ERCST

Revision of the state aid guidelines in the context of the EU ETS: issues and options

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Structure of the meeting

- Short background, followed by
- Two roundtables
  - Each on a set of key issues with regards to the revision of the state aid guidelines
  - Roundtable 1
    - Level playing field and distortions to the internal market
    - Interaction with Member State politics and priorities
    - Interactions with energy markets and renewable energy supply
    - Adaptability to changes and shocks
  - Roundtable 2
    - Eligibility criteria
    - Setting of key variables

Background

- We will focus on indirect cost compensation
  - Combat carbon leakage
  - Voluntary Member State level schemes to be assessed by EC
  - EU level guidelines that MS must apply
    - To limit risk of distortion to EU internal level playing field
    - Member States can implement more stringent restrictions than State aid guidelines
- We see four main principles that need to be balanced:
  1. Carbon leakage risk mitigation ***(Raison d'être)***
  2. Limit risk of overcompensation and potential windfall profits
  3. Limit risk of internal market distortions within, and between, sectors
  4. Incentivize cost efficient decarbonization

Background: direct vs. indirect cost

- Similar effects on competitiveness
- Dealt with differently
  - Direct cost
    - Free allocation
    - Centralised EU approach
    - Full compensation (at benchmark level)
    - Based on carbon costs (direct+indirect) in Phase 3
  - Indirect cost
    - Cash
    - Fragmented and voluntary MS approach with EU ground rules
    - Compensation limited and degressive (at benchmark level)
    - Based on indirect costs

Background – Phase 3 EU ETS

Compensation and guidelines have different goals

- Indirect cost compensation is meant to tackle carbon leakage concerns

- State aid guidelines themselves are meant to address competition concerns and potential internal market distortions

Background – Phase 3 EU ETS

- Eligible sectors are defined using criteria
- Quantitative criteria for automatic addition to list
  - Intensity of trade with third countries is above 10%
  - Indirect costs would lead to a substantial increase in production costs (as a proportion of the gross value added) of at least 5%
    - Both need to be fulfilled
- Qualitative criteria for 'borderline sectors'
  - Sectors with missing or low quality data
  - Sectors 'considered to have been insufficiently represented by qualitative assessment'

Background – Phase 3 EU ETS (2)

- Qualitative criteria
  - Indirect costs were above 2,5% of GVA at sectoral level
  - The sector deemed unable to pass on indirect costs to customers without losing significant market share to third countries
    - translated as a trade intensity of higher than 25% and proof that the sector concerned was a 'price-taker'
  - Fuel and electricity exchangeability for products in the sectors was also taken into account

- Not stated in guidelines which sectors were included through quantitative/qualitative assessment

Background – Phase 3 EU ETS (2)

- 13 sectors and 7 subsectors were eligble
  - Includes various non-ferrous metals, textiles, chemicals, paper, basic iron and steel, plastics, and a number of mining sectors

Aluminium	Mining of chemical and fertiliser mineral	Other inorganic chemicals	Lead, zinc and tin
Leather cloths	Basic iron and steel and of ferro-alloys, including seamless steel pipes	Paper and paperboard	Fertilisers and nitrogen compounds
Copper	Other organic basic chemicals	Spinning of cotton-type fibres	Man-made fibres
Mining of iron ores	Low-density polyethylene	Linear low-linear polyethylene	High-density polyethylene
Polypropylene	Polyvinyl chloride	Polycarbonate	Mechanical pulp

Background – Phase 3 EU ETS (3)

- In 2017: 10 Member State Schemes (694 million euros in total)

Member State	Duration of the scheme	Compensation disbursed in 2017 for indirect costs incurred in 2016 (in million EUR)	Number of beneficiaries (installations)	Auction revenue 2016 (in million EUR)	Percentage of auction revenues spent on indirect cost compensation
UK[31]	2013 - 2020	19[32]	95	419	4,6%
DE[33]	2013 - 2020	289	902	846	34,1%
BE (FL)[34]	2013 - 2020	46,7	107	107	43,6%
NL[35]	2013 - 2020	53,5	92	145,5	37%
EL[36]	2013 - 2020	12,4	52	147	8,4%
LT[37]	2014 - 2020	1	1	21	4,8%
SK[38]	2014 - 2020	10	5	65	15,4%
FR[39]	2015 - 2020	140	296	231	60,0%
FI[40]	2016 - 2020	38	55	71	40,0%
ES[41]	2013 - 2020	84	136	365	23%

Source: EC 2018 Report on the Functioning of the EU Carbon Market

- In 2018: two additional Schemes approved (LU and Wallonia)

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Background – Phase 3 EU ETS (4)

Interaction with Art. 10c

- Does 10c investment also mitigate carbon leakage risk related to indirect costs?
- 10c in Phase 3 was subjected to specific state aid rules
  - EC also issued a guidance document on application of 10c
  - Laid out objectives of use ('increased environmental protection', 'retrofitting and upgrading of infrastructure', 'diversification of energy mix'); defined eligible costs; defined max aid intensity
  - Many of these rules are already laid out in Phase 4 Directive, which also stipulates the use of a competitive bidding process
- Will Modernisation Fund and Art 10c. be subject to state aid rules in Phase 4?

Background – California

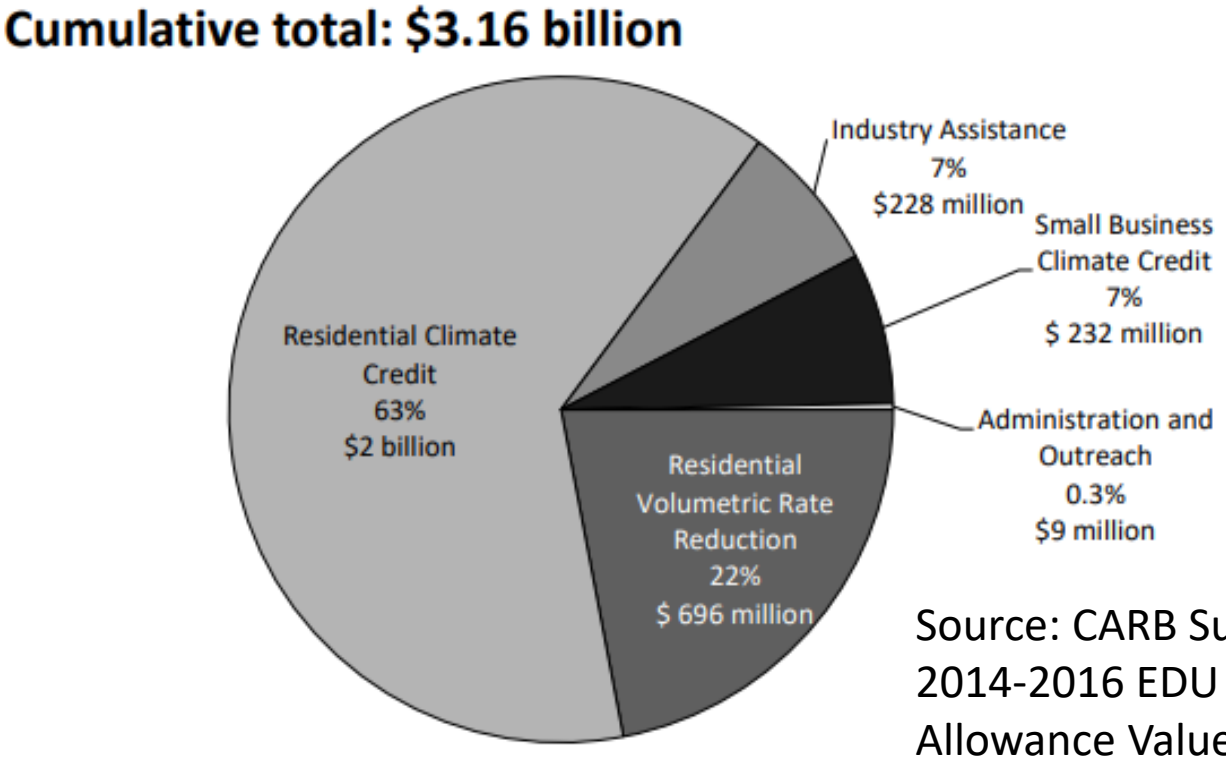
- California cap-and-trade also addresses indirect costs
- Investor owned electrical distribution utilities receive allowances 'on behalf of ratepayers'
  - These allowances ("Allowance Allocation") must be offered up for auction
- Revenues to be used:
  - For the benefit of ratepayers (households, small business & emission-intensive trade-exposed industry)
  - To decrease emissions (RE and EE) – max 15%
    - Not used up to 2016, but from then on some investment in PV for residential areas

Background – California

- These allowances are around 25% of each year's cap
- Value over 2014-2016 period: USD 3,16 billion
- Industry deemed to need 'industrial assistance' for direct costs is also eligible for this compensation
  - Includes: petroleum and natural gas extraction; cement, glass, and paper production; petroleum refining; steel manufacturing; and food processing

Background – California (2)

- Utilities can either send rebates to, or decrease prices for (types of) consumers.



Source: CARB Summary of Vintage 2014-2016 EDU Allocated Allowance Value Usage

Notes:

- **Covers 2014-2016**
- **Covers six Investor-owned Utilities**

Background – Revision of guidelines

- Revision NOT review: Guidelines could change significantly
- However, some things set in stone in ETS Phase 4 Directive
  - MS ‘shall seek’ to use no more than 25% of auctioning revenues or must publish a report explaining why they exceeded that percentage
  - Ex ante (sub-)sectoral benchmarks to be used for calculation of carbon leakage risk
    - Benchmarks based on electricity consumption per unit of production using most efficient available technologies and CO2 emissions of relevant EU electricity production mix
  - EC to assess impacts of indirect cost compensation on internal market in annual ETS report
    - And ‘where appropriate’ recommend measures to limit such effects

Background – Revision of guidelines (2)

- EC Criteria for the revision
  - Effectiveness
  - Efficiency
  - Relevance
  - Coherence
  - EU added value of the guidelines
- However, how these criteria are defined and used is unclear

- New guidelines to be ready by Q3 2020 and enter into force by start Phase 4
- Draft guidelines to be discussed in MS consultation in Autumn 2019

Background – Revision of guidelines (3)

- Two public consultations ongoing
  - Consultation of Interested sectors (deadline April 9th)
  - Public consultation (deadline May 16th)
- Future work ERCST
  - May 8th: roundtable
    - Feedback from Sectoral consultation
    - Presentation of positions for public consultation
  - April/May: Paper on Issues and Options
  - September 19th: roundtable
    - Discussion of draft guidelines

Issues and Options

- Two roundtables
  - Each on a set of key issues with regards to the revision of the state aid guidelines
  - Each started with short ERCST presentation
    - Background on the issue
    - Food for discussion on way forward
  - Followed by focused presentations from panelists

Roundtable 1

- “More ‘macro’ issues”

- Level playing field and distortions to the internal market
- Interaction with Member State politics and priorities
- Interactions with Energy markets and renewable energy supply
- Adaptability to changes and shocks

Issues and Options – Level playing field

Background

- One of the major issues with current indirect cost compensation
- Voluntary nature could create distortions between:
  - Same sector in different EU countries
  - Substitutes
- Note: DG Clima Impact Assessment during EU ETS Phase 4 revision assessed reasons for MS (then six) to have compensation schemes
  - Factors assessed: electricity prices and increases thereof, tax levels on electricity, share of electricity-intensive industries and political reasons
  - Only potential political reasons could be identified as reasons behind indirect cost compensation schemes

Issues and Options – Level playing field

Issues for discussion

- How can we level the playing field, minimise distortions to internal market and promote comparable and coherent compensation across MS?
  - Option 1: no indirect cost compensation
  - Option 2: same and mandatory state aid rules for all MS

- Two main options are both not feasible
  - Option 1: extra-EU competitiveness concerns not addressed at all
  - Option 2: MS will not likely relinquish right to choose whether to give compensation and to which sectors

Issues and Options – Level playing field

Issues for discussion

- So how can we mitigate concerns?
  - Option 3: Hard limit on compensation
    - Current soft limit (25% of auction revenues) was breached by 4 out of 10 MS in 2017 (Finland and Flanders at or above 40%, France at 60%)
    - Hard cap with respect to MS GDP contribution electro-intensive sectors?
      - Current soft cap is biased towards MS with higher auctioning revenues: no link with indirect cost exposed sectors
  - Option 4: All MS to give a mandatory minimum
    - MS can go beyond minimum level
  - Option 5: ensure coherence between MS that do grant compensation
    - Same criteria and formula to be used in all schemes
- None of these options sufficiently address concerns while being politically feasible

Issues and Options – interaction with MS priorities

Issues for discussion

State aid interacts strongly with MS level politics and priorities

- What happens if MS priorities and availability of resources change over time?
  - CSCF for indirect cost compensation? Or drop sectors from MS schemes?
- How can risk of increased defragmentation be mitigated (link with previous issue)?
  - Member States apply for their self-designed schemes
  - While based on guidelines, they are only considered the minimum
- Should indirect cost compensation count towards Art 3(d)4 of the ETS Directive?
  - 'All Revenues generated from the auctioning of allowances should be used to tackle climate change'

Issues and Options – interaction with renewable energy

Issues for discussion

- Current guidelines state that no state aid can be granted 'in case of electricity supply contracts that do not include any CO2 costs'
  - If electricity prices are set through merit order, then 100% renewable contracts also pass through 'opportunity' CO2 costs
  - How does this relate to renewable electricity potentially becoming marginal plants?
  - Some anecdotal evidence that this has disincentivized industry to engage in 100% RE contracts as they miss out on state aid
    - Perverse incentive that needs to be addressed!
- If installations integrated with RE installations are eligible
  - Means installations are compensated for opportunity costs

Issues and Options – interaction with energy market

Issues for discussion

- How does indirect compensation interact with long-term electricity contracts?
  - How prevalent are such contracts currently?

- Which effects has indirect cost compensation had on electricity markets?
  - Incentives to use renewable energy for industry?
  - Impacts on price setting by utilities?

Issues and Options – adaptability to changes and shocks

Issues for discussion

- Recurring theme during roundtable 1 and 2
- Current guidelines are very static
  - Benefit of transparency and predictability
- However, setting data, lists of sectors etc in stone ensures that future evolutions cannot be taken into account
  - Decarbonisation of EU electricity production
  - Electrification of industrial sectors
  - Climate action by international partners
    - Phase 4 Directive: Commission should consider indirect cost compensation in light of climate policies in other major economies
- 2030 could be very different to 2019
- How can we keep indirect cost sufficiently flexible yet predictable
  - Is a mid-term review an effective and sufficient tool?

Roundtable 2

- Eligibility criteria
- Setting of key variables
  - Proportionality of aid
  - CO2 emissions factor
  - Base year for production
  - EUA prices
  - Product-specific electricity consumption efficiency benchmark

Issues and Options - Eligibility criteria

Issues for discussion

- Criteria determine who is on the EU-level list
  - EU MS could add more stringent criteria if deemed too wide/expensive

- Two main options:

Focused list vs. ***Broad list***

Issues and Options - Eligibility criteria

Issues for discussion

- Broad List
  - Could be done by using same carbon leakage list for both schemes, however:
    - Difference between emission intensity and electricity intensity is relevant
    - Installations not covered by EU ETS could face significant indirect costs
  - Limited financial resources would be spread over more sectors
    - Potential for undercompensation
    - Compensation comes from MS treasuries – are MS willing to commit to payments for wide range of sectors for 10 years without size of payments being predictable?

Issues and Options - Eligibility criteria

Issues for discussion

- Focused List
  - Only sectors for whom indirect costs are matter of survival
    - How should 'matter of survival' be defined and operationalized?
  - Less sectors between which limited financial resources would be shared
    - Less potential for overcompensation
    - Undercompensation less likely
  - Could be done by using Prodcom for definition of sectors
    - NACE as fall back position
- Supported by two principles for revision
  - Effectiveness and efficiency

Issues and Options - Eligibility criteria

Issues for discussion

- Choice on focused vs. broad would determine quantitative and qualitative assessment criteria
  - Currently criteria are trade intensity and indirect costs as percentage of GVA
- Setting thresholds lower or combining both into one broadens list
- Continued use of non-transparent qualitative assessment broadens list
  - Combining quantitative criteria into one and using qualitative assessment potentially leads to very broad list
- **In the end it is a political choice**

Issues and Options - Eligibility criteria

Issues for discussion

Commission indicates possibility of 'additional criteria'

- Example of energy efficiency and participation in national energy management systems
  - However:
    - EE is already covered by a Directive
    - Sectors already have strong incentives to invest in EE
    - Penalise those that invested heavily in the past
- 'Price-taker' criteria
  - Currently used in qualitative assessment
  - All industrial sectors are price-takers to some degree: need for assessment of 'level of price-taking'

Issues and Options - Eligibility criteria

Issues for discussion

- Renewable energy criteria
  - Necessity of consuming percentage of RE or RES expenditure?
    - Technology neutrality?
    - Overlap with RE Directive and MS policies

- Other criteria that could be envisaged?

Issues and Options - Eligibility criteria

Issues for discussion

- Member States will all need to resubmit a scheme for Phase 4
  - As mentioned before: if individual MS think list is too broad, will they add additional criteria?
    - Even more fragmentation of indirect cost compensation?
- Should list and criteria be reviewed during Phase 4?
  - In 2030 world could be very different and on 1,5°C pathway
  - Mid-phase review to start in 2023?
  - Link with regulatory predictability and investment cycles

Issues and Options – Setting of key variables

Background

- Compensation for installations is limited by 'maximum aid intensity'

$$\boldsymbol{Amax_t = Ai_t * C_t * P_{t-1} * E * BO}$$

$\boldsymbol{Amax_t}$ is the maximum aid intensity in year t
$\boldsymbol{Ai_t}$ is the aid intensity at year t, expressed as a fraction which decreases over time and is set at 75% for 2019-2020
$\boldsymbol{C_t}$ is the applicable CO_2 emission factor (tCO_2 /MWh) (at year t);
$\boldsymbol{P_{t-1}}$ is the EUA forward price at year t-1 (EUR/tCO_2);
$\boldsymbol{E}$ is the applicable product-specific electricity consumption efficiency benchmark; and
$\boldsymbol{BO}$ is the baseline output.

(for those not covered by fall-back benchmarks)

- Continued use of (comparable) function seems likely
  - However, variables might need to be revised and adapted

Key variables – Proportionality of Aid

Background

- Formula for 'maximum aid intensity' sets that compensation cannot be given at 100% level
  - Ai_t currently set at 75%

- Option of full compensation seems to not be deemed realistic by many stakeholders
- So how will partial compensation evolve during Phase 4?

Key variables – Proportionality of Aid

Issues for discussion

- Option 1: Continue slope from current guidelines
  - Would reach 50% by 2030
- Option 2: decrease faster and Option 3: decrease slower
  - All carbon leakage risk protection mechanisms are meant to be temporary, however what would this mean post-2030?
  - What is the impact on investment decisions (investment horizon for many industries is beyond the end Phase 4)?
- Option 4: remain constant
  - Decreasing aid proportionality and increasing EUA prices would mean uncompensated cost rising significantly
  - 85% for charges on electricity to support RE from Energy and Environment State Aid Guidelines (2014-2022)
    - But: set to be revised by 2022 + related to national measures (RES)
  - However, in the past DG Comp highlighted degressive nature of all state aid to avoid aid dependency: is this still a priority?

Key variables – Proportionality of Aid

Issues for discussion

- Option 5: tiered approach
  - Using tiers to determine how sectors are compensated dependent on vulnerability of sector and risk of carbon leakage
  - Most vulnerable sectors see no or slower decrease
  - Helps ensure effectiveness and efficiency of state aid
  - Considered and *(for ERCST)* regrettably rejected during Phase 4 free allocation discussion
- What starting point should be used for each of the options?
  - Endpoint of current guidelines (75%)
  - Energy and Environment state aid guidelines (85%)
  - Other?

Key variables – CO2 emissions factor

Background

- Currently defined as ‘maximum regional CO2 emission factors’ based on
  - Emissions from and electricity produced by fossil fuelled power plants in a given region
    - Weight determined by energy mix
  - Regions defined by zones
    a. which consist of submarkets coupled by power exchanges, **OR**
    b. within which no declared congestion exists
    - **AND**: hourly day-ahead power exchange prices within the zones showing price divergence in euros (using daily ECB exchange rates) of maximum 1 % in significant number of all hours in a year

Key variables – CO2 emissions factor

Background

- In the Maximum Aid Intensity formula, it is defined as a non-fixed variable (C_t)
  - Intended to change over time (t)

- However: it was set in Annex IV of the guidelines as a fixed variable for 2013-2020

Key variables – CO2 emissions factor

Current maximum regional CO2 emission factors (tCO2/MWh)

Region	Member States	CO2 emissions factor
Iberia	Portugal, Spain	0,57
Nordic	Denmark, Sweden, Finland, Norway	0,67
Central-West Europe	Austria, Belgium, France, Germany, Netherlands, Luxembourg	0,76
Czechia and Slovakia	Czechia and Slovakia	1,06

Other Member States constitute regions on their own

Country	CO2 emissions factor	Country	CO2 emissions factor
Ireland	0,56	Hungary	0,84
United Kingdom	0,58	Malta	0,86
Italy	0,60	Poland	0,88
Latvia	0,60	Slovenia	0,97
Lithuania	0,60	Romania	1,10
Cyprus	0,75	Estonia	1,12
Greece	0,82	Bulgaria	1,12

Key variables – CO2 emissions factor

Issues for discussion

- Option 1: continued use of regional factors
  - Logic to combine marginal price setting with regional interconnections
  - However:
    - What if fossil fuelled power is all but phased out in a region (is this a distinct possibility by 2030)?
    - Will carbon intensive plants remain marginal price-setting plants till 2030?
  - Need to update: start of Phase but also during Phase

Key variables – CO2 emissions factor

Issues for discussion

- Option 2: National factors
  - Ignores any interconnections
- Option 3: Uniform EU factor
  - Assumes full interconnections, while Energy Union targets are not expected to be reached by 2020
- Option 4: Marginal regional emissions factor
  - Regional emissions factor defined by 'marginal price-setting plants'
    - Is ETS price (one of) the main drivers of the electricity price?
    - Which plants will be marginal plants by 2030?
  - Would need to be reviewed frequently – how feasible is this in terms of administrative burden?

Key variables – CO2 emissions factor

Issues for discussion

- Whichever option is chosen, need for flexibility
  - Electricity markets and production *could* look very different by 2030
    - Carbon intensity of electricity
    - Interconnections
    - Storage
    - …

Key variables – Base year for production

Background

- Currently: average 2005-2011
  - With limited flexibility to exclude years
  - Historic average can be updated in case of significant capacity extensions
  - Reducing production leads to reduced compensation
    - 50% - 75% reduction leads to 50% compensation
    - 75% - 90% reduction leads to 25% compensation
    - More than 90% reduction in production leads to no compensation

- Option 1: continuation of current system with updated base years

- Option 2: dynamic updating of activity levels
  - Dynamic free allocation due to production level changes is currently under discussion
    - Rolling two-year average changes by 15% compared to historic activity levels
  - Same principles could be applied here
    - Ideally as dynamic as feasible

Key variables – EUA prices

Background

- Currently: EUA forward prices
  - Simple average of the daily one-year forward EUA prices (closing offer prices) for delivery in December of the year for which the aid is granted, as observed in a given EU carbon exchange from 1 January to 31 December of the year preceding the year for which the aid is granted.
  - For example, state aid for 2017 was granted in 2018, but based on average of dec17 prices throughout 2016

Key variables – EUA prices

Issues for discussion

- Option 1: continue with current mechanism
- Option 2: use weighted 3-year average of forward prices
  - Fit more closely with hedging strategies and electricity price setting
  - Does this sufficiently address potential for under- and overcompensation?

Key variables – Product-specific electricity consumption efficiency benchmark

Background

- Currently: MWh/tonne of product
  - Defined using most electricity-efficient means of production
- Benchmarks to be updated during phase 4
  - Fall-back electricity consumption efficiency benchmark
    - Where electricity consumption efficiency benchmarks are not applicable, fall back benchmark is used, together with baseline electricity consumption
    - Not clear how many sectors would need a fall-back benchmark

Key variables – Product-specific electricity consumption efficiency benchmark

Issues for discussion

- Phase 4 ETS already mandates that benchmarks for electricity consumption per unit of production should be based on most efficient available technologies

- Possible alternative: average of 10% most efficient producers

Overview indirect cost compensation vs. free allocation

Variable	Current indirect cost state aid guidelines	Phase 3 Free allocation (2015-2020)	Phase 4 Free allocation
Eligibility criteria	Quantitative (trade intensity **and** indirect cost as % of GVA) and qualitative	Quantitative (direct + indirect costs as % of GVA **and/or** trade intensity) and qualitative	Quantitative (trade intensity * emission intensity) and qualitative
Proportionality of aid	Max 85 % of costs 2013 - 2015, 80 % 2016 - 2018 and 75 % 2019 - 2020.	For industry deemed at risk of carbon leakage: 100% Industry not deemed at risk: 80% in 2013 to 30% in 2020	For industry deemed at risk of carbon leakage: 100%, Industry not deemed at risk: foreseen to be phased out after 2026 from a maximum of 30% to 0 by 2030
Base year for production/ capacity	Average production at the installation over the reference period 2005- 2011. Thresholds: changes of 50-75%, 75-90% and over 90% result in changed compensation. Significant capacity changes taken into account.	Average installed capacity of 2 highest months of production 2005-2008. Thresholds: changes of 50-75%, 75-90% and over 90% result in changed compensation. Significant capacity changes taken into account.	Historical activity level (HAL): Average of annual production 2014-2018 for 2021-2025; 2019-2023 for 2026-2030. If two year rolling average has changed more than 15% compared to HAL: production level is revised
Benchmarks	Product electricity-intensity benchmark set by most electricity-efficient methods of production	Product emissions-intensity benchmarks set by top 10%	Product emissions-intensity benchmarks set by top 10%, with an annual reduction rate