

## **Guidelines on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post 2021<sup>\*</sup>**

### **CONSOLIDATED VERSION<sup>\*1</sup>**

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<sup>\*</sup> These Guidelines correspond to the European Commission Guidelines on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post 2021 adopted on 21 September 2020 (OJ C 317, 25.9.2020, p. 5).

<sup>\*1</sup> *Consolidated version as supplemented by Decision 010/22/COL. See point 15, number 15; point 28, point (b); the table in Annex I, the description of the sector covered by the NACE code 20.16.40.15; Annex II, and Annex III, footnotes \*, <sup>\*1</sup> and <sup>\*2</sup>, and the numerical data in the third column of the table. The amendments are shown in italicized text.*

*This document is meant purely as a documentation tool and the Authority does not assume any liability for its contents. It is without prejudice to the official text as published in the Official Journal.*

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## INTRODUCTION

1. In order to prevent State aid from distorting competition within the European Economic Area (“EEA”) and affecting trade between the Contracting Parties to the EEA Agreement in a way which is contrary to the common interest, Article 61(1) of the EEA Agreement lays down the principle that State aid is prohibited unless it falls within the categories of exceptions laid down in Article 61(2) of the EEA Agreement or is declared by ESA compatible with the functioning of the EEA Agreement pursuant to Article 61(3) thereof. Articles 49 and 59(2) of the EEA Agreement and Article 1(2) of Part I of Protocol 3 to the Agreement between the EFTA States on the Establishment of a Surveillance Authority and a Court of Justice (“Protocol 3”) also provide for conditions under which State aid is or may be considered compatible with the functioning of the EEA Agreement.
2. On the basis of Article 61(3)(c) of the EEA Agreement, ESA may consider State aid to facilitate the development of certain economic activities compatible with the functioning of the EEA Agreement, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.
3. Directive 2003/87/EC of the European Parliament and of the Council<sup>1</sup> established a system for greenhouse gas emission allowance trading within the Union (“the EU ETS”), in order to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner. Directive 2003/87/EC was amended in 2018<sup>2</sup> to improve and extend the EU ETS for the period 2021-2030.
4. On 11 December 2019, the Commission published the European Green Deal Communication<sup>3</sup>, outlining the policies to achieve climate-neutrality in Europe by 2050 and to address other environmental problems. To deliver the European Green Deal, there is a need to rethink policies for clean energy supply across the economy, including industry, production and consumption, large-scale infrastructure, transport, food and agriculture, construction, as well as taxation and social benefits.
5. As long as many international partners do not share the same ambition as the Union, there is a risk of carbon leakage, either because production is transferred from the Union to other countries with lower ambition for emission reduction, or because Union products are replaced by more carbon-intensive imports. If this risk materialises, there will be no reduction in global emissions, and this will frustrate the efforts of the Union and its

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<sup>1</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32). The Directive is incorporated into the EEA Agreement at point 21(a)(l) of Annex XX by EEA Joint Committee Decision No 146/2007 (OJ L 100, 10.4.2008, p. 92, and EEA Supplement No 19, 10.4.2008, p. 90).

<sup>2</sup> Directive (EU) 2018/410 of the European Parliament and of the Council of 14 March 2018 amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, and Decision (EU) 2015/1814 (OJ L 76, 19.3.2018, p.3). The Directive is to be incorporated into the EEA Agreement at point 21a) of Annex XX by EEA Joint Committee Decision No 112/2020 (not yet in force and published). The Decision is incorporated into the EEA Agreement at point 21a) of Annex XX by EEA Joint Committee Decision No 165/2018 (not yet published).

<sup>3</sup> Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, COM(2019) 640 final.

industries to meet the global climate objectives of the Paris Agreement<sup>4</sup>, adopted on 12 December 2015, following the 21<sup>st</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change (“the Paris Agreement”).

ESA notes that the policy instrument or the public international law agreement referred to in paragraph 4 and the current paragraph, as well as some legislative provisions that these Guidelines refer to, may not be incorporated into – or fall outside the scope of – the EEA Agreement.\* Nonetheless, with a view to ensuring a uniform application of State aid provisions and equal conditions of competition throughout the EEA, ESA will in general apply the same points of reference as that of the Commission Guidelines when assessing the compatibility of environmental aid with the functioning of the EEA Agreement, while taking into account the particular legislative situation of the EEA EFTA States. This implies that the present Guidelines make reference to relevant European Union legislation and policy documents where such have been adopted. ESA emphasises that such references to European Union legislation do not imply that the EEA EFTA States are obliged to comply with this legislation when such legislation has not been implemented into the EEA Agreement. These texts serve only as a basis for assessing the compatibility of State aid measures with the functioning of the EEA Agreement in terms of Article 61(3) of the EEA Agreement.

6. The primary objective of State aid control in the context of implementation of the EU ETS is to ensure that the positive effects of the aid outweigh its negative effects in terms of distortions of competition in the internal market. State aid must be necessary to achieve the environmental objective of the EU ETS (necessity of the aid) and must be limited to the minimum needed to achieve the environmental protection sought (proportionality of the aid) without creating undue distortions of competition and trade in the internal market.
7. In these Guidelines, ESA sets out the conditions under which aid measures in the context of the EU ETS may be considered compatible with the functioning of the EEA Agreement under Article 61(3)(c) thereof. Following the review and possible revision of all climate-related policy instruments (notably of the Directive 2003/87/EC) to deliver additional greenhouse gas emissions reductions for 2030, reflecting the Climate Target Plan, and the initiative for the creation of a Carbon Border Adjustment Mechanism, ESA will check whether any revision or adaptation of these Guidelines is necessary to ensure consistency with, and contribute to, the fulfilment of the climate neutrality objective while respecting a level playing field<sup>5</sup>.
8. These Guidelines also take into account the specificities of European small and medium enterprises (SMEs), in line with the SME Strategy for a sustainable and digital Europe<sup>6</sup>.

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<sup>4</sup> OJ L 282, 19.10.2016, p. 4.

\* The European Green Deal is not incorporated into the EEA Agreement. The EEA EFTA States are all Parties to the Paris Agreement.

<sup>5</sup> See conclusions adopted by the European Council at the meeting of 12 December 2019.

<sup>6</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An SME Strategy for a sustainable and digital Europe, COM(2020) 103 final.

## 1. SCOPE AND DEFINITIONS

### 1.1. Scope of application

9. The principles set out in these Guidelines apply only to the specific aid measures provided for in Articles 10a(6) and 10c of the Directive 2003/87/EC.
10. Aid may not be awarded to firms in difficulty within the meaning of the Guidelines on State aid for rescuing and restructuring firms in difficulty<sup>7</sup>.
11. When assessing aid in favour of an undertaking which is subject to an outstanding recovery order following a previous ESA decision declaring aid to be illegal and incompatible with the functioning of the EEA Agreement, ESA will take account of the amount of aid still to be recovered<sup>8</sup>. In practice, it will assess the cumulative effect of both aid measures and may suspend the payment of the new aid until the outstanding recovery order is implemented.

### 1.2. Aid measures covered by these Guidelines

*1.2.1. Aid to compensate for increases in electricity prices resulting from the inclusion of the costs of greenhouse gas emissions due to the EU ETS (commonly referred to as “indirect emission costs”)*

12. Under Article 10a(6) of Directive 2003/87/EC, EEA States should adopt financial measures in favour of sectors or subsectors which are exposed to a genuine risk of carbon leakage due to significant indirect costs that are actually incurred from greenhouse gas emission costs passed on in electricity prices, provided that such financial measures are in accordance with State aid rules, and in particular do not cause undue distortions of competition in the internal market.

*1.2.2. Aid involved in the optional transitional free allocation for the modernisation of the energy sector*

13. Under Article 10c of Directive 2003/87/EC, EEA States fulfilling certain conditions relating to the level of GDP per capita in comparison to the Union average, may derogate from the principle set out in the second subparagraph of Article 10a(1) of Directive 2003/87/EC that no free allocation is to be made in respect of any electricity production. Those EEA States may give a transitional free allocation to installations for electricity generation for the modernisation, diversification and sustainable transformation of the energy sector.
14. As already established in a number of Commission decisions<sup>9</sup>, the granting of transitional free allowances to the energy sector involves State aid within the meaning of Article

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<sup>7</sup> Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty (OJ L 271, 16.10.2015, p. 35, and EEA Supplement No 62, 15.10.2015, p. 1).

<sup>8</sup> See in this respect the joint Cases T-244/93 and T-486/93, TWD *Textilwerke Deggendorf GmbH v Commission* ECLI:EU:T:1995:160, and ESA’s communication on recovery of unlawful and incompatible state aid (OJ L 105, 21.4.2011, p. 32, and EEA Supplement No 23, 21.4.2011, p. 1).

<sup>9</sup> See for example, Commission decision SA.34385 – Bulgaria – Allocation of free greenhouse gas emission allowances in line with Article 10c of Directive 2003/87/EC in exchange for investments in installations for electricity production and in energy infrastructure (OJ C 63, 20.2.2015, p. 1);

107(1) of the Treaty on the Functioning of the European Union (“the Treaty”)\*, because Member States forego revenues by granting free allowances and give a selective advantage to energy actors. Those actors may compete with energy actors in other EEA States, which may, as a result, distort or threaten to distort competition and affect trade in the internal market.

### 1.3. Definitions

15. For the purposes of these Guidelines, the following definitions apply:

- (1) ‘aid’ means any measure fulfilling all the criteria laid down in Article 61(1) of the EEA Agreement;
- (2) ‘aid granting period’ means one or more years within the period 2021-2030. If an EEA EFTA State wishes to grant aid corresponding to a shorter period, it should take as a reference a business year of the beneficiaries and grant aid on a yearly basis;
- (3) ‘carbon leakage’ means the prospect of an increase in global greenhouse gas emissions when companies shift production outside the EEA because they cannot pass on the cost increases induced by the EU ETS to their customers without significant loss of market share;
- (4) ‘maximum aid intensity’ means the total aid amount expressed as a percentage of the eligible costs;
- (5) ‘auto generation’ means generation of electricity by an installation that does not qualify as an ‘electricity generator’ within the meaning of point (u) of Article 3 of Directive 2003/87/EC;
- (6) ‘beneficiary’ means an undertaking receiving aid;
- (7) ‘European Union Allowance’ (EUA) means a transferable allowance to emit one tonne of CO<sub>2</sub> equivalent during a specified period;
- (8) ‘gross value added’ (GVA) means gross value added at factor costs, which is GVA at market prices less any indirect taxes plus any subsidies.
- (9) ‘EUA forward price’, in euros, means the 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<sup>10</sup>.
- (10) ‘CO<sub>2</sub> emission factor’, in tCO<sub>2</sub>/MWh, means the weighted average of the CO<sub>2</sub> intensity of electricity produced from fossil fuels in different geographic areas. The weight reflects the production mix of the fossil fuels in the given geographic area.

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Commission decision SA.34674 – Poland – Free allowances to power generators under Article 10c of Directive 2003/87/EC (OJ C 24, 23.1.2015, p. 1).

\* Article 107(1) of the Treaty is the equivalent of Article 61(1) of the EEA Agreement.

<sup>10</sup> For example, for aid granted for 2023, it is the simple average of the December 2023 EUA closing offer prices observed from 1 January 2022 to 31 December 2022 in a given EU carbon exchange.

The CO<sub>2</sub> factor is the result of the division of the CO<sub>2</sub> equivalent emission data of the energy industry divided by the gross electricity generation based on fossil fuels in TWh. For the purposes of these Guidelines,<sup>11</sup> the areas are defined as geographic zones (a) which consist of submarkets coupled through power exchanges, or (b) within which no declared congestion exists and, in both cases, 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. Such regional differentiation reflects the significance of fossil fuel plants for the final price set on the wholesale market and their role as marginal plants in the merit order. The mere fact that electricity is traded between two EEA States does not automatically mean that they constitute a supranational region. Given the lack of relevant data at sub-national level, the geographic areas comprise the entire territory of one or more EEA States. On this basis, the following geographic areas can be identified: Adriatic (Croatia and Slovenia), Nordic (Sweden and Finland), Baltic (Lithuania, Latvia and Estonia), Central Western Europe (Austria, Germany, Luxembourg), Iberia (Portugal and Spain), Czechia and Slovakia (Czechia and Slovakia) and all other EEA States separately, including Iceland and Norway.\* The corresponding maximum regional CO<sub>2</sub> factors, which apply as maximal values when the notifying EEA EFTA State has not established an assessment of the market based CO<sub>2</sub> factor pursuant to point (11) below, are listed in Annex III. In order to ensure equal treatment of sources of electricity and avoid possible abuses, the same CO<sub>2</sub> emission factor applies to all sources of electricity supply (auto generation, electricity supply contracts or grid supply) and to all aid beneficiaries in the EEA State concerned;

- (11) ‘market-based CO<sub>2</sub> emission factor’, in tCO<sub>2</sub>/MWh. EEA EFTA States intending to grant indirect cost compensation may, as part of the notification of the relevant scheme, request that the applicable CO<sub>2</sub> emission factor be established based on a study of the CO<sub>2</sub> content of the actual margin setting technology in the electricity market. Such a notification of a market-based CO<sub>2</sub> emission factor must demonstrate the appropriateness of the retained market-based CO<sub>2</sub> emission factor based on a model of the electrical system simulating price formation and observed data on the margin setting technology over the entire year t-1 (including the hours when imports were margin setting). This report must be submitted to the national regulatory authority for approval and transmitted to ESA when the State aid measure is notified to ESA pursuant to Article 61(3) of the EEA Agreement. ESA assesses the appropriateness of the study and the resulting market-based CO<sub>2</sub> emission factor as parts of its compatibility analysis under Article 61(3)(c) of the EEA Agreement and the present Guidelines;
- (12) ‘actual output’, in tonnes per year, means the installation’s actual production in year t, determined *ex post* in year t+1;

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<sup>11</sup> The Commission Guidelines do not qualify as legislative instruments and therefore do not have to be incorporated into the EEA Agreement by the EEA Joint Committee. ESA is responsible for setting the relevant rules applicable for EEA EFTA States, including the methodology for setting the CO<sub>2</sub> factors. See further paragraph 69 of these Guidelines.

\* The geographic area for Liechtenstein and the applicable CO<sub>2</sub> emission factor will be established at a later stage.

- (13) ‘actual electricity consumption’, in MWh, means the actual electricity consumption at the installation (including electricity consumption for the production of out-sourced products eligible for aid) in year t, determined *ex post* in year t+1;
- (14) ‘electricity consumption efficiency benchmark’, in MWh/tonne of output and defined at Prodcom 8 level<sup>12</sup>, means the product-specific electricity consumption per tonne of output achieved by the most electricity-efficient methods of production for the product considered. The electricity consumption efficiency benchmark update needs to be consistent with Article 10a(2) of Directive 2003/87/EC. For products within the eligible sectors for which fuel and electricity exchangeability has been established in section 2 of Annex I to Commission Delegated Regulation (EU) 2019/331<sup>13</sup>, electricity consumption efficiency benchmarks are determined within the same system boundaries, taking into account only the share of electricity for the determination of the aid amount. The corresponding electricity consumption benchmarks for products covered by eligible sectors are listed in Annex II to these Guidelines;
- (15) *‘fall back electricity consumption efficiency benchmark’ means 80 per cent of actual electricity consumption, determined by ESA decision together with the electricity consumption efficiency benchmarks. It corresponds to the average reduction effort imposed by the application of the electricity consumption efficiency benchmarks (benchmark electricity consumption/average electricity consumption). It is applied for all products which fall within the eligible sectors, but for which an electricity consumption efficiency benchmark is not defined.*

*The fall back electricity consumption efficiency benchmark shall be reduced (as from year t = 2022) by 1.09% on an annual basis, according to the formula established in Annex II under ‘Updated efficiency benchmarks for certain products referred to in Annex I’.*

## 2. COMMON ASSESSMENT PRINCIPLES

16. To assess whether a notified aid measure can be considered compatible with the functioning of the EEA Agreement, ESA generally analyses whether the design of the aid measure ensures that the positive impact of the aid towards the achievement of an objective of common interest exceeds its potential negative effects on trade and competition.
17. The communication on State aid modernisation of 8 May 2012<sup>14</sup> called for the identification and definition of common principles applicable to the assessment of

<sup>12</sup> The Prodcom list is a European list of products from extractive and manufacturing industries: [https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=CLASSIFIC&StrLanguageCode=EN&IntFamilyCode=&TxtSearch=prodcom&IntCurrentPage=1](https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=CLASSIFIC&StrLanguageCode=EN&IntFamilyCode=&TxtSearch=prodcom&IntCurrentPage=1).

<sup>13</sup> Commission Delegated Regulation (EU) 2019/331 of 19 December 2018 determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council (OJ L 59, 27.2.2019, p. 8). The Regulation is incorporated into the EEA Agreement at point 21alm of Annex XX by EEA Joint Committee Decision No 144/2020 (not yet in force and published).

<sup>14</sup> COM/2012/0209 final.



compatibility of all the aid measures carried out by the Commission. These principles have also been implemented by ESA. ESA will therefore consider an aid measure compatible with the functioning of the EEA Agreement only if it satisfies each of the following criteria: it must contribute to an objective of common interest in accordance with Article 61(3) of the EEA Agreement; it must be targeted towards a situation where aid can bring about a material improvement that the market cannot deliver itself, for example by remedying a market failure or addressing an equity or cohesion concern; it must be an appropriate policy instrument to address the objective of common interest; it must change the behaviour of the undertakings concerned in such a way that they engage in additional activity, which they would not carry out without the aid or would carry out in a restricted or different manner or location; the amount and intensity of the aid must be limited to the minimum needed; the negative effects of the aid must be sufficiently limited; EEA EFTA States, ESA, economic operators and the public must have easy access to all relevant acts and to pertinent information about the aid awarded thereunder.

18. Sections 3.1 and 3.2 explain how these general criteria translate into specific compatibility requirements to be met for the purposes of the aid measures covered by these Guidelines.

### **3. COMPATIBILITY ASSESSMENT UNDER ARTICLE 61(3)(C) OF THE EEA AGREEMENT**

#### **3.1. Aid to undertakings in sectors deemed to be exposed to a genuine risk of carbon leakage due to significant indirect costs that are actually incurred from greenhouse gas emission costs passed on in electricity prices (aid for indirect emission costs)**

19. Aid for indirect emission costs will be considered compatible with the functioning of the EEA Agreement within the meaning of Article 61(3)(c) of the EEA Agreement provided that the conditions below are met.
20. The objective of this type of aid is to prevent a significant risk of carbon leakage, in particular due to EUA costs passed on in electricity prices supported by the beneficiary, if its competitors from third countries do not face similar costs in their electricity prices and the beneficiary is unable to pass on those costs to product prices without losing significant market share. Addressing the risk of carbon leakage, by assisting beneficiaries to reduce their exposure to this risk, serves an environmental objective, since the aid aims to avoid an increase in global greenhouse gas emissions due to shifts of production outside the EEA, in the absence of a binding international agreement on reduction of greenhouse gas emissions.
21. To limit the risk of competition distortion within the internal market, the aid must be limited to sectors that are exposed to a genuine risk of carbon leakage due to significant indirect costs that are actually incurred as a consequence of greenhouse gas emission costs being passed on in electricity prices. For the purpose of these Guidelines, a genuine risk of carbon leakage is considered to exist only if the beneficiary is active in a sector listed in Annex I.
22. If EEA EFTA States decide to grant the aid only to some of the sectors listed in Annex I, the choice of sectors must be made on the basis of objective, non-discriminatory and transparent criteria.

23. Within the eligible sector, EEA EFTA States need to ensure that the choice of beneficiaries is made on the basis of objective, non-discriminatory and transparent criteria and that the aid is granted in principle in the same way for all competitors in the same sector if they are in a similar factual situation.
24. For the purpose of compensating indirect ETS costs, State aid is considered an appropriate instrument independently of the form in which it is granted. In this context, compensation taking the form of a direct grant is considered an appropriate instrument.
25. The aid is compatible with the functioning of the EEA Agreement only if it has an incentive effect. For the aid to have an incentive effect and actually prevent carbon leakage, it must be applied for and paid to the beneficiary in the year in which the costs are incurred or in the following year.
26. If aid is paid in the year in which the costs are incurred, an ex-post payment adjustment mechanism must be in place to ensure that any over-payment of aid will be repaid before 1 July in the following year.
27. The aid is proportionate and has a sufficiently limited negative effect on competition and trade if it does not exceed 75% of the indirect emission costs incurred. The electricity consumption efficiency benchmark ensures that support to inefficient production processes remains limited and maintains the incentive for dissemination of most energy-efficient technologies.
28. The maximum aid payable per installation for the manufacture of products within the sectors listed in Annex I must be calculated according to the following formula:
  - (a) Where electricity consumption efficiency benchmarks listed in Annex II are applicable to the products manufactured by the beneficiary, the maximum aid payable per installation for costs incurred in year  $t$  equals:

$$A_{max,t} = A_i \times C_t \times P_{t-1} \times E \times AO_t$$

In this formula,  $A_i$  is the aid intensity, expressed as a fraction (e.g. 0.75);  $C_t$  is the applicable CO<sub>2</sub> emission factor or market-based CO<sub>2</sub> emission factor (tCO<sub>2</sub>/MWh) (at year  $t$ );  $P_{t-1}$  is the EUA forward price at year  $t-1$  (EUR/tCO<sub>2</sub>);  $E$  is the applicable product-specific electricity consumption efficiency benchmark defined in Annex II; and  $AO_t$  is the actual output in year  $t$ . These concepts are defined in section 1.3.

- (b) Where electricity consumption efficiency benchmarks listed in Annex II are not applicable to the products manufactured by the beneficiary, the maximum aid payable per installation for costs incurred in year  $t$  equals:

$$A_{max,t} = A_i \times C_t \times P_{t-1} \times EF \times AEC_t$$

In this formula,  $A_i$  is the aid intensity, expressed as a fraction (e.g. 0,75);  $C_t$  is the applicable CO<sub>2</sub> emission factor or market-based CO<sub>2</sub> emission factor (tCO<sub>2</sub>/MWh) (at year  $t$ );  $P_{t-1}$  is the EUA forward price at year  $t-1$  (EUR/tCO<sub>2</sub>);  $EF$  is the fall-back electricity consumption efficiency benchmark as defined in point 15 number 15.; and  $AEC$  is the actual electricity consumption (MWh) in year  $t$ .

29. If an installation manufactures products for which an electricity consumption efficiency benchmark listed in Annex II is applicable and products for which the fall back

electricity consumption efficiency benchmark is applicable, the electricity consumption for each product must be apportioned according to the respective tonnage of production of each product.

30. If an installation manufactures products that are eligible for aid (that is to say, they fall within the eligible sectors listed in Annex I) and products that are not eligible for aid, the maximum aid payable must be calculated only for the products that are eligible for aid.
31. Given that for some sectors the aid intensity of 75% might not be sufficient to ensure that there is adequate protection against the risk of carbon leakage, when needed, EEA EFTA States may limit the amount of the indirect costs to be paid at undertaking level to 1.5% of the gross value added of the undertaking concerned in year t. The gross value added of the undertaking must be calculated as turnover, plus capitalised production, plus other operating income, plus or minus changes in stocks, minus purchases of goods and services (which shall not include personnel costs), minus other taxes on products that are linked to turnover but not deductible, minus duties and taxes linked to production. Alternatively, it can be calculated from gross operating surplus by adding personnel costs. Income and expenditure classified as financial or extraordinary in company accounts is excluded from value added. Value added at factor costs is calculated at gross level, as value adjustments (such as depreciation) are not subtracted<sup>15</sup>.
32. When EEA EFTA States decide to limit the amount of the indirect costs to be paid at undertaking level to 1.5% of gross value added, that limitation must apply to all eligible undertakings in the relevant sector. If EEA EFTA States decide to apply the limitation of 1.5% of gross value added only to some of the sectors listed in Annex I, the choice of sectors must be made on the basis of objective, non-discriminatory and transparent criteria.
33. The aid may be cumulated with:
  - (a) any other State aid in relation to different identifiable eligible costs,
  - (b) any other State aid, in relation to the same eligible costs, partly or fully overlapping, and any other State aid without identifiable eligible costs, only if such cumulation does not result in exceeding the maximum aid intensity or aid amount applicable to the aid under this section.
34. Resources coming from the EEA (for example from structural funds or EEA/Norway grants) which are not directly or indirectly under the control of an EEA State, do not constitute State aid. Where such funding is combined with State aid, only the latter is considered for determining whether notification thresholds and maximum aid intensities are respected, provided that the total amount of public funding granted in relation to the same eligible costs does not exceed the maximum funding rate(s) laid down in the applicable rules of EEA law.

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<sup>15</sup> Code 12 15 0 within the legal framework set out by Regulation (EC) No 295/2008 of the European Parliament and of the Council of 11 March 2008 concerning structural business statistics (OJ L 97, 9.4.2008, p. 13). The regulation has been incorporated into the EEA Agreement in point 1 of Annex XXI by EEA Joint Committee Decision No 123/2008 of 7 November 2009 (OJ L 339, 18.12.2008, p. 115, and EEA Supplement No. 79, 18.12.2008, p. 24).

35. Aid must not be cumulated with *de minimis* aid in respect of the same eligible costs if such cumulation would result in an aid intensity exceeding that laid down in this section.
36. The duration of aid schemes under which the aid is granted must not be longer than the duration of these Guidelines (2021-2030).

**3.2. Aid involved in optional transitional free allowances for the modernisation of electricity generation**

37. State aid involved in the optional transitional free allowances for the modernisation of electricity generation, in accordance with Article 10c of Directive 2003/87/EC, is compatible with the functioning of the EEA Agreement within the meaning of Article 61(3)(c) of the EEA Agreement provided the conditions set out below are met.
38. The objective of the aid must be the modernisation, diversification and sustainable transformation of the energy sector. The investments supported must be consistent with the transition to a safe and sustainable low-carbon economy, the objectives of the Union's 2030 climate and energy policy framework, the European Green Deal, and the long-term objectives expressed in the Paris Agreement.
39. Where an investment leads to additional electricity generation capacity, the operator concerned must also demonstrate that a corresponding amount of electricity-generation capacity with higher emission intensity has been decommissioned by it or another associated operator by the start of operation of the additional capacity.
40. The aid is compatible with the functioning of the EEA Agreement only if it has an incentive effect. An incentive effect occurs when the aid induces the beneficiary to change its behaviour, a change in behaviour which it would not undertake without the aid. The aid must not subsidise the costs of an activity that an undertaking would anyhow incur and must not compensate for the normal business risk of an economic activity.
41. When receiving an aid application, the granting authority must check that the aid would have the required incentive effect.
42. Aid can be paid out in the form of allocations to operators only where it is demonstrated that an investment selected in accordance with the rules of a competitive bidding process has been carried out.
43. For projects involving a total amount of investment exceeding EUR 12.5 million, aid can only be granted on the basis of a competitive bidding process, to take place in one or more rounds between 2021 and 2030. That competitive bidding process must:
  - (a) comply with the principles of transparency, non-discrimination, equal treatment and sound financial management;
  - (b) ensure that only projects which contribute to the diversification of their energy mix and sources of supply, the necessary restructuring, environmental upgrading and retrofitting of the infrastructure, clean technologies, such as renewable energy technologies, or modernisation of the energy production sector, such as efficient and sustainable district heating, and of the transmission and distribution sector, are eligible to bid;

- (c) define clear, objective, transparent and non-discriminatory selection criteria for the ranking of projects, so as to ensure that only projects are selected which:
  - (i) on the basis of a cost-benefit analysis, ensure a net positive gain in terms of emission reduction and realise a pre-determined significant level of CO<sub>2</sub> reductions taking into account the size of the project;
  - (ii) are additional, clearly respond to replacement and modernisation needs and do not supply a market-driven increase in energy demand;
  - (iii) offer the best value for money;
  - (iv) do not contribute to or improve the financial viability of highly emission-intensive electricity generation or increase dependency on emission-intensive fossil fuels.
  
- 44. For projects involving a total amount of investment with a value of less than EUR 12.5 million, aid can be granted without a competitive bidding process. The selection of the projects must in this case be based on objective and transparent criteria. The results of the selection process must be published for public comments. Where more than one investment is carried out within the same installation, the investments must be assessed as a whole to establish whether or not the threshold of EUR 12.5 million is exceeded, unless those investments are, independently, technically or financially viable.
  
- 45. ESA will consider the aid to be proportionate if the aid intensity does not exceed 70% of the relevant costs of the investment. All figures used must be taken before any deduction of tax or other charges. Where aid is awarded in a form other than a grant, the aid amount must be the equivalent of the grant in terms of value. Aid payable in several instalments must be calculated at its total net present value at the moment of granting the first instalment, using the relevant ESA reference rate for discounting the value over time. The aid intensity is calculated per beneficiary.
  
- 46. The aid must not adversely affect trading conditions to an extent contrary to the common interest, in particular where aid is concentrated on a limited number of beneficiaries or where the aid is likely to reinforce the beneficiaries' market position (at the group level).
  
- 47. The aid may be cumulated with:
  - (a) any other State aid in relation to different identifiable eligible costs,
  - (b) any other State aid, in relation to the same eligible costs, partly or fully overlapping, and any other State aid without identifiable eligible costs, only if such cumulation does not result in exceeding the maximum aid intensity or aid amount applicable to this aid under this section.
  
- 48. Aid may be awarded concurrently under several aid schemes or cumulated with *ad hoc* aid, provided that the total amount of State aid for an activity or project does not exceed the aid ceilings laid down in this section. Resources coming from the EEA (for example from structural funds or EEA/Norway grants) which are not directly or indirectly under the control of an EEA State, do not constitute State aid. Where such EEA funding is combined with State aid, only the latter is considered for determining whether notification thresholds and maximum aid intensities are respected, provided that the total

amount of public funding granted in relation to the same eligible costs does not exceed the maximum funding rate(s) laid down in the applicable rules of EEA law.

49. Aid is not to be cumulated with *de minimis* aid in respect of the same eligible costs if such cumulation would result in an aid intensity exceeding that laid down in this section.
50. The duration of aid schemes under which the aid is granted must not be longer than the duration of these Guidelines (2021-2030).

#### **4. EVALUATION**

51. To further ensure that distortion of competition is limited, ESA may require that certain aid schemes are subject to an *ex post* evaluation. Evaluations will need to be carried out for schemes where the potential distortion of competition is particularly high, that is to say, that may risk significantly restricting or distorting competition if their implementation is not reviewed in due time.
52. Given its objectives, and in order not to put disproportionate burden on EEA EFTA States and on smaller aid projects, evaluation is only required for aid schemes with large aid budgets, containing novel characteristics or when significant market, technology or regulatory changes are foreseen. The evaluation must be carried out by an expert independent from the aid granting authority on the basis of a common methodology provided by ESA. It must be made public. The EEA EFTA State must notify, together with the aid scheme, a draft evaluation plan, which will be an integral part of ESA's assessment of the scheme.
53. The evaluation must be submitted to ESA in due time to allow for the assessment of the possible prolongation of the aid scheme and in any case upon its expiry. The precise scope and rules/requirements concerning each evaluation will be defined in the decision approving the aid scheme. Any subsequent aid measure with a similar objective must take into account the results of the evaluation.

#### **5. ENERGY AUDITS AND MANAGEMENT SYSTEMS**

54. For aid covered by Section 3.1, EEA EFTA States commit to verifying that the beneficiary complies with its obligation to conduct an energy audit in the sense of Article 8 of Directive 2012/27/EU of the European Parliament and of the Council<sup>16</sup>, either as a stand alone energy audit or within the framework of a certified Energy Management System or Environmental Management System, for example the EU eco-management and audit scheme (EMAS)<sup>17</sup>.

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<sup>16</sup> Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1). Pending incorporation into the EEA Agreement.

<sup>17</sup> Regulation (EC) No 1221/2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) (OJ L 342, 22.12.2009, p. 1). The Regulation is incorporated into the EEA Agreement at point 1ea of Annex XX by EEA Joint Committee Decision No 136/2012 (OJ L 309, 8.11.2012, p. 17, and EEA Supplement No 63, 8.11.2012, p. 19).

55. EEA EFTA States also commit to monitoring that beneficiaries covered by the obligation to conduct an energy audit under Article 8(4) of Directive 2012/27/EU will:
- (a) implement recommendations of the audit report, to the extent that the pay-back time for the relevant investments does not exceed 3 years and that the costs of their investments is proportionate; or alternatively,
  - (b) reduce the carbon footprint of their electricity consumption, so as to cover at least 30% of their electricity consumption from carbon-free sources; or alternatively,
  - (c) invest a significant share of at least 50% of the aid amount in projects that lead to substantial reductions of the installation's greenhouse gas emissions and well below the applicable benchmark used for free allocation in the EU Emissions Trading System.

## 6. TRANSPARENCY

56. EEA EFTA States must ensure that the following information is published in the Commission's transparency award module<sup>18</sup> or on a comprehensive State aid website, at national or regional level:
- (a) the full text of the approved aid scheme or the individual aid granting decision and its implementing provisions, or a link to it;
  - (b) the identity of the granting authority or authorities;
  - (c) the name and the identifier of each beneficiary, except business secrets and other confidential information in duly justified cases and subject to ESA's agreement in accordance with ESA's Guidelines on Professional Secrecy in State Aid Decisions<sup>19</sup>;
  - (d) the aid instrument<sup>20</sup>, the aid element and, where different, the nominal amount of aid, expressed as full amount in national currency<sup>21</sup> granted to each beneficiary;
  - (e) the date of granting<sup>22</sup> and the date of publication;
  - (f) the type of undertaking (small or medium sized enterprise/large company);
  - (g) the region in which the beneficiary is located (at NUTS level II or below);
  - (h) the principal economic sector in which the beneficiary has its activities (at NACE group level);

<sup>18</sup> <https://webgate.ec.europa.eu/competition/transparency/public?lang=en>.

<sup>19</sup> OJ L 154, 8.6.2006, p. 27, and EEA Supplement No 29, 8.6.2006, p. 1.

<sup>20</sup> Grant/Interest rate subsidy; Loan/Repayable advances/Reimbursable grant; Guarantee; Tax advantage or tax exemption; Risk finance; Other (please specify). If the aid is granted through multiple aid instruments, the aid amount must be provided by instrument.

<sup>21</sup> Gross grant equivalent. For operating aid, the annual amount of aid per beneficiary can be provided.

<sup>22</sup> The date when the legal right to receive the aid is conferred on the beneficiary under the applicable national legal regime.

(i) the objective of the aid.

57. Such a requirement applies with respect to individual aid awards exceeding EUR 500 000.
58. Such information must be published after the decision to grant the aid has been taken, must be kept for at least 10 years and must be available to the general public without restrictions<sup>23</sup>.

## **7. REPORTING AND MONITORING**

59. In accordance with Protocol 3 and ESA's Decision No 195/04/COL<sup>24</sup>, EEA EFTA States must submit annual reports to ESA.
60. Beyond the requirement laid down in Protocol 3 and ESA's Decision No 195/04/COL, EEA EFTA States must include in their annual reports the following information by using the standard form provided by ESA:
- (a) the name of each beneficiary and the aided installations under its ownership;
  - (b) the sector(s) in which each beneficiary is active (identified by NACE-4 code);
  - (c) the year for which the aid is granted and the year in which it is being paid;
  - (d) the actual output for each aided installation in the pertinent sector;
  - (e) the actual electricity consumption for each aided installation (if any aid is given using a fall back electricity consumption efficiency benchmark);
  - (f) the EUA forward price used to compute the aid amount per beneficiary;
  - (g) the aid intensity;
  - (h) the national CO<sub>2</sub> emission factor.
61. EEA EFTA States must ensure that detailed records regarding all measures involving the granting of aid are maintained. Such records must contain all information necessary to establish that the conditions regarding, where applicable, eligible costs and maximum allowable aid intensity have been observed. Those records must be maintained for 10 years from the date on which the aid was granted and be provided to ESA upon request.

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<sup>23</sup> This information must be published within 6 months from the date of granting. In case of unlawful aid, EEA EFTA States will be required to ensure the publication of this information ex post within 6 months from the date of ESA's decision. The information must be available in a format which allows data to be searched, extracted, and easily published on the internet, for instance in CSV or XML format.

<sup>24</sup> ESA's Decision No 195/04/COL of 14 July 2004 on the implementing provisions referred to under article 27 in Part II of Protocol 3. The consolidated version of the decision is available at: <https://www.eftasurv.int/cms/sites/default/files/documents/2017-Consolidated-version-of-Dec-195-054-COL--002-.pdf>.



62. In any year in which the budget of the aid schemes referred to by section 3.1 exceeds 25% of the revenues generated from the auctioning of allowances, the EEA EFTA State concerned must publish a report setting out the reasons for exceeding that amount, in accordance with Article 10a(6) of Directive 2003/87/EC. The report must include relevant information on electricity prices for large industrial consumers benefiting from the scheme, without prejudice to requirements regarding the protection of confidential information. The report must also include information on whether due consideration has been given to other measures to sustainably lower indirect carbon costs in the medium to long term.
63. Electricity generators and network operators benefiting from aid covered by section 3.2 must report, by 28 February of each year, on the implementation of their selected investments, including the balance of free allocation and investment expenditure incurred and the types of investments supported.

## **8. PERIOD OF APPLICATION AND REVISION**

64. These Guidelines replace the Guidelines on certain State aid measures in the context of the greenhouse gas emission allowance trading scheme post 2012 published on 7 November 2013<sup>25</sup>, as of 1 January 2021.
65. ESA will apply the principles set out in these Guidelines from 1 January 2021 until 31 December 2030.
66. ESA will apply the principles set out in these Guidelines to all notified aid measures in respect of which it is called upon to take a decision, from the 1 January 2021, even where the projects were notified prior to their publication. Unlawful aid will be assessed in accordance with the rules in force on the date on which the aid was granted in accordance with the rules set out in the Chapter of the State Aid Guidelines on Applicable Rules For The Assessment Of Unlawful State Aid<sup>26</sup>.
67. ESA will adapt these Guidelines to update the electricity consumption efficiency benchmarks, the geographic areas, and the CO<sub>2</sub> emission factors in 2025. In 2025, ESA will also assess whether additional data is available allowing to improve the methodology used to calculate the CO<sub>2</sub> emission factors as described in Annex III, that is to say to take into account the increasingly important price-setting role of climate neutral technologies in EEA electricity markets and the conclusions of the assessments notified to ESA pursuant to point 15(11) above. Consequently, EEA EFTA States may have to adapt their respective schemes in order to bring them into line with the adapted Guidelines.
68. ESA may decide to review or adapt these Guidelines at any time if this should be necessary for reasons associated with competition policy or in order to take account of other EEA policies, international commitments or material market developments. EEA EFTA States may have to adapt their respective schemes in order to bring them into line with the adapted Guidelines.

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<sup>25</sup> OJ L 296, 7.11.2013, p. 25.

<sup>26</sup> OJ L 73, 19.3.2009, p. 23, EEA Supplement No 15, 19.3.2009, p. 6. This Chapter corresponds to the Commission Notice on the determination of the applicable rules for the assessment of unlawful State aid (OJ C 119, 22.5.2002, p. 22).

69. The Commission Guidelines do not qualify as legislative instruments and therefore do not have to be incorporated into the EEA Agreement by the EEA Joint Committee. ESA is responsible for setting the relevant rules applicable to EEA EFTA States, including the methodology for setting the CO<sub>2</sub> factors.<sup>27</sup> As regards, in particular, the latter, when duly justified by specific circumstances not prevailing elsewhere in the EEA, and in line with the aims of these Guidelines, ESA may introduce amendments to these Guidelines or take these specific circumstances into account in assessing a relevant aid scheme, including the methodology for setting the CO<sub>2</sub> factor, notified to ESA pursuant to Article 61(3) of the EEA Agreement.

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<sup>27</sup> See footnote 8.

**ANNEX I**
**Sectors deemed to be exposed to a genuine risk of carbon leakage due to indirect emission costs**

	<b>NACE code</b>	<b>Description</b>
1.	14.11	Manufacture of leather clothes
2.	24.42	Aluminium production
3.	20.13	Manufacture of other inorganic basic chemicals
4.	24.43	Lead, zinc and tin production
5.	17.11	Manufacture of pulp
6.	17.12	Manufacture of paper and paperboard
7.	24.10	Manufacture of basic iron and steel and ferro-alloys
8.	19.20	Manufacture of refined petroleum products
9.	24.44	Copper production
10.	24.45	Other non-ferrous metal production
11.		The following subsectors within the plastics sector (20.16):
	20.16.40.15	<i>Polyethylene glycols and other polyether alcohols, in primary forms</i>
12.		All product categories in the casting of iron sector (24.51)
13.		The following subsectors within the glass fibre sector (23.14):
	23.14.12.10	Glass fibre mats
	23.14.12.30	Glass fibre voiles
14.		The following subsectors within the industrial gases sector (20.11):
	20.11.11.50	Hydrogen
	20.11.12.90	Inorganic oxygen compounds of non-metals

***Annex II - Electricity consumption efficiency benchmarks and annual reduction rates for products referred to in Annex I***

***- Electricity consumption efficiency benchmarks for products referred to in Annex I with exchangeability of fuel and electricity:***

*Products for which exchangeability of fuel and electricity was established in Section 2 of Annex I to Delegated Regulation (EU) 2019/331.*

*Delegated Regulation (EU) 2019/331 in Annex I established that in respect of certain products there is substitutability between fuel and electricity. For those products, it is not appropriate to set a benchmark on the basis of MWh/t of product. Instead, starting points are the specific greenhouse gases emission curves derived for the direct emissions. For those products, the product benchmarks were determined on the basis of the sum of direct emissions (from energy and process emissions), as well as indirect emissions arising from the use of the inter-exchangeable part of the electricity.*

*In those cases, factor ‘E’ in the formula for the calculation of the maximum aid as referred to in point 28(a) of these Guidelines is to be replaced by the following term that converts a product benchmark laid down in Delegated Regulation (EU) 2019/331 into an electricity consumption efficiency benchmark on the basis of an average European CO<sub>2</sub> emission factor of 0,376 tCO<sub>2</sub>/MWh:*

*Existing product benchmark from Annex section 2 from Regulation 2021/447<sup>28</sup> (in tCO<sub>2</sub>/t) × share of relevant indirect emissions over the baseline period (%) / 0,376 (tCO<sub>2</sub>/MWh).*

*The value of the efficiency benchmarks for products with exchangeability of fuel and electricity to be applied in the period 2021 – 2025 can be found in the Regulation (EU) 2021/447 of 12 March 2021 determining revised benchmark values for free allocation of emission allowances for the period 2021 to 2025 pursuant to Article 10a(2) of Directive 2003/87/EC of the European Parliament and of the Council.*

***- Efficiency benchmarks for products referred to in Annex I that are not listed in Table 1 of this Annex***

*The fall back electricity consumption efficiency benchmark as defined in point 15 number 15 of these Guidelines is applicable for all eligible products referred to in Annex I for which an electricity consumption efficiency benchmark is not defined.*

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<sup>28</sup> Commission Implementing Regulation (EU) 2021/447 of 12 March 2021 determining revised benchmark values for free allocation of emission allowances for the period from 2021 to 2025 pursuant to Article 10a(2) of Directive 2003/87/EC of the European Parliament and of the Council (OJ L 87, 15.3.2021, p. 29–34). Regulation 2021/447 is incorporated into the EEA Agreement at point 21a) of Annex XX by EEA Joint Committee Decision No 221/2021 (not yet published).

- **Updated efficiency benchmarks for certain products referred to in Annex I**

Table 1 lists the benchmark values that should be used as a starting point for the determination of the applicable efficiency benchmark for a specific year, taking into account the corresponding annual reduction rate.

That annual reduction rate describes by how much the benchmarks will be automatically reduced annually. Unless stated otherwise in Table 1, all efficiency benchmarks (including the 'fall back electricity consumption efficiency benchmark') shall be reduced (as from year  $t = 2022$ ) by 1.09% on an annual basis, according to the following formula:

$$\text{efficiency benchmark applicable in (year } t) = \text{benchmark value in 2021} * (1 + \text{annual reduction rate})^{(\text{year } t - 2021)}$$

**Table 1: Electricity consumption efficiency benchmarks for certain products referred to in Annex I**

NACE4	Product benchmark	Benchmark value in 2021	Benchmark unit	Unit of production	Annual reduction rate [%]	Product definition	Processes covered by product benchmark	Relevant Prodcom code	Description
17.11	Chemical wood pulp	0.904	MWh/t 90% sdt	Tonne of chemical wood pulp	1.09	Chemical wood pulp, dissolving grades	All process directly or indirectly linked to chemical pulp production, including drying, washing and screening, and bleaching	17.11.11.00	Chemical wood pulp, dissolving grades
17.11	Chemical wood pulp	0.329	MWh/t 90% sdt	Tonne of chemical wood pulp	1.09	Chemical wood pulp, soda or sulphate, other than dissolving grades		17.11.12.00	Chemical wood pulp, soda or sulphate, other than dissolving grades
17.11	Chemical wood pulp	0.443	MWh/t 90% sdt	Tonne of chemical wood pulp	1.09	Chemical wood pulp, sulphite, other than dissolving grades		17.11.13.00	Chemical wood pulp, sulphite, other than dissolving grades

<i>NACE4</i>	<i>Product benchmark</i>	<i>Benchmark value in 2021</i>	<i>Benchmark unit</i>	<i>Unit of production</i>	<i>Annual reduction rate [%]</i>	<i>Product definition</i>	<i>Processes covered by product benchmark</i>	<i>Relevant Prodcom code</i>	<i>Description</i>
17.11	<i>Semi-chemical wood pulp</i>	0.443	<i>MWh/t 90% sdt</i>	<i>Tonne of semi-chemical wood pulp</i>	1.09	<i>Semi-chemical wood pulp</i>		17.11.14.00	<i>Mechanical wood pulp; semi-chemical wood pulp; pulps of fibrous cellulosic material other than wood</i>
17.11	<i>Mechanical pulp</i>	<i>Fall back approach</i>			1.09	<i>Mechanical pulp</i>	<i>All processes directly or indirectly linked to mechanical pulp production, including wood treatment, refining, washing, bleaching, heat recovery</i>		
17.11	<i>Recovered paper</i>	0.260	<i>MWh/t 90% sdt</i>	<i>Tonne of recovered paper</i>	1.09	<i>Recovered paper</i>	<i>All process directly or indirectly linked to recovered paper production, including thickening and dispersing, and bleaching</i>		
17.11	<i>Deinked recovered paper</i>	0.390	<i>MWh/t 90% sdt</i>	<i>Tonne of deinked recovered paper</i>	1.09	<i>Deinked recovered paper</i>			
17.12	<i>Newsprint</i>	0.801	<i>MWh/t product</i>	<i>Tonne of newsprint</i>	1.09	<i>Newsprint</i>	<i>All processes directly or indirectly linked to production of paper, including refining, pressing and thermal drying</i>	17.12.11.00	<i>Newsprint</i>
17.12	<i>Uncoated fine paper</i>	0.645	<i>MWh/t product</i>	<i>Tonne of uncoated fine paper</i>	1.09	<i>Uncoated fine paper</i>		17.12.12.00 17.12.13.00 17.12.14.10 17.12.14.35	<i>Uncoated fine paper</i>

<i>NACE4</i>	<i>Product benchmark</i>	<i>Benchmark value in 2021</i>	<i>Benchmark unit</i>	<i>Unit of production</i>	<i>Annual reduction rate [%]</i>	<i>Product definition</i>	<i>Processes covered by product benchmark</i>	<i>Relevant Prodcom code</i>	<i>Description</i>
								17.12.14.39 17.12.14.50 17.12.14.70	
17.12	Coated fine paper	0.538	MWh/t product	Tonne of coated fine paper	1.09	Coated fine paper		17.12.73.35 17.12.73.37 17.12.73.60 17.12.73.75 17.12.73.79 17.12.76.00	Coated fine paper
17.12	Tissue	0.925	MWh/t product	Tonne of tissue paper	1.09	Tissue		17.12.20.30 17.12.20.55 17.12.20.57 17.12.20.90	Tissue
17.12	Testliner and fluting	0.260	MWh/t product	Tonne of paper	1.09	Testliner and fluting		17.12.33.00 17.12.34.00 17.12.35.20 17.12.35.40	Testliner and fluting

<i>NACE4</i>	<i>Product benchmark</i>	<i>Benchmark value in 2021</i>	<i>Benchmark unit</i>	<i>Unit of production</i>	<i>Annual reduction rate [%]</i>	<i>Product definition</i>	<i>Processes covered by product benchmark</i>	<i>Relevant Prodcom code</i>	<i>Description</i>
17.12	<i>Uncoated carton board</i>	0.268	<i>MWh/t product</i>	<i>Tonne of carton board</i>	1.09	<i>Uncoated carton board</i>		17.12.31.00 17.12.32.00 17.12.42.60 17.12.42.80 17.12.51.10 17.12.59.10	<i>Uncoated carton board</i>
17.12	<i>Coated carton board</i>	0.403	<i>MWh/t product</i>	<i>Tonne of carton board</i>	1.09	<i>Coated carton board</i>		17.12.75.00 17.12.77.55 17.12.77.59 17.12.78.20 17.12.78.50 17.12.79.53 17.12.79.55	<i>Coated carton board</i>
20.13	<i>Sulphuric acid</i>	0.056	<i>MWh/t product</i>	<i>Tonne of Sulphuric acid</i>	1.09	<i>Sulphuric acid; oleum</i>	<i>All processes directly or indirectly linked to the production of sulphuric acid</i>	20.13.24.34	<i>Sulphuric acid; oleum</i>
20.13	<i>Chlorine</i>	1.846	<i>MWh/t product</i>	<i>Tonne of chlorine</i>	1.09	<i>Chlorine</i>	<i>All processes directly or indirectly linked to the electrolysis unit,</i>	20.13.21.11	<i>Chlorine</i>



<i>NACE4</i>	<i>Product benchmark</i>	<i>Benchmark value in 2021</i>	<i>Benchmark unit</i>	<i>Unit of production</i>	<i>Annual reduction rate [%]</i>	<i>Product definition</i>	<i>Processes covered by product benchmark</i>	<i>Relevant Prodcom code</i>	<i>Description</i>	
							<i>including auxiliaries</i>			
20.13	Silicon	11.87	MWh/t product	Tonne of silicon	1.09	Silicon. Other than containing by weight not less than 99,99 % of silicon	All processes directly or indirectly linked to the production of silicon	20.13.21.70	Silicon. Other than containing by weight not less than 99,99 % of silicon	
20.13	Silicon	60	MWh/t product	Tonne of silicon	1.09	Silicon. Containing by weight not less than 99,99 % of silicon	All processes directly or indirectly linked to the furnace, including auxiliaries	20.13.21.60	Silicon. Containing by weight not less than 99,99 % of silicon	
20.13	Silicon carbide	6.2	MWh/t product	Tonne of silicon carbide	1.09	Silicon. Carbides of silicon, whether or not chemically defined	All processes directly or indirectly linked to the production of silicon carbide	20.13.64.10	Silicon. Carbides of silicon, whether or not chemically defined	
24.10	Basic oxygen steel	0.03385	MWh/t product	Tonne of crude (cast) steel	0.60	Crude steel: non-alloy steel produced by other processes than in electric furnaces	Secondary metallurgy, refractories preheating, auxiliaries and casting installations up to cut-off of crude steel products	24.10.T1.22	Crude steel: non-alloy steel produced by other processes than in electric furnaces	
24.10						Crude steel: alloy steel other than stainless steel produced by other processes than in electric furnaces			24.10.T1.32	Crude steel: alloy steel other than stainless steel produced by other processes than in electric furnaces
24.10						Crude steel: stainless and heat resisting steel produced by other processes than			24.12.T1.42	Crude steel: stainless and heat resisting steel produced by other processes than

<i>NACE4</i>	<i>Product benchmark</i>	<i>Benchmark value in 2021</i>	<i>Benchmark unit</i>	<i>Unit of production</i>	<i>Annual reduction rate [%]</i>	<i>Product definition</i>	<i>Processes covered by product benchmark</i>	<i>Relevant Prodcom code</i>	<i>Description</i>
						<i>in electric furnaces</i>			<i>in electric furnaces</i>
24.10	<i>Ferro-manganese</i>	2.2	<i>MWh/t product</i>	<i>Ferro-manganese containing by weight &gt; 2% carbon</i>	2.03	<i>Ferro-manganese, containing by weight &gt; 2% carbon, with a granulometry &lt;= 5 mm and a manganese content by weight &gt; 65%</i>		24.10.12.10	<i>Ferro-manganese, containing by weight &gt; 2% carbon, with a granulometry &lt;= 5 mm and a manganese content by weight &gt; 65%</i>
24.10				<i>Ferro-manganese containing by weight &gt; 2% carbon</i>		<i>Other ferro-manganese, containing by weight &gt; 2% carbon (excl. ferro-manganese with a granulometry of &lt;= 5 mm and containing by weight &gt; 65% manganese)</i>		24.10.12.20	<i>Other ferro-manganese, containing by weight &gt; 2% carbon (excl. ferro-manganese with a granulometry of &lt;= 5 mm and containing by weight &gt; 65% manganese)</i>
24.10	<i>Ferro-manganese</i>	1.4	<i>MWh/t product</i>	<i>Ferro-manganese containing by weight &lt;= 2% carbon</i>	1.09	<i>Other ferro-manganese containing by weight less or equal than 2 % carbon</i>		24.10.12.25	<i>Other ferro-manganese containing by weight less or equal than 2 % carbon</i>
24.10	<i>Ferro-silicon</i>	8.54	<i>MWh/t product</i>	<i>Ferro-silicon, containing by weight &gt; 55% of silicon</i>	1.09	<i>Ferro-silicon, containing by weight &gt; 55% of silicon</i>		24.10.12.35	<i>Ferro-silicon, containing by weight &gt; 55% of silicon</i>
24.10	<i>Ferro-silicon</i>	<i>Fall back approach</i>			1.09			24.10.12.36	<i>Ferro-silicon, containing by weight &lt;= 55% silicon and</i>

<i>NACE4</i>	<i>Product benchmark</i>	<i>Benchmark value in 2021</i>	<i>Benchmark unit</i>	<i>Unit of production</i>	<i>Annual reduction rate [%]</i>	<i>Product definition</i>	<i>Processes covered by product benchmark</i>	<i>Relevant Prodcom code</i>	<i>Description</i>
									<i>&gt;= 4% but &lt;= 10% of magnesium</i>
24.10	<i>Ferro-nickel</i>	9.28	<i>MWh/t product</i>	<i>Ferro-nickel</i>	1.09	<i>Ferro-nickel</i>		24.10.12.40	<i>Ferro-nickel</i>
24.10	<i>Ferro-silico-manganese</i>	3.419	<i>MWh/t product</i>	<i>Ferro-silico-manganese</i>	1.12	<i>Ferro-silico-manganese</i>		24.10.12.45	<i>Ferro-silico-manganese</i>
24.42	<i>Primary aluminium</i>	13.90	<i>MWh/t product</i>	<i>Unwrought non-alloy aluminium</i>	0.25	<i>Unwrought non-alloy aluminium from electrolysis</i>	<i>Unwrought non-alloy aluminium from electrolysis including production control units, auxiliary processes and cast house. Also include anode plant (pre-bake). In case anodes are provided from a stand-alone plant in EU, this plant should not be compensated. For anode produced outside EU, a correction may be applied</i>	24.42.11.30	<i>Unwrought non-alloy aluminium (excluding powders and flakes)</i>
								24.42.11.53	<i>Unwrought aluminium alloys in primary form (excluding aluminium powders and flakes)</i>
								24.42.11.54	<i>Unwrought aluminium alloys (excluding aluminium powders and flakes)</i>
24.42	<i>Alumina (refining)</i>	0.20	<i>MWh/t product</i>	<i>alumina</i>	1.11		<i>All processes directly or indirectly linked to the production of alumina</i>	24.42.12.00	<i>Aluminium oxide (excluding artificial corundum)</i>
24.43	<i>Zinc</i>	3.994	<i>MWh/t</i>	<i>zinc</i>	0.01	<i>Primary zinc</i>	<i>All processes directly or indirectly to the</i>	24.43.12.30	<i>Unwrought non-alloy zinc (excluding zinc</i>

<i>NACE4</i>	<i>Product benchmark</i>	<i>Benchmark value in 2021</i>	<i>Benchmark unit</i>	<i>Unit of production</i>	<i>Annual reduction rate [%]</i>	<i>Product definition</i>	<i>Processes covered by product benchmark</i>	<i>Relevant Prodcom code</i>	<i>Description</i>
	<i>electrolysis</i>		<i>product</i>				<i>zinc electrolysis unit including auxiliaries</i>		<i>dust, powders and flakes)</i>
								<i>24.43.12.50</i>	<i>Unwrought zinc alloys (excluding zinc dust, powders and flakes)</i>
<i>24.44</i>	<i>Unwrought refined copper</i>	<i>0.31</i>	<i>MWh/t product</i>	<i>Copper cathodes</i>	<i>1.09</i>	<i>Copper cathodes</i>	<i>All processes directly or indirectly linked to the electrolytic refining process, including on-site anode casting where appropriate</i>	<i>24.44.13.30</i>	<i>Unwrought unalloyed refined copper (excluding rolled, extruded or forged sintered products)'</i>

**Annex III**
**Maximum regional CO<sub>2</sub> emission factors in different geographic areas\***
**(tCO<sub>2</sub>/MWh)**

Zones		Applicable CO <sub>2</sub> emission factor
Adriatic	Croatia, Slovenia	0.69
Iberia	Spain, Portugal	0.53
Baltic	Lithuania, Latvia, Estonia	0.75
Central Western Europe	Austria, Germany, Luxembourg	0.72
Nordic	Sweden, Finland	0.58
Czechia-Slovakia	Czechia, Slovakia	0.85
Belgium		0.36
Bulgaria		0.98
Denmark		0.52
Ireland		0.49
Greece		0.73
France		0.44
Iceland <sup>*1</sup>		[...]
Italy		0.46
Cyprus		0.70
Hungary		0.58
Malta		0.40
Netherlands		0.45
Norway <sup>*2</sup>		[...]
Poland		0.81
Romania		0.96

\* The geographic area for Liechtenstein and the applicable CO<sub>2</sub> emission factor will be established at a later

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stage.

<sup>\*1</sup> *The CO<sub>2</sub> emission factor applicable for Iceland will be established at a later stage.*

<sup>\*2</sup> *The CO<sub>2</sub> emission factor applicable for Norway will be established at a later stage.*

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