocation of 10% of the applicable benchmark value for installations whose GHG values in 2021 and 2022 are below the average of the 10% most efficient installations in a sector or sub-sector for the respective product benchmarks, and
- a reduction in free allowances for those installations where no climate neutrality plan has been drawn up or whose milestones and targets have not been met.

6 Carbon Border Adjustment Mechanism (CBAM)

- The Commission wants to introduce a Carbon Border Adjustment Mechanism (CBAM) with the aim of making imports more expensive if they come from countries whose climate protection targets and carbon costs are lower or non-existent [COM(2021) 564, see cep**Study** (2021), CBAM]. This will create a "level playing field" for international competition and thus prevent carbon leakage. The CBAM levy will correspond to the carbon price of EU ETS I allowances ("notional ETS"):
- The CBAM obliges importers to surrender "CBAM allowances" for selected imported carbon-intensive goods – such as cement, electricity, iron, steel, aluminium and fertilisers – by 2026 [COM(2021) 564, Art. 22 in conjunction with Annex 1] [EP-Position CBAM, Amendment 175: plus plastic, organic chemicals, hydrogen and ammonia].
- The CBAM allowances may be purchased by the competent authorities of the Member States at the average price of the closing prices of EU ETS I allowances on the common auction platform for each calendar week ["notional ETS"; COM(2021) 564, Art. 20 and 21].
- The number of CBAM allowances to be surrendered will be reduced to the extent that EU ETS I allowances are allocated free of charge [COM(2021) 564 Art. 31 in conjunction with the EU ETS Directive, amended Art. 10a].
- In the long term, CBAM sectors will no longer receive free allowances. Free allocation will gradually be reduced to zero over a 10-year transition phase ("phasing-out"). For this purpose, a multiplicative "CBAM factor" will be applied to calculate the quantity of free allowances to be allocated which
  - will be 100% until 2025;
  - will be reduced by 10 percentage points in each subsequent year thus ending at 0% in 2035.
- The EP-Position CBAM [Amendment 261] proposes that the CBAM should start by 2027 and that the CBAM factor for phasing out free allowances should be 100% for the period from 1 January 2023 to 31 December 2026, 93% for 2027, 84% for 2028, 69% for 2029, 50% for 2030, 25% for 2031 and 0% for 2032.
- The Council wants the CBAM factor to be 100% until 2025 to be reduced each year – by 5 percentage points from 2026 to 2028, by 7.5 percentage points from 2029 to 2030, by 10 percentage points from 2031 to 2032, by 15 percentage points from 2033 to 2034 and by 20 percentage points in 2035 [Council-Position, Amendment 12].
- The Council makes it a condition for negotiations with the European Parliament on the CBAM that sufficient progress has been made on solutions to limit carbon leakage risks for exports [Coreper Report ST 6978/22 ECOFIN of 12 March 2022, Regulation establishing a carbon border adjustment mechanism – General approach, 15 (b) in conjunction with Annex 1 (b)].

7 Market Stability Reserve (MSR)

- With the MSR Decision from 2019, the EU established the "Market Stability Reserve" (MSR) for EU ETS allowances in order to ensure "market stability and predictability". Its aim was to address historical "supply-demand imbalances and to make the EU ETS more resilient to major imbalances" [COM(2021) 551, p. 3].
- The current temporary increase, from 12% to 24%, in the percentage of EU ETS allowances that must be placed in the MSR when the Total Number of Allowances in Circulation (TNAC) exceeds 1096 million ("intake rate") will continue beyond 2023 until 2030 [MSR Decision, amended Art. 1 (5)].
- Allowances in the MSR exceeding 400 million will be cancelled – thereby reducing the overall cap [MSR Decision, amended Art. 1 (5a)].
- If the TNAC is between 833 and 1096 million, all allowances exceeding 833 million will be deducted from the quantity to be auctioned and placed in the MSR for 12 months as of 1 September of the year in question [MSR Decision, amended Art. 1 (5)].

8 Modernisation Fund

- In order to improve energy efficiency and modernise the energy systems of Member States with low per capita GDP, the EU has established a "Modernisation Fund" [EU ETS Directive, Art. 10d] for which
  - 2.5% of the TNACs between the year after the entry into force of the amended EU ETS Directive and 2030 must be auctioned in favour of Member States with a per capita GDP of less than 65% of the EU average between 2016 and 2018 [EU ETS Directive, amended Art. 10 (1) in conjunction with Annex IIb Part b];
  - 2% of the TNACs between 2021 and 2030 must be auctioned in favour of Member States with a per capita GDP of less than 60% of the 2013 EU average [EU ETS Directive, amended Art. 10 (1) in conjunction with Annex IIb Part a].
- The modernisation fund may not support energy production facilities that use fossil fuels [EU ETS Directive, amended Art. 10d (1)].
- The minimum amount from the modernisation fund, which the Member States must use for decarbonisation measures, is increased from 70% to 80% [EP-Position EU ETS, Amendment 549: 100%]. In the future, eligible uses will also include support for low-income households to combat "energy poverty" and to modernise their heating systems [EU ETS Directive, amended Art. 10d (2)].

9 Innovation Fund

- The innovation fund aims to support innovations relating to low-carbon technologies and processes. It will be financed through the auctioning of [EU ETS Directive, amended Art. 10a (8)]
  - 365 [EP-Position EU ETS, Amendment 534: 390] million allowances that can otherwise be freely allocated – 40 million more than at present;
  - 85 [EP-Position EU ETS, Amendment 534: 110] million allowances that can otherwise be auctioned – 10 million more than at present;
  - 50 million unallocated allowances from the MSR;
- Allowances resulting from the reduction of free allowances in connection with the introduction of the CBAM will also flow into the Innovation Fund [EU ETS Directive, new Art. 10a (1a) (a)].
- The Innovation Fund [EU ETS Directive, amended Art. 10a (8)]
  - must promote innovation in the EU ETS I sectors or in the road transport and buildings sectors, including CCU and Carbon Capture and Storage (CCS), as well as innovative renewable energy and energy storage with a particular focus on projects in CBAM sectors;
  - may promote "breakthrough technologies", infrastructure and low and zero carbon fuels to decarbonise the transport sector;
  - may include Carbon Contracts for Difference (CCDs) which guarantee investors in innovative climate-friendly technologies a price that rewards CO_2 emission reductions above the current price levels in the EU ETS I [EU ETS Directive, Recital 35].
- EP-Position EU ETS, Amendment 534: The Innovation Fund must use at least 10% of its resources for the further development of railway systems and public transport.

10 Use of the auction proceeds

- Revenues from the auctioning of allowances that are not used for the Modernisation Fund or the Innovation Fund will accrue to the Member States with the exception of the revenues that [EU ETS Directive, amended Art. 10 (3)]
  - are established as "own resources" of the EU budget;
  - are used to compensate for "indirect carbon costs" in the form of higher electricity prices due to EU ETS I allowance costs (electricity price compensation) [see cep**Study** (2019), Reform of Electricity Price Compensation].
- In addition to financing decarbonisation measures, Member States can now also use auctioning revenues
  - for the reduction of taxes that affect the supply of and demand for labour ("distortionary taxes") and
  - for measures to provide financial support to low and middle-income households [EU ETS Directive, amended Art. 10 (3) (h)].
- The EP-Position EU ETS [Amendment 512] instead replaces the explicit option to reduce distortive taxes with the option of reducing in particular taxes and charges on renewable electricity.
- The EP-Position EU ETS [Amendment 515] provides that at least 10% of the auctioning revenues must be used for passenger and freight rail transport and busses.

B. Legal and Political Context

1 Legislative Procedure

14 July 2021	Adoption by the Commission
Open	Adoption by the European Parliament and the Council, publication in the Official Journal of the European Union, entry into force

2 Options for Influencing the Political Process

Directorates General:	DG Climate
Committees of the European Parliament:	Environment, Public Health and Food Safety (ENVI, leading), Rapporteur on the EU ETS: Peter Wiese (EVP, DE), Rapporteur on the MSR Decision: Cyrus Engerer (S&D, MT), Rapporteur on the CBAM: Mohammed Chahim (S&D, NL);Transport and Tourism (TRAN); Industry, Research and Energy (ITRE)
Federal Ministries:	Economy and Climate (leading)
Committees of the German Bundestag:	Climate Change Mitigation and Energy (leading)
Decision-making mode in the Council:	Qualified majority (acceptance by 55% of Member States which make up 65% of the EU population)

3 Formalities

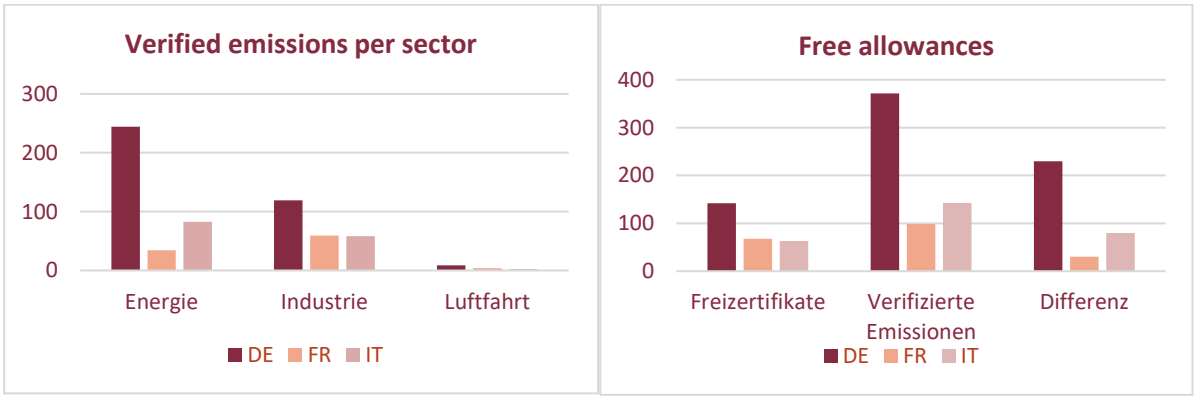
Basis for legislative competence:	Art. 194 TFEU (Energy), Art. 114 TFEU (Internal Market)
Form of legislative competence	Art. 4 (2) TFEU (Shared competence)
Procedure:	Art. 294 TFEU (Ordinary legislative procedure)

C. Perspectives of Member States

1 Verified emissions and free allowances in the EU

The Member States are affected in different ways by changes to the EU ETS I because their industries emit varying degrees of GHGs. While energy production in Germany is still very carbon-intensive, France relies heavily on nuclear power. This is also reflected in the lower proportion of GHG emissions not covered by free allowances in France. In addition, the German industrial sector is larger than in other Member States which means it is also more reliant on free allowances – especially for its large export sector (see Fig. 1).

Fig. 1: GHG emissions in million tonnes and free allowances in millions (2019)

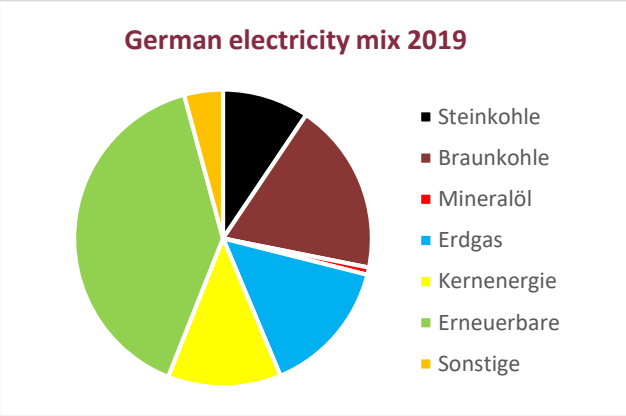


Source: DEHST und Citepa[1]

[1] DEHST (2021), 2020 VET Report; Citepa (2021), Secten, Datei: Citepa-SEQE-UE_ed2021-d.xlsx.

2 German perspective

Fig. 2: German electricity mix (2019)



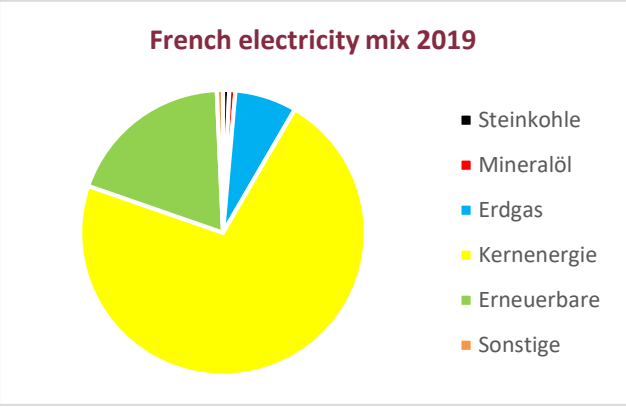
Source: AG Energiebilanzen e.V.[2]

The German electricity sector is still heavily dependent on carbon-intensive coal-fired and gas-fired power stations (see Fig. 2). Electricity prices are therefore strongly affected by rising prices for EU ETS allowances. The GHG emissions from industry are also high and largely covered by free allowances. The industrial sector – especially the large export industry – relies heavily on free allowances to reduce its carbon leakage risk. However, a large proportion of total GHG emissions is not covered by free allowances as the emissions from energy production are high (see Fig. 1).

At the Environment Council on 6 October 2021, the then German Environment Minister Svenja Schulze emphasised that the ambitious strengthening of the EU ETS I was essential but that "adequate and lasting carbon leakage protection" had to be ensured.[3] The coalition agreement of the three governing parties calls for "effective protection against carbon leakage (border adjustment mechanism, free allocation)"[4] and therefore supports a CBAM "or comparable effective instruments" that are WTO-compliant and "do not disadvantage the export industry".[5] It is also pushing for an ETS minimum price.[6] If no agreement is reached in the EU, the parties will decide on "appropriate national measures (e.g. cancellation of allowances or a minimum price etc.)" in order to prevent the allowance price from falling below € 60/tonne CO_2.[7] In addition, it envisages a global ETS that, in the medium term, will lead to a uniform carbon price.[8]

3 French perspective

Fig. 3: French electricity mix (2019)



Source: Ember's European Electricity Review 2021[9]

French electricity is mainly generated by nuclear power which has comparatively low GHG emissions. Consequently, only a few ETS allowances are needed so rising prices for ETS allowances do not have a major impact on electricity prices. GHG emissions from industry are higher than GHG emissions from energy production but are largely covered by free allowances. Only a small proportion of total GHG emissions is not covered by free allowances as the GHG emissions from energy production are low (see Fig. 1).

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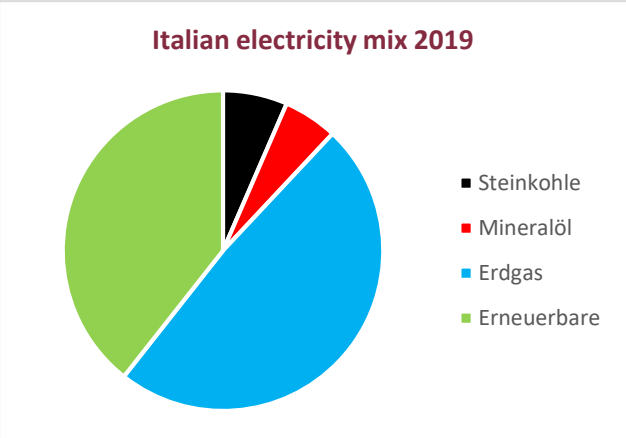
2 AG Energiebilanzen (2021), AGEB Jahresbericht 2019.
3 Environment Council of 6 October 2021, Fit for 55 – Exchange of views, https://video.consilium.europa.eu/event/en/24960.
4 Koalitionsvertrag 2021–2025 zwischen der Sozialdemokratischen Partei Deutschlands (SPD), BÜNDNIS 90 / DIE GRÜNEN und den Freien Demokraten (FDP), Mehr Fortschritt wagen, Bündnis für Freiheit, Gerechtigkeit und Nachhaltigkeit 2021 [Coalition Agreement 2021–2025], para. 751–754.
5 Ibid., para. 2100–2101.
6 Ibid., para. 2032–2034.
7 Ibid., para. 2040–2043.
8 Ibid., para. 2061–2062.
9 Dataset-European-Electricity-Review-H1-2021 – XLSX, Page "full data", https://ember-climate.org/app/uploads/2022/02/Data-file-Ember-EU-H1-Report.xlsx.

4 Italian perspective

Fig. 4: Italian electricity mix (2019)



Source: Ember's European Electricity Review 2021[10]

Italian electricity is primarily generated by gas-fired power plants and renewables, the proportion of high-carbon fossil fuels is relatively low. Electricity prices are therefore strongly influenced by the price of gas and less by rising prices for ETS allowances. GHG emissions from industry are lower than GHG emissions from energy production and are largely covered by free allowances. A substantial proportion of total GHG emissions is not covered by free allowances due to the higher GHG emissions from energy production; Italy occupies a middle position between Germany and France (see Fig. 1).

D. Assessment

1 Economic Impact Assessment

1.1 Effectiveness and efficiency of the EU ETS I

The EU ETS is an effective and efficient instrument for reducing GHG emissions: The cap sets an overall GHG emission reduction target which limits GHG emissions to the number of available allowances ("effectiveness"). The tradability of EU ETS I allowances leaves it up to the market operators to determine the best option for reducing emissions at the lowest possible cost – given the technologies currently available ("static efficiency").[11] Effectiveness and efficiency can be illustrated by comparing the current EU ETS I sectors with the sectors not currently covered by the EU ETS. These are, most notably, road transport, buildings, agriculture and waste disposal which are regulated by the Effort Sharing Regulation (ESR) [(EU) 2018/842][12]. A comparison of the different GHG reduction rates and their various inherent abatement costs shows that from 2005 to 2018, an EU ETS I allowance price – which characterises the marginal abatement costs in the EU ETS I sectors – in the range of € 5 to € 25 per tonne of CO_2, led to a 29% reduction in GHG emissions. In the same period, in the ESR sectors, a GHG reduction of only 11% was achieved (see Fig. 5). In the road transport sector, almost no reduction in GHG emissions was achieved despite the high abatement costs enforced by legislation, resulting e.g. from carbon emission standards and subsidies. Thus, in Germany, the reduction of one tonne of CO_2 by a battery-electric compact-class car is subsidised with approx. € 2,400.[13] In the US car industry, which is subject to less stringent CO_2 emission standards than the EU, the associated abatement costs for a tonne of CO_2 are between 60 and 380 US dollars.[14]

[10] Ibid.

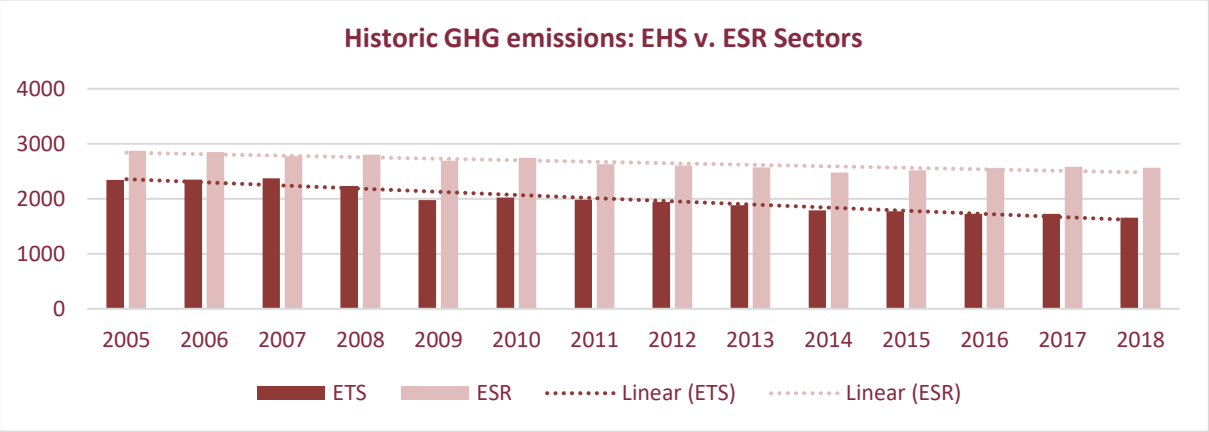
[11] In contrast to "static efficiency" – which describes the cost-effective improvement of existing baseline conditions, e.g. the CO_2 reduction with existing technology –, "dynamic efficiency" also relates to the efficient implementation of new processes, e.g. the CO_2 reduction using technologies yet to be developed. Ghemawat, P. / Ricart Costa, J. E. (1993), The organizational tension between static and dynamic efficiency, Strategic Management Journal, 14, p. 59–73.

[12] Bonn, M. / Reichert, G (2018), Climate Protection by way of the EU ETS, cep**Input** 4/2018.

[13] Weimann, J. (2021), CO_2-Preise und Kosten der CO_2-Vermeidung bei Anwendung ordnungsrechtlicher Maßnahmen im Vergleich zur Erweiterung des EU-ETS, Brief report commissioned by the German Liberal Party (FDP), p. 22.

[14] Gillingham, K. / Stock, J. H. (2018), The Cost of Reducing Greenhouse Gas Emissions, Journal of Economic Perspectives, 32 (4), p. 53–72.

Fig. 5: Historic GHG emissions



Source: European Environment Agency[15]

1.2 Adjustment of the Cap and the LRF

The tightening of the linear reduction factor (LRF) from 2.2% to 4.2% is unavoidable, and the one-off reduction of the cap justifiable, if the gradual reduction in the cap is to be adapted to the EU's new GHG reduction targets and the energy and industry sectors are to continue to make an important contribution to the overall reduction target. However, global GHG emissions can only be reduced globally. As long as not enough countries worldwide – especially those with high GHG emissions such as China – participate in the reduction of GHG emissions, a significant carbon leakage risk will exist. Carbon leakage is characterised by the relocation of CO_2-intensive production – e.g. steel – and the associated GHG emissions, from the EU to third countries with less costly climate protection, which results in an overall increase in global GHG emissions.[16] A further reduction of the cap and the associated price increases of EU ETS I allowances will also significantly increase the carbon leakage risk. This risk of the relocation of CO_2 emissions due to high allowance prices would only be eliminated if all countries took part in a global carbon pricing system leading to a uniform carbon price – whether in the form of a global ETS[17] or a global carbon tax. Therefore, the EP proposal to increase the LRF should be rejected since it is, first, unnecessary to reach the EU 2030 climate target and, second, it potentially exposes industries competing in world markets to an increased carbon leakage risk.

1.3 Free allocation of allowances and CBAM

For sectors with a risk of carbon leakage, an international level playing field is crucial when it comes to the costs which have to be borne for climate change mitigation. The reason for this is that their products are traded at the world market price and the EU manufacturers cannot pass on the cost of EU ETS I allowances to their customers ("pass-through"). If they had to pay for their allowances, they would be at a competitive disadvantage vis-à-vis manufacturers from countries that impose no or lower carbon costs on their industrial sectors. This disadvantage would be felt both on the EU internal market as regards imports, and externally as regards exports to the said countries. Until now, the EU has therefore used the allocation of "free allowances" to prevent the relocation of its production to third countries but under the Commission proposal free allowances as an instrument for carbon leakage protection will now be gradually replaced by the CBAM.

The Commission proposal does not, however, ensure firstly that the CBAM will have the same protective effect against carbon leakage as do free allowances – especially for the EU export industry.[18] Secondly, the widely voiced objections[19] to the continued allocation of free allowances are based on misconceptions which fail to

[15] EEA – European Environment Agency (2019), ETS, ESD, LULUCF and aviation emission trends and projections, 1990-2035.
[16] EU Commission (2012), Impact Assessment SWD(2012) 130 of 22 May 2012, p. 8 et seq.
[17] Bonn, M./ Menner, M. / Reichert, G. (2017), Globalising Climate Protection – Ways to world-wide harmonisation of carbon pricing, cep**Input** 07/2017.
[18] It is also doubtful whether this can be achieved through amendments to the proposal – with free allowances for exporters as envisaged by the ITRE Draft Report or as an issue still to be clarified as considered by the Council (see below).
[19] L'Heudé, W. et al. (2021), A Carbon Border Adjustment Mechanism for the European Union, Trésor-Economics 280, p. 7.

take account of the crucial details of the functioning of the EU ETS I and global trade.[20] Hence, before assessing the CBAM proposal in detail, we will first address the arguments against the allocation of free allowances.

The first misconception is that in the EU ETS I, incentives to save carbon emissions ("decarbonisation") only exist when companies actually pay a correspondingly high carbon price. This only applies to carbon taxes or carbon charges, it does not apply to trade in emission rights because even if these are allocated free of charge, a correspondingly high carbon price provides an incentive to decarbonise and then sell the free allowances that are then no longer needed on the market in order to cover the abatement costs.[21] The reason why this has so far only been happening on a small scale in industry is that the abatement costs of CO_2 emissions in many industrial sectors are far higher than the allowance prices. It is therefore cost-effective in terms of static efficiency for these sectors not to decarbonise yet, but that companies with lower abatement costs are doing so first as this allows the most cost-effective options for CO_2 reduction to be realised and at the same time the cap in the EU ETS I to be complied with. Financing decarbonisation through the sale of free allowances, however, is preferable to the unspecific granting of subsidies where the state only has a rough idea of the abatement costs because the actual abatement costs are known only to the companies. The targeted promotion of new technologies – for example by way of Carbon Contracts for Difference – may also be appropriate if this improves dynamic efficiency.

The second misconception is that industrial companies will not pass on higher carbon prices to customers ("pass-through") because they receive free allowances. However, it is international competition that prevents higher carbon prices being passed on to customers. Companies with a carbon leakage risk therefore receive free allowances precisely with the aim of ensuring that they do not suffer any disadvantages in international competition as a result of the allowance prices in the EU ETS I but, like their international competitors, do remain largely exempt from carbon costs.

A third misconception, related to this, is that too little CO_2 will be saved if consumers do not feel a price signal. This overlooks the fact that the goods produced by EU industry are subject to the EU ETS I cap whereby CO_2 emissions are effectively limited and reliably reduced over time. A price signal passed on to consumers would not therefore increase the effectiveness of the EU ETS I. It could at most have a positive impact on its efficiency if the shifts in demand – away from carbon-intensive to low-carbon products –, triggered by the change in relative prices, were to render costly reduction measures in the production of CO_2-intensive products partially superfluous.

A fourth misconception is that effective carbon leakage protection is not achievable through free allowances because the amount of free allowances available will fall significantly over time. Firstly, it is a political decision that at least 57% of the quantity of allowances issued annually must be auctioned. This provision of the EU ETS Directive can, however, be changed by the EU legislator thus eliminating the artificial scarcity of free allowances. Secondly, there is in principle nothing to prevent a very high allowance price in the future provided that the required free allowances are made available and auctioning revenues are used primarily to decarbonise industry and offset the economic burden. With high allowance prices, decarbonisation measures are also increasingly worthwhile in industries that receive free allowances. Consequently, following decarbonisation measures, more and more free allowances will also be sold and no longer used in subsequent years. This will ease the numerical relationship between free allowances and auctioned allowances.

Thus, this cannot be used to justify a purposeful reduction of free allowances. The provisions in the Commission proposal and the positions of the EP and the Council, regarding the reduction of free allowances, are misguided.

Firstly, this is because companies at risk of carbon leakage will be allocated fewer free allowances overall than before and as a result will lose some of their carbon leakage protection. This happens as a result of the further tightening of benchmarks due to higher update rates and, in the medium term, due to application of the cross-sectoral reduction factor – triggered by the combined effect of the increase in the linear reduction factor and the retained fixed share of allowances to be auctioned of 57%. Furthermore, for individual installations, this could lead to a further reduction of free allowances, if these are linked to required reductions in the course of energy audits or – in the case of the EP-Position EU ETS – if there is a failure to meet the milestones and targets of the decarbonisation plan. This will increase their costs. Thus, the carbon leakage risk will be unnecessarily increased – which will damage EU economies and may lead to an overall rise in global GHG emissions.

[20] Menner, M. (2022), CBAM: Europäisches Parlament setzt klimapolitischen Irrweg fort, cep**Aktuell** of 13 January 2022.
[21] Bonn, M. / Reichert, G / Voßwinkel, J. S. (2016), Carbon Leakage, cep**Input** 04/2016, p. 14.

Secondly, this unsustainable situation will be exacerbated by the expiry of free allowances for companies in CBAM sectors scheduled from 2026 to 2035. This is due to the fact that the proposed CBAM can only offer protection against carbon leakage to companies producing for the EU internal market.[22] Although they will then bear an increasing share of the full carbon costs of the EU ETS I, they will still be placed on an equal footing with competing importers as the latter will have to pay a corresponding carbon price ("notional ETS") levied by the CBAM on imported goods. However, EU companies exporting to third countries also have to pay the rising share of the EU ETS I allowance price, but as a result have higher carbon costs than most of their competitors on world markets which will put EU exporters of goods to third countries at a significant competitive disadvantage as no rebates are planned for EU exporters. This lack of a border adjustment for exports is apparently based on the implicit fifth misconception that European industry and the global climate are already sufficiently protected from carbon leakage by a CBAM if a CBAM only affects imports into the EU. That assumption underestimates the importance of exports for European industry and the pressure of the world market on achievable prices. It also overlooks the fact that many products are produced in third countries with even higher CO_2 emissions and therefore exports from the EU would contribute to reducing CO_2 emissions. The related sixth misconception is that a carbon border adjustment in favour of EU exporters is not compatible with WTO rules and therefore protection of EU exporters must be sacrificed "to protect the climate". All decision-makers should be aware of the fact that this would mean a conscious acceptance of the loss of European added value and employment, as well as of the rise in global CO_2 emissions, which must be communicated openly to the public instead of touting the CBAM as a means of comprehensive protection for European industry.

The claim that a CBAM, as proposed by the Commission, would protect the entire EU industry from carbon leakage risks, is therefore misleading. In this context, the EP is on the wrong track with its proposal to phase out the allocation of free allowances by 2032 – three years earlier than planned by the Commission. If no adequate solution for the exporting industries is found, the rapid abolition of free allowances will increase the carbon leakage risk instead of reducing it – to the detriment of both European industry and the global climate. In this respect the proposed solution of the EP for exports is a politically risky venture. Continuing to allocate for the time being free allowances to every installation at risk of carbon leakage, to cover the share of their emissions that corresponds to their exports, does in principle protect exporters from carbon leakage risks. However, the WTO could theoretically rule that the exclusive granting of free allowances to EU exporters as part of the CBAM is not compatible with WTO rules. These allowances could be regarded as illegal export subsidies – leaving exporters without carbon leakage protection because other rebates would be even harder to defend. This is dangerous since it might even prevent the EU from returning the current status quo without a CBAM, i.e. ensuring protection against carbon leakage by generally issuing free allowances, because any such ruling would most likely result in free allowances also being classified as incompatible with WTO rules if they are also applied to domestic producers. As a consequence, export industries would be abandoned to their fate.

Finally, due to its limited scope, a unilateral introduction of a CBAM by the EU could only make a small contribution to reducing worldwide GHG emissions. Moreover, CBAMs are rightly deemed as posing "real risks of commercial retaliation" by third countries.[23] There is considerable risk of international trade conflicts if the EU unilaterally imposes a "notional ETS".[24] Furthermore, it is argued that a unilateral introduction of a CBAM by the EU would be detrimental to climate protection, since it will weaken the willingness of countries to cooperate.[25] This even more, if as planned, the revenues of the CBAM shall be a source of "own resources" for the EU budget. In light of the growing geopolitical tensions, it is important that global climate policy is based on cooperation instead of confrontation.

Therefore, instead of reducing the number of free allowances and introducing a CBAM only for imports through a "notional ETS", EU companies threatened by carbon leakage should receive a free allocation of 100% of the benchmark emissions determined by realities and not by politics. In order to avoid application of the cross-sector correction factor, the minimum share of allowances to be auctioned must be reduced accordingly. As regards WTO compatibility, this solution is close to the status quo which so far remains unchallenged before the WTO, and could remain so if the EU drops its CBAM proposal.[26] In this respect, the deck could be reshuffled

[22] On the following see also Jousseaume, M. / Menner, M. / Reichert, G. (2021), CBAM: Damaging to Climate Protection and EU Export Industries [cep**Study** (2021), CBAM].

[23] Conseil d'analyse économique, (2017), Trade and Climate: Towards Reconciliation, Les notes du CAE n°37, pp. 9 and 12.

[24] See, e.g., John Kerry warns EU against carbon border tax, Financial Times of 12 March 2021; China says EU's planned carbon border tax violates trade principles, Reuters of 26 July 2021.

[25] Wissenschaftlicher Beirat beim BMWi, (2021), Ein CO2-Grenzaus¬gleich als Baustein eines Klimaclubs, p. 32.

[26] On the assessment that a CBAM would not be a suitable building block for a climate club if one club member uses an ETS, see Menner, M. / Reichert, G. (2021), Climate Clubs: Chances and Pitfalls [cep**Study** (2021), Climate Clubs] and Menner, M. /

by the negotiators of the Council in the Trilogue since, in its position on the Commission's CBAM proposal, the Economic and Financial Affairs Council (ECOFIN) left open the important question as to the nature and size of the reduction of free allowances in connection with the introduction of a CBAM (which – with the exception of Poland – it welcomed) and stated that it would take a position on this in the final evaluation of the Commission's proposal on the EU ETS.[27] Still, this will require the Council to recognise the danger posed by the Commission's proposed path for the EU export industry and – in view of concerns about the CBAM in light of WTO rules – for the continuation of carbon leakage protection by way of free allowances for the entire EU industry.

However, if the EU insists on CO_2 costs being passed on to the EU consumer, it could consider a Carbon Consumption Tax (CCT) as an alternative to the CBAM. This levied on products consumed in the EU from sectors at risk of carbon leakage irrespective of whether they originate from the EU or third countries.[28] Thus, both importers and domestic manufacturers producing for the EU internal market have to pay the CCT equally. This gives consumers a carbon price signal and creates a level playing field for manufacturers – and is therefore compatible with applicable WTO rules.[29] In the context of a climate club supported by the Council[30], such a tax can also prevent carbon leakage within the club if the tax rate corresponds to the minimum price agreed in the club – and this "climate tax" is levied on domestic producers producing for the EU internal market, on imports from countries outside the club and on exports to other club members.[31] This allows both trading within the club at the minimum price without border adjustment and a level playing field for countries outside the club – even if the EU ETS price is higher than the agreed minimum price.[32] Hence, the free allocation of allowances in combination with a VAT-like Carbon Consumption Tax (CCT) as a substitute for the CBAM would render a more suitable form of carbon border adjustment. Since this approach is non-discriminatory, it is WTO-compatible and does not give rise to trade conflicts. Moreover, it is compatible with a Climate Club that is based on an explicit or implicit minimum carbon price and can prevent carbon-leakage risks both within and outside the club.[33]

1.4 Scope of the EU ETS I

The controversial extension of the scope of the EU ETS I to include maritime transport[34] in relation to all emissions from journeys within the EU and half of the journeys to and from the nearest port outside the EU, may increase the price of EU ETS I allowances. However, the effect is likely to be small, regardless of the fact that the sector's demand is not fully covered by additional allowances. This is because the additional demand from shipping companies only accounts for a small proportion of the total quantity of allowances in the system. It will not, therefore, lead to a severe shortage of allowances in the EU ETS I. By contrast, establishing a separate EU ETS II for the road transport and buildings sectors – instead of including them in the existing EU ETS I – will protect the EU ETS I sectors against higher carbon leakage risks. This is because the demand for allowances from the road transport and buildings sectors, which is more significant in terms of volume and relatively price-rigid ("inelastic"), will not then be able to influence the price of EU ETS I allowances.[35]

The planned extension of the scope of the EU ETS I to installations that reduce their thermal input to below the 20 MW threshold, due to GHG avoidance measures, may put them on an equal footing with installations that are just over this threshold, as both will then continue to receive EU ETS I allowances free of charge. Overall, however, it is preferable to offer an "opt-in" to all installations below 20 MW, not just to those which no longer meet that threshold, and thus provide them with a level playing field. This would also exempt small industrial

Reichert, G. (2022), 'Carbon Leakage-Proof' Climate Clubs, in: Österreichische Nationalbank (OeNB) / Wirtschaftskammer Österreich (WKÖ), Reglobalisation: Changing Patterns, Schwerpunkt Außenwirtschaft 2021/2022, pp. 285 et seq.

27 Economic and Financial Affairs Council (ECOFIN) of 15 March 2022, Draft regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism – General approach.

28 See Neuhoff, K. et al. (2016), Ergänzung des Emissionshandels: Anreize für einen klimafreundlicheren Verbrauch emissionsintensiver Grundstoffe, DIW Wochenbericht No. 27/2016, 6 July 2016; Pollit, H. / Neuhoff, K. / Lin, X. (2019), The impact of implementing a consumption charge on carbon-intensive materials in Europe, Climate Policy, Vol. 20, Supplement 1; Ismer, R. / Neuhoff, K. / Pirlot, A. (2020), Border Carbon Adjustments and Alternative Measures for the EU ETS: An Evaluation, DIW Discussion Papers 1855.; cep**Study** (2021), CBAM.

29 cep**Study** (2021), CBAM, Section 5.2.1.1.3.

30 Report ST 6978/22 of the Permanent Representatives Committee (Coreper) to the Economic and Financial Affairs Council (ECOFIN) of 12 March 2022, Regulation establishing a carbon border adjustment mechanism – General approach, No. 12 and Annex, No. 3.

31 cep**Study** (2021), Climate Clubs, Section 7.1.

32 Ibid.

33 Ibid.; Menner, M. / Reichert, G. (2022), 'Carbon Leakage-Proof' Climate Clubs, in: Österreichische Nationalbank (OeNB) / Wirtschaftskammer Österreich (WKÖ), Reglobalisation: Changing Patterns, Schwerpunkt Außenwirtschaft 2021/2022, S. 285 ff.

34 See on this Menner, M. / Reichert, G. (2021), Emissionshandel für Seeverkehr – Kritik an geplantem EU-Alleingang, cep**Input** 8/2021.

35 Menner, M. / Reichert, G. / Voßwinkel, J. S. (2019), Wirksame CO_2-Bepreisung, cep**Studie**, Abschnitt 5.2.2.3.

and commercial installations in Germany, and in future also in Austria, from the additional burden of the respective national ETS.[36] This is all the more important as the proposed EU ETS II, which would only cover GHG emissions from road transport and buildings, but not those from small industrial and commercial installations, does nothing to change the fact that German and Austrian small-scale industry would continue to be disadvantaged in the EU internal market. Hence, at least the EP proposal to request the Commission to come up with a legislative proposal for an opt-in should find its way to the EU ETS Directive. Alternatively, if the EU ETS II were to be extended to small industrial and commercial installations, carbon leakage protection equivalent to the EU ETS I would have to be established.

1.5 Market Stability Reserve (MSR)

There is no need to further reduce the supply of allowances by increasing the rate at which they are placed into the Market Stability Reserve and thereby provide more predictability in carbon prices. Firstly, it is not the level of the allowance price but the quantitative limitation of the cap that ensures effective decarbonisation in the EU ETS I sectors. Secondly, the MSR was originally designed in a time of an oversupply of allowances and very low allowance prices. It should at least temporarily lower the cap and thus increase the allowance price in order to create sufficient incentives for investments in low-carbon technologies.[37] However, as the rapid reduction of the cap, based on the higher linear reduction factor, further reduces the availability of allowances, rising allowance prices are likely, which would make any efforts to stabilise prices from below – such as in the form of a minimum price for allowances or the cancellation of allowances by Member States – unnecessary.

1.6 Modernisation Fund and Innovation Fund

Support for low per capita income Member States, such as an expanded Modernisation Fund, increases the willingness of such Member States to support a reformed EU ETS I, allowing it to remain an effective and efficient EU-wide instrument for climate change mitigation. As "poorer" Member States are particularly affected by the current energy price crisis, they might be willing to support reforms to tighten the EU ETS I in return for more resources to protect their citizens from energy price increases.

Increasing the Innovation Fund is in the general interest, as research and development (R&D) is crucial for the technological innovation that is urgently needed to decarbonise the economy. Without public support, private companies will not invest sufficiently in R&D, as they themselves will not reap all the benefits of the positive societal effects generated ("spill-over"), even though they bear the full costs of the investment ("positive externality").[38]

1.7 Use of the auction revenues

Using auction revenues to reduce distortionary taxes and provide financial support to low and middle-income households will have a positive impact on domestic demand and labour supply, especially if a reduction in distortionary social security contributions is also considered.[39] This will offset some of the negative effects of higher final and intermediate product prices on demand and economic activity. These price increases result from carbon pricing being applied to many commodities due to the phasing out of free allowances in conjunction with the proposed CBAM.

Using revenues to reduce distortionary taxes and social security contributions, should in contrast to the amendments of the EP be explicitly allowed in line with the Commission proposal, since it is preferable to allocating them as own resources of the EU budget or using them to finance subsidies for the decarbonisation of industry. This is because of the positive effects on demand and labour supply and, from an equity perspective, because it is better to finance the EU budget and Member States' spending plans mainly by progressive national tax revenues than by regressive consumption taxes, as represented by carbon pricing without redistribution.[40]

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[36] For a description and evaluation of German fuel emissions trade see Menner, M. / Reichert, G. (2019), Der neue deutsche Emissionshandel, cep**Input** 10/2019.

[37] EU Commission (2014), Proposal COM(2014) 20 of 22 January 2014 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme; see cep**PolicyBrief** 22/2014.

[38] Menner, M. / Reichert, G. / Voßwinkel, J. S. (2017), Aus weniger mehr machen. Eine Kritik des EU-Energieeffizienzrechts und seiner geplanten Reform, cep**Input** 01/2017, Section 3.1.

[39] Heady, C. J. et. al (2000), Study on the relationship between environmental/energy taxation and employment creation; Markandya, A. (2012) Environmental Taxation: What Have We Learnt in the Last 30 Years?, in: Castellucci, L. / Markandya, A. (eds.), Environmental Taxes and Fiscal Reform. Central Issues in Contemporary Economic Theory and Policy.

[40] Anderson, J. / Atkinson, G. (2020), The distributional effects of a carbon tax: The role of income inequality.

2 Legal Assessment

Unproblematic. The EU can take measures to mitigate climate change (Art. 194 (1) (c) TFEU).

E. Conclusion

The EU ETS is an effective and efficient instrument for reducing GHG emissions. The tightening of the linear reduction factor (LRF) from 2.2% to 4.2% is unavoidable, and the one-off reduction of the cap justifiable, if the gradual reduction in the cap is to be adapted to the EU's new GHG reduction targets. To increase the LRF as proposed by the EP – meaning a reduction of 63% instead of 61% in the EU-ETS I sectors – is not necessary to reach the EU 2030 climate target and puts a higher burden on industries than necessary. As long as not enough countries worldwide participate in the reduction of GHG emissions, a significant carbon leakage risk will exist. For sectors with a risk of carbon leakage, an international level playing field is crucial when it comes to the costs which have to be borne for climate change mitigation.

The provisions in the Commission proposal and the amendments by EP and Council, regarding the reduction of free allowances, are misguided. This is firstly because companies at risk of carbon leakage will be allocated fewer free certificates overall than before and as a result will lose some of their carbon leakage protection. Thus, the risk of carbon leakage will be increased unnecessarily. Secondly, the proposed expiry of free allowances in CBAM sectors will put EU exporters of goods to third countries at a significant competitive disadvantage if no suitable solution is found for EU exporters.

The continued granting of free allowances only to exporters as proposed by the EP is a politically risky venture since this might be classified as an illegal export subsidy by the WTO. Thereafter, other forms of export refunds are even less likely to be acceptable. Even a return to the status quo without CBAM could prove impossible if free allowances have been negatively assessed by the WTO. This would leave the export industry in the EU to its fate. Moreover, the unilateral introduction of the CBAM risks trade conflicts, especially if the revenues are earmarked for the EU budget as planned. In view of the geopolitical tensions, the EU should base its climate policy on global cooperation instead of conflict-prone unilateral moves.

Therefore, instead of introducing a CBAM the EU should modify the well-functioning and yet legally unchallenged status quo by granting to all EU companies threatened by carbon leakage the free allocation of 100% of the benchmark emissions. In combination with a VAT-like carbon consumption tax (CCT) this would render a more suitable form of carbon border adjustment. This is because this approach is non-discriminatory, therefore WTO-compatible and does not give rise to trade conflicts. Moreover, it is compatible with a Climate Club that is based on an explicit or implicit minimum carbon price, and it can prevent carbon-leakage risks within and outside the club.

The controversial inclusion of maritime transport may increase the price of EU ETS I allowances although the effect is likely to be small. Establishing a separate EU ETS II for the road transport and buildings sectors will protect the EU ETS I sectors against higher carbon leakage risks. It is preferable to offer an "opt-in" to all installations that are below the 20 MW – as now also suggested by the EP rather than just to those which no longer meet that threshold. This would also exempt small industrial and commercial installations in Germany and Austria from the additional burden of the respective national ETS, which would continue to put German and Austrian small-scale industry at a disadvantage in the EU internal market. There is no need to further reduce the supply of allowances by increasing the rate at which they are placed into the Market Stability Reserve because rising allowance prices make any efforts to achieve price stability unnecessary. An extended modernisation fund will increase the willingness of Member States with low per capita incomes to support a reformed EU ETS I. Increasing the Innovation Fund is in the general interest, as private companies are not investing enough in R&D. Reducing distortionary taxes and social security contributions is preferable to using EU-ETS I revenues for own EU resources of the EU budget or for subsidizing decarbonisation efforts. This has positive effects on acceptance and distributive justice as well as on demand and labour supply.