

COMMUNICATION FROM THE COMMISSION

Guidelines on certain State aid measures in the context of the greenhouse gas emission allowance trading scheme post-2012

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(Text with EEA relevance)

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INTRODUCTION

STATE AID POLICY AND THE ETS DIRECTIVE

1. Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 ⁽¹⁾ established a scheme for greenhouse gas emission allowance trading within the Union (the EU ETS), while Directive 2009/29/EC ⁽²⁾ improved and extended the EU ETS with effect from 1 January 2013. Directive 2003/87/EC as amended ⁽³⁾ is hereinafter referred to as 'the ETS Directive'. Directive 2009/29/EC is part of a legislative package containing measures to fight climate change and promote renewable and low-carbon energy. That package was mainly designed to achieve the Union's overall environmental target of a 20 % reduction in greenhouse gas emissions compared to 1990 and a 20 % share of renewable energy in the Union's total energy consumption by 2020.
2. The ETS Directive provides for the following special and temporary measures for certain undertakings: 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'), investment aid to highly efficient power plants, including new power plants that are ready for the environmentally safe capture and geological storage of CO₂ (CCS-ready), optional transitional free allowances in the electricity sector in some Member States and the exclusion of certain small installations from the EU ETS if the greenhouse gas emission reductions can be achieved outside the framework of the EU ETS at lower administrative cost.
3. The special and temporary measures provided for in the context of implementation of the ETS Directive involve State aid within the meaning of Article 107(1) of the Treaty on the Functioning of the European Union. In accordance with Article 108 of the Treaty, State aid must be notified by Member States to the Commission and may not be put into effect until it is approved by the Commission.
4. In order to ensure transparency and legal certainty, these Guidelines explain the compatibility criteria that will be applied to these State aid measures in the context of the greenhouse gas emission allowance trading scheme, as improved and extended by Directive 2009/29/EC.
5. In line with the balancing test formulated in the 2005 State aid action plan ⁽⁴⁾, the primary objective of State aid control in the context of implementation of the EU ETS is to ensure that State aid measures will result in a higher reduction of greenhouse gas emissions than would occur without the aid and 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.
6. Since the provisions introduced by Directive 2009/29/EC will apply as from 1 January 2013, State aid cannot be deemed necessary to lessen any burden resulting from this Directive before that date. Consequently, the measures covered by these Guidelines may only be authorised for costs incurred on or after 1 January 2013, except for the aid involved in optional transitional free allocation for the modernisation of electricity generation (in some Member States), which may comprise, under certain conditions, investments undertaken as from 25 June 2009 included in the national plan.

⁽¹⁾ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32).

⁽²⁾ Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (OJ L 140, 5.6.2009, p. 63).

⁽³⁾ Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 (OJ L 338, 13.11.2004, p. 18); Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008 (OJ L 8, 13.1.2009, p. 3); Regulation (EC) No 219/2009 of the European Parliament and of the Council of 11 March 2009 (OJ L 87, 31.3.2009, p. 109).

⁽⁴⁾ State aid action plan — Less and better targeted State aid: a roadmap for State aid reform 2005 to 2009, COM(2005) 107 final, 7.6.2005.

1. SPECIFIC MEASURES COVERED BY THESE GUIDELINES

1.1. Aid to undertakings in sectors and subsectors deemed to be exposed to a significant risk of carbon leakage due to EU ETS allowance costs passed on in electricity prices (aid for indirect emission costs)

7. Under Article 10a(6) of the ETS Directive, Member States may grant State aid in favour of sectors or subsectors deemed to be exposed to a significant risk of carbon leakage due to costs relating to greenhouse gas emissions passed on in electricity prices (hereinafter referred to as 'indirect emission costs'), in order to compensate for those costs in accordance with State aid rules. For the purposes of these Guidelines, 'carbon leakage' describes the prospect of an increase in global greenhouse gas emissions when companies shift production outside the Union because they cannot pass on the cost increases induced by the EU ETS to their customers without significant loss of market share.
8. Addressing the risk of carbon leakage serves an environmental objective, since the aid aims to avoid an increase in global greenhouse gas emissions due to shifts of production outside the Union, in the absence of a binding international agreement on reduction of greenhouse gas emissions. At the same time, aid for indirect emission costs may have a negative impact on the efficiency of the EU ETS. If poorly targeted, the aid would relieve the beneficiaries of the cost of their indirect emissions, thereby limiting incentives for emission reductions and innovation in the sector. As a result, the costs of reducing emissions would have to be borne mainly by other sectors of the economy. Furthermore, such State aid may result in significant distortions of competition in the internal market, in particular whenever undertakings in the same sector are treated differently in different Member States due to different budgetary constraints. Therefore, these Guidelines need to address three specific objectives: minimising the risk of carbon leakage, preserving the EU ETS objective to achieve cost-efficient decarbonisation and minimising competition distortions in the internal market.
9. During the process of adopting Directive 2009/29/EC, the Commission issued a statement ⁽⁵⁾ setting out the main principles it intended to apply in respect of State aid for indirect emission costs in order to avoid undue distortions of competition.
10. The Commission assessed, at Union level, the extent to which it is possible for a sector or subsector to pass on indirect emission costs into product prices without significant loss of market share to less carbon-efficient installations outside the Union.
11. The maximum aid amount that Member States can grant must be calculated according to a formula that takes into account the installation's baseline production levels or the installation's baseline electricity consumption levels as defined in these Guidelines, as well as the CO₂ emission factor for electricity supplied by combustion plants in different geographic areas. In case of electricity supply contracts that do not include any CO₂ costs, no State aid will be granted. The formula ensures that the aid is proportionate and that it maintains the incentives for electricity efficiency and the transition from 'grey' to 'green' electricity, in accordance with the recital 27 of Directive 2009/29/EC.
12. Furthermore, in order to minimise competition distortions in the internal market and preserve the objective of the EU ETS to achieve a cost-effective decarbonisation, the aid must not fully compensate for the costs of EUAs in electricity prices and must be reduced over time. Degressive aid intensities are fundamental in operating State aid to avoid aid dependency. Moreover, they will maintain both the long-term incentives for full internalisation of the environmental externality and the short-term incentives to switch to less CO₂-emitting generation technologies, while underlining the temporary nature of the aid and contributing to the transition towards a low-carbon economy.

⁽⁵⁾ Annex II to Annex 15713/1/08REV1 of 18 November 2008 (25.11), <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P6-TA-2008-0610&format=XML&language=EN>

1.2. Investment aid to highly efficient power plants, including new power plants that are carbon capture and storage (CCS)-ready

13. In accordance with the Commission statement to the European Council ⁽⁶⁾ regarding Article 10(3) of the ETS Directive on the use of revenues generated from the auctioning of allowances, Member States may use those revenues, between 2013 and 2016, to support the construction of highly efficient power plants, including new power plants that are carbon capture and storage (CCS)-ready. As a *minus* to this definition, under Article 33 of Council Directive 2009/31/EC of 23 April 2009 on the geological storage of carbon dioxide ⁽⁷⁾, Member States must ensure that operators of combustion plants with a rated electrical output exceeding 300 MW have assessed certain conditions, namely, whether suitable storage sites are available, whether transport facilities are technically and economically feasible, and whether it is technically and economically feasible to retrofit for CO₂ capture. Where the assessment is positive, suitable space on the installation site for the equipment necessary to capture and compress CO₂ has to be set aside ⁽⁸⁾.
14. That aid must seek to increase the protection of the environment resulting in lower CO₂ emissions compared to the state-of-the-art technology and target a market failure by having a substantial impact on environmental protection. The aid must be necessary, have an incentive effect and be proportional. Aid for CCS (carbon capture and storage) implementation does not fall within the scope of these Guidelines and is already assessed under other existing State aid rules, in particular, the Guidelines on State aid for environmental protection ⁽⁹⁾.
15. In order to ensure proportionality of the aid, the maximum aid intensities must vary depending on the contribution to the increase of environmental protection and reduction of CO₂ emissions (objective of the ETS Directive) of the new power plant. Therefore, start of implementation of the full CCS chain (i.e. construction and effective start of capture, transport and storage of CO₂) by new power plants before 2020 must be rewarded as compared to new power plants with CCS-readiness, but without start of CCS implementation before 2020. In addition, when considering two similar projects for new CCS-ready power plants, the permissible maximum aid intensities shall be higher for projects chosen in a genuinely competitive bidding process based on clear, transparent and non-discriminatory criteria, which will effectively ensure that the aid is limited to the minimum necessary and promotes competition in the electricity generation market. Under such circumstances, it can be assumed that the respective bids reflect all possible benefits that might flow from the additional investment.

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

16. Under Article 10c of the ETS Directive, Member States fulfilling certain conditions, relating to the interconnectivity of their national electricity network or their share of fossil fuels in electricity production and the level of GDP per capita in comparison to the Union's average, have the option to temporarily deviate from the principle of full auctioning and grant free allowances to electricity generators in operation by 31 December 2008 or to electricity generators for which the modernisation investment process was physically initiated by 31 December 2008. In exchange for granting free allowances to power generators, eligible Member States have to present a national investment plan ('national plan') setting out the investments undertaken by the recipients of the free allowances or by other operators in retrofitting and upgrading the infrastructure, in clean technologies and in diversifying their energy mix and sources of supply.

⁽⁶⁾ Addendum to 'I/A' Note from General Secretariat of the Council to COREPER/COUNCIL 8033/09 ADD 1 REV 1 of 31 March 2009.

⁽⁷⁾ Directive 2009/31/EC of 23 April 2009 and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (OJ L 140, 5.6.2009, p. 114).

⁽⁸⁾ OJ C 82, 1.4.2008, p. 1.

⁽⁹⁾ See footnote 8.

17. That derogation from the principle of full auctioning through the provision of transitional free allowances involves State aid within the meaning of Article 107(1) of the Treaty, because Member States forego revenues by granting free allowances and give a selective advantage to power generators. Power generators may compete with power generators in other Member States, which may, as a result, distort or threaten to distort competition and affect trade in the internal market. State aid is also involved at the level of investments that recipients of free allowances will undertake at a reduced cost.

1.4. Aid involved in the exclusion of small installations and hospitals from the EU ETS

18. Under Article 27 of the ETS Directive, Member States may exclude small installations and hospitals from the EU ETS, as long as they are subject to measures that achieve equivalent reduction of greenhouse gas emissions. Member States may propose measures applying to small installations and hospitals that will achieve a contribution to emission reductions equivalent to those achieved by the EU ETS. That possibility of excluding them from the EU ETS is intended to offer the maximum gain, in terms of reducing administrative costs for each tonne of CO₂ equivalent excluded from the ETS.
19. The exclusion of small installations and hospitals from the EU ETS may involve State aid. Member States have a wide margin of discretion in deciding whether to exclude small installations from the EU ETS and, if so, which type of installation to exclude and which type of measures to require. Therefore, it cannot be excluded that the measures imposed by Member States may amount to an economic advantage in the favour of small installations or hospitals excluded from the EU ETS that is likely to distort or threaten to distort competition and affect trade in the internal market.

2. SCOPE OF APPLICATION AND DEFINITIONS

2.1. Scope of application of these Guidelines

20. These Guidelines apply only to the specific aid measures provided for in the context of implementation of the ETS Directive. The Community Guidelines on State aid for environmental protection⁽¹⁰⁾ do not apply to these measures.

2.2. Definitions

21. For the purposes of these Guidelines, the definitions laid down in Annex I will apply.

3. COMPATIBLE AID MEASURES UNDER ARTICLE 107(3) OF THE TREATY

22. State aid may be declared compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty if it leads to increased environmental protection (reduction of greenhouse gas emissions) without adversely affecting trading conditions to an extent contrary to the common interest. In assessing the compatibility of an aid measure, the Commission balances the positive impact of the aid measure in reaching an objective in the common interest against its potentially negative side effects, such as distortion of trade and competition. For that reason, the duration of aid schemes must not be longer than the duration of these Guidelines. This is without prejudice to the possibility for a Member State to re-notify a measure extending beyond the time limit set by the Commission decision authorising the aid scheme.

3.1. Aid to undertakings in sectors and subsectors deemed to be exposed to a significant risk of carbon leakage due to EU ETS allowance costs passed on in electricity prices (aid for indirect emission costs)

23. For sectors and subsectors listed in Annex II, aid to compensate for EU ETS allowance costs passed on in electricity prices as a result of implementation of the ETS Directive incurred as of 1 January 2013 will be considered compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty provided that the conditions set out in this Section are met.

⁽¹⁰⁾ See footnote 8.

Objective and necessity of aid

24. For the purposes of these Guidelines, the objective of this aid is to prevent a significant risk of carbon leakage due to EUA costs passed on in electricity prices supported by the beneficiary, if its competitors from third countries do not face similar CO₂ costs in their electricity prices and the beneficiary is unable to pass on those costs to product prices without losing significant market share.
25. For the purposes of these Guidelines, a significant risk of carbon leakage is considered to exist only if the beneficiary is active in a sector or subsector listed in Annex II.

Maximum aid intensity

26. The aid intensity must not exceed 85 % of the eligible costs incurred in 2013, 2014 and 2015, 80 % of the eligible costs incurred in 2016, 2017 and 2018 and 75 % of the eligible costs incurred in 2019 and 2020.

Maximum aid amount calculation

27. The maximum aid payable per installation for the manufacture of products within the sectors and subsectors listed in Annex II must be calculated according to the following formula:
- (a) Where electricity consumption efficiency benchmarks listed in Annex III are applicable to the products manufactured by the beneficiary, the maximum aid payable per installation for costs incurred in year *t* equals:

$$Am_{axt} = A_i_t \times C_t \times P_{t-1} \times E \times BO$$

In this formula, A_i_t is the aid intensity at year *t*, expressed as a fraction (e.g. 0,8); C_t is the applicable CO₂ emission factor (tCO₂/MWh) (at year *t*); P_{t-1} is the EUA forward price at year *t*-1 (EUR/tCO₂); *E* is the applicable product-specific electricity consumption efficiency benchmark defined in Annex III; and *BO* is the baseline output. These concepts are defined in Annex I.

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

$$Am_{axt} = A_i_t \times C_t \times P_{t-1} \times EF \times BEC$$

In this formula, A_i_t is the aid intensity at year *t*, expressed as a fraction (e.g. 0,8); C_t is the applicable CO₂ emission factor (tCO₂/MWh) (at year *t*); P_{t-1} is the EUA forward price at year *t*-1 (EUR/tCO₂); *EF* is the fall-back electricity consumption efficiency benchmark; and *BEC* is the baseline electricity consumption (MWh). These concepts are defined in Annex I.

28. If an installation manufactures products for which an electricity consumption efficiency benchmark listed in Annex III 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.
29. If an installation manufactures products that are eligible for aid (i.e. they fall within the eligible sectors or subsectors listed in Annex II) and products that are not eligible for aid, the maximum aid payable shall be calculated only for the products that are eligible for aid.
30. Aid may be paid to the beneficiary in the year in which the costs are incurred or in the following year. 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.

Incentive effect

31. The incentive effect requirement is presumed to be met if all the conditions in Section 3.1 are fulfilled.

3.2. Investment aid to new highly efficient power plants, including new power plants which are CCS-ready

32. Investment aid granted between 1 January 2013 and 31 December 2016 for new highly efficient power plants will be considered compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty provided the conditions set out in this Section are met.
33. Investment aid to new highly efficient power plants may be granted only if each of the following conditions is met:
- (a) the new highly efficient power plant exceeds the harmonised efficiency reference value of the power plants set out in Annex I to Commission Implementing Decision 2011/877/EU of 19 December 2011 establishing harmonised efficiency reference values for separate production of electricity and heat in application of Directive 2004/8/EC of the European Parliament and of the Council ⁽¹⁾ or the relevant efficiency reference value in force when the aid is granted. New highly efficient power plants which merely comply with those efficiency reference values shall not be eligible for aid; and
 - (b) the aid granting authority's approval decision is taken between 1 January 2013 and 31 December 2016.

Objective and necessity of the aid

34. Member States must demonstrate that the aid targets a market failure by having a substantial impact on the environmental protection. Aid must have an incentive effect in that it results in a change in the behaviour of the aid beneficiary; that incentive effect shall be demonstrated through a counterfactual scenario providing evidence that without the aid the beneficiary would not have undertaken the investment. In addition, the aided project must not start before the submission of the aid application. Finally, Member States must demonstrate that the aid does 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 level of company group).

Eligible costs

35. The eligible costs will be limited to the total costs of investment in the new installation (tangible and intangible assets) which are strictly necessary for the construction of the new power plant. In addition, in the case of construction of a CCS-ready power plant, the costs of demonstrating the overall economic and technical feasibility of implementing a full CCS chain will be eligible. The costs of installing capture, transport and storage equipment will not be eligible costs under these Guidelines, since aid for CCS implementation is already assessed under the Guidelines on State aid for environmental protection.

Maximum aid intensities

36. For new highly efficient power plants that are CCS-ready and start implementation of the full CCS chain before 2020, the aid must not exceed 15 % of the eligible costs.
37. For new highly efficient power plants which are CCS-ready but do not start implementing the full CCS chain before 2020 and for which aid is granted after a genuinely competitive bidding process that promotes (i) the most environmentally-friendly power generation technologies in the new plant resulting in lower CO₂ emissions compared to the state-of-the-art technology and (ii) competition on the electricity generation market, the aid must not exceed 10 % of the eligible costs. Such a bidding process must be based on clear, transparent and non-discriminatory criteria and provide for the participation of a sufficient number of undertakings. In addition, the budget related to the bidding process must be a binding constraint, in the sense that not all participants can receive aid.

⁽¹⁾ OJ L 343, 23.12.2011, p. 91.

38. For new highly efficient power plants that do not meet the conditions of points 36 and 37 above, the aid must not exceed 5 % of the eligible costs.
39. In case of non-start of implementation of the full CCS chain before 2020, the aid shall be reduced to 5 % of the eligible costs of the investment, or to 10 % if the conditions set in Section 3.2, paragraph 37 above are met. In case of upfront payment of the aid, Member States shall claw-back the exceeding aid amount.

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

40. From 1 January 2013 to 31 December 2019, State aid involved in transitional and optional free allowances for the modernisation of electricity generation and the investments included in the national plans, in accordance with Article 10c of the ETS Directive, will be considered compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty provided all the following conditions are met:
- (a) the transitional free allowance is granted pursuant to Article 10c of the ETS Directive and in accordance with the Commission Decision on guidance on the methodology to transitionally allocate free allowances to installations for electricity production pursuant to Article 10c(3) of the ETS Directive⁽¹²⁾ and the Commission Communication on the optional application of Article 10c of the ETS Directive⁽¹³⁾;
 - (b) the national plan pursues an objective in the common interest, such as increased environmental protection, in the light of the overall objectives of the ETS Directive;
 - (c) the national plan includes investments in retrofitting and upgrading of the infrastructure, in clean technologies and in diversification of their energy mix and sources of supply in accordance with the ETS Directive undertaken after 25 June 2009;
 - (d) the market value (at the level of company groups) of free allowances during the whole allocation period (calculated in accordance with the Commission Communication of 29 March 2011⁽¹⁴⁾ or the relevant guidance document applicable when the aid is granted) does not exceed the total costs for investments undertaken by the recipient of free allowances (at the level of company groups). If the total investment costs are lower than the market value of the allowances or the recipient of the free allowances does not undertake any investment eligible under the national plan, the recipients of free allowances must transfer the difference to a mechanism that will finance other investments eligible under the national plan; and
 - (e) the aid does 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 level of company group).

Incentive effect

The incentive effect is deemed fulfilled for investments undertaken as from 25 June 2009.

Eligible costs

41. Eligible costs must be limited to the total investment costs (tangible and intangible assets) as listed in the national plan corresponding to the market value of free allowances (calculated in accordance with the Commission Communication of 29 March 2011⁽¹⁵⁾ or the relevant guidance document applicable when the aid is granted) granted per beneficiary, irrespective of operating costs and benefits of the corresponding installation.

⁽¹²⁾ Commission Communication of 29 March 2011 on guidance on the methodology to transitionally allocate free allowances to installations in respect of electricity production pursuant to Article 10c(3) of Directive 2003/87/EC, C(2011) 1983 final, 29.3.2011.

⁽¹³⁾ Communication from the Commission, Guidance document on the optional application of Article 10c of Directive 2003/87/EC (OJ C 99, 31.3.2011, p. 9).

⁽¹⁴⁾ See footnote 13.

⁽¹⁵⁾ See footnote 13.

Maximum aid intensity

42. Aid must not exceed 100 % of the eligible costs.

3.4. Aid involved in the exclusion of small installations and hospitals from the EU ETS

43. Aid involved in the exclusion of small installations or hospitals exempted from the EU ETS as from 1 January 2013 will be considered compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty provided the small installations or hospitals are subject to measures that achieve equivalent greenhouse gas emissions reduction within the meaning of Article 27 of the ETS Directive and provided that the Member State complies with the conditions laid down in Article 27 of the ETS Directive.

Incentive effect

44. The incentive effect requirement is presumed to be met if all the conditions in Section 3.4 are fulfilled.

3.5. Proportionality

45. Member State must demonstrate that the aid amount to the beneficiary is limited to the minimum necessary. In particular, Member States may grant aid with lower aid intensities than those mentioned in these Guidelines.

4. CUMULATION

46. The aid ceilings set out in these Guidelines must not be exceeded regardless of whether the support is financed entirely from State resources or is partly financed by the Union.
47. Aid deemed to be compatible under these Guidelines may not be combined with other State aid within the meaning of Article 107(1) of the Treaty or with other forms of financing from the Union if such overlapping results in aid intensity higher than that laid down in these Guidelines. However, where the expenditure eligible for aid for measures covered by these Guidelines is eligible in whole or in part for aid for other purposes, the common portion will be subject to the most favourable aid ceiling under the applicable rules.

5. FINAL PROVISIONS**5.1. Annual reporting**

48. In accordance with Council Regulation (EC) No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 of the EC Treaty⁽¹⁶⁾ and Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Regulation (EC) No 659/1999⁽¹⁷⁾, Member States must submit annual reports to the Commission.
49. Beyond the requirements laid down in those Regulations, annual reports for environmental aid measures must contain additional information on the respective approved schemes. In particular, Member States must include in their annual reports the following information:
- the names of the beneficiary and the aided installations under its ownership,
 - the sector(s) or subsector(s) in which the beneficiary is active,
 - the year for which the aid is being paid and the year in which it is being paid,
 - the *baseline output* for each aided installation in the pertinent (sub)sector,
 - the *significant capacity extensions* or reductions, where relevant,
 - yearly production for each aided installation in the pertinent (sub)sectors for each of the years used to determine the *baseline output*,

⁽¹⁶⁾ OJ L 83, 27.3.1999, p. 1.

⁽¹⁷⁾ OJ L 140, 30.4.2004, p. 1.

- yearly production for each aided installation in the pertinent (sub)sector for the year for which aid is being paid,
 - yearly production of other products manufactured by each aided installation not covered by *electricity consumption efficiency benchmarks* for each of the years used to determine the *baseline output* (if any aid is given using a *fall back electricity consumption efficiency benchmark*),
 - the *baseline electricity consumption* for each aided installation (if any aid is given using a *fall back electricity consumption efficiency benchmark*),
 - yearly electricity consumption for each of the years used to determine the *baseline electricity consumption* (if any aid is given using a *fall back electricity consumption efficiency benchmark*),
 - yearly electricity consumption of the installation for the year for which aid is being paid (if any aid is given using a *fall back electricity consumption efficiency benchmark*),
 - the *EUA forward price* used to compute the aid amount per beneficiary,
 - the *aid intensity*,
 - the national *CO₂ emission factor*.
50. The Commission will regularly monitor aid granted to undertakings in sectors and subsectors deemed to be exposed to a significant risk of carbon leakage due to EU ETS allowance costs passed on in electricity prices described in Section 3.1. In doing so, it will update its information on the size of the indirect cost pass through and the possible consequences for carbon leakage.
51. With respect to aid granted for new highly efficient power plants, including those that are CCS-ready, Member States must include in their annual reports the following information:
- the names of the beneficiaries,
 - the aid amount per beneficiary,
 - the aid intensity,
 - the verification of compliance with the conditions in section 3.2, paragraph 32 as regards the timing of granting of the aid,
 - the verification of compliance with the conditions in section 3.2, paragraph 36 as regards the start of implementation of the full CCS chain before 2020.

5.2. Transparency

52. The Commission considers that further measures are necessary to improve the transparency of State aid in the Union. In particular, it must be ensured that the Member States, economic operators, interested parties and the Commission have easy access to the full text of all applicable environmental aid schemes.
53. That goal can be achieved through the establishment of Internet sites. For that reason, when assessing aid schemes, the Commission will systematically require the Member State concerned to publish the full text of all final aid schemes on the Internet and to communicate the Internet address of the publication to the Commission.

5.3. Monitoring

54. Member States must ensure that detailed records regarding the granting of aid for all measures are maintained. Such records, which must contain all information necessary to establish that the conditions regarding eligible costs and maximum allowable aid intensity have been observed, must be maintained for 10 years from the date on which the aid was granted and be provided to the Commission upon request.

5.4. Period of application and revision

55. The Commission will apply these Guidelines from the day following that of their publication in the *Official Journal of the European Union*.

56. The Guidelines will be applicable until 31 December 2020. After consulting the Member States, the Commission may amend them before that date on the basis of important competition policy or environmental policy considerations or in order to take account of other Union policies or international commitments. Such amendments might in particular be necessary in the light of future international agreements in the area of climate change and future climate change legislation in the Union. The Commission may carry out a review of these Guidelines every two years after their adoption.
57. The Commission will apply these Guidelines to all notified aid measures in respect of which it is called upon to take a decision after the Guidelines are published in the Official Journal, even where the projects were notified prior to their publication. The Commission will apply the rules set out in the Commission Notice on the determination of the applicable rules for the assessment of unlawful State aid ⁽¹⁸⁾ to all unlawful aid.
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⁽¹⁸⁾ OJ C 119, 22.5.2002, p. 22.

ANNEX I

Definitions

For the purposes of these Guidelines the following definitions will apply:

- 'aid' means any measure fulfilling all the criteria laid down in Article 107(1) of the Treaty,
- 'aid granting period' means one or more years within the period 2013-2020. If a Member 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,
- 'maximum aid intensity' means the total aid amount expressed as a percentage of the eligible costs. 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 Commission reference rate for discounting the value over time. The aid intensity is calculated per beneficiary,
- 'auto generation' means generation of electricity by an installation that does not qualify as an 'electricity generator' within the meaning of Article 3(u) of Directive 2003/87/EC,
- 'beneficiary' means an undertaking receiving aid,
- 'CCS-ready' means that an installation has demonstrated that suitable storage sites are available, that transport facilities are technically and economically feasible and that it is technically and economically feasible to retrofit for CO₂ capture, as soon as sufficient market incentives in the form of a CO₂ price threshold are reached. In particular, *CCS-ready* requires:
 - demonstration of the technical feasibility of retrofitting for CO₂ capture. A site-specific technical study should be produced showing in sufficient engineering detail that the facility is technically capable of being fully retrofitted for CO₂ capture at a capture rate of 85 % or higher, using one or more types of technology which are proven at pre-commercial scale or whose performance can be reliably estimated as being suitable,
 - control of sufficient additional space on the site on which capture equipment is to be installed,
 - identification of one or more technically and economically feasible pipeline or other transport route(s) to the safe geological storage of CO₂,
 - identification of one or more potential storage sites which have been assessed as suitable for the safe geological storage of projected full lifetime volumes and rates of captured CO₂,
 - demonstration of the economic feasibility of retrofitting an integrated CCS system to the full/partial capacity of the facility, based on an economic assessment. The assessment should provide evidence of reasonable scenarios, taking into account CO₂ prices forecasts, the costs of the technologies and storage options identified in the technical studies, their margins of error and the projected operating revenues. The assessment will indicate the circumstances under which CCS would be economically feasible during the lifetime of the proposed installation. It should also include a potential CCS implementation plan, including a potential timetable to entry into operation,
 - demonstration that all relevant permits to implement CCS can be obtained and identification of procedures and timelines for this process,
- 'environmental protection' means any action designed to remedy or prevent damage to physical surroundings or natural resources by a beneficiary's own activities, to reduce the risk of such damage or to lead to more efficient use of natural resources, including energy-saving measures and the use of renewable sources of energy,
- 'European Union Allowance (EUA)' means a transferable allowance to emit one tonne of CO₂ equivalent during a specified period,
- 'gross value added (GVA)' means gross value added at factor costs, which is the value of output less the value of intermediate consumption. It is a measure of the contribution to GDP made by an individual producer, industry or sector. GVA at factor cost is GVA at market prices less any indirect taxes plus any subsidies. Value added at factor cost can be calculated from turnover, plus capitalised production, plus other operating income, plus or minus changes in stocks, minus purchases of goods and services, 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 ⁽¹⁾,

- ‘implementation of the full CCS chain’ means construction and effective start of capture, transport and storage of CO₂,
- ‘small installations’ means installations which have reported to the competent authority annual emissions of less than 25 000 tonnes of CO₂ equivalent and, where they carry out combustion activities, have a rated thermal input below 35 MW, excluding emissions from biomass, in each of the three years preceding the notification of equivalent measures in accordance with Article 27(1)(a) of the ETS Directive,
- ‘start of work’ means either the start of construction work or the first firm commitment to order equipment, excluding preliminary feasibility studies,
- ‘tangible assets’ means, for the purposes of calculating eligible costs, investments in land, buildings, plant and equipment,
- ‘intangible assets’ means, for the purposes of calculating eligible costs, spending on technology transfer through the acquisition of operating licences or of patented and non-patented know-how, provided the following conditions are complied with:
 - the intangible asset concerned is a depreciable asset,
 - it is purchased on market terms, from an undertaking in which the acquirer has no power of direct or indirect control,
 - it is included in the assets of the undertaking, and remain in the establishment of the recipient of the aid and is used there for at least five years. This condition does not apply if the intangible asset is technically out of date. If the intangible asset is sold during those five years, the yield from the sale must be deducted from the eligible costs and all or part of the amount of aid must, where appropriate, be reimbursed,
- ‘trade intensity’ means the ratio between the total value of exports to third countries plus the value of imports from third countries and the total market size for the Union (annual domestic turnover of Union companies plus total imports from third countries) as per Eurostat statistics,
- ‘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. For example, for aid granted for 2016, it is the simple average of the December 2016 EUA closing offer prices observed from 1 January 2015 to 31 December 2015 in a given EU carbon exchange,
- ‘CO₂ emission factor’, in tCO₂/MWh, means the weighted average of the CO₂ intensity of electricity produced from fossil fuels in different geographic areas. The weight shall reflect the production mix of the fossil fuels in the given geographic area. The CO₂ factor is the result of the division of the CO₂ 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, 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 Member 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 Member States. On this basis, the following geographic areas can be identified: Nordic (Denmark, Sweden, Finland and Norway), Central-West Europe (Austria, Belgium, Luxembourg, France, Germany and Netherlands), Iberia (Portugal, Spain), Czech and Slovakia (Czech Republic and Slovakia) and all other Member States separately. The corresponding maximum regional CO₂ factors are listed in Annex IV,
- ‘baseline output’, in tonnes per year, means the average production at the installation over the reference period 2005-2011 (*baseline output*) for installations operating every year from 2005 to 2011. A given calendar year (e.g. 2009) may be excluded from that seven-year reference period. If the installation did not operate for at least one year from 2005 to 2011, then the baseline output will be defined as yearly production until there are four years of operation on record, and afterwards it will be the average of the preceding three years of that period. If, over the aid granting

⁽¹⁾ Code 12 15 0 within the legal framework established by Council Regulation (EC, Euratom) No 58/97 of 20 December 1996 concerning structural business statistics.

period, production capacity at an installation is significantly extended within the meaning of these Guidelines, the baseline output can be increased in proportion to that capacity extension. If an installation reduces its production level in a given calendar year by 50 % to 75 % compared to the baseline output, the installation will only receive half of the aid amount corresponding to the baseline output. If an installation reduces its production level in a given calendar year by 75 % to 90 % compared to the baseline output, the installation will only receive 25 % of the aid amount corresponding to the baseline output. If an installation reduces its production level in a given calendar year by 90 % or more compared to the baseline output, the installation will receive no aid,

- 'baseline electricity consumption', in MWh, means the average electricity consumption at the installation (including electricity consumption for the production of out-sourced products eligible for aid) over the reference period 2005-2011 (*baseline electricity consumption*) for installations operating every year from 2005 to 2011. A given calendar year (e.g. 2009) may be excluded from that seven-year reference period. If the installation did not operate for at least one year from 2005 to 2011, the baseline electricity consumption will be defined as yearly electricity consumption until there are four years of operation on record, and afterwards it will be defined as the average of the preceding three years for which operation has been recorded. If, over the aid granting period, an installation significantly extends its production capacity, the baseline electricity consumption can be increased in proportion to this capacity extension. If an installation reduces its production level in a given calendar year by 50 % to 75 % compared to the baseline output, the installation will only receive half of the aid amount corresponding to the baseline electricity consumption. If an installation reduces its production level in a given calendar year by 75 % to 90 % compared to the baseline output, the installation will only receive 25 % of the aid amount corresponding to the baseline electricity consumption. If an installation reduces its production level in a given calendar year by 90 % or more compared to the baseline output, the installation will receive no aid,
- 'significant capacity extension' means a significant increase in an installation's initial installed capacity whereby all following occur:
 - one or more identifiable physical changes relating to its technical configuration and functioning take place other than the mere replacement of an existing production line, and
 - the installation can be operated at a capacity that is at least 10 % higher compared to the installation's initial installed capacity before the change and it results from a physical capital investment (or a series of incremental physical capital investments),

The installation must submit to the national aid granting authority evidence demonstrating that the criteria for a significant capacity extension have been met and that the significant capacity extension has been verified as satisfactory by an independent verifier. The verification should address the reliability, credibility and accuracy of the data provided by the installation and should deliver a verification opinion that states with reasonable assurance that the data submitted are free from material misstatements,

- 'electricity consumption efficiency benchmark', in MWh/tonne of output and defined at Prodcum 8 level, means the product-specific electricity consumption per tonne of output achieved by the most electricity-efficient methods of production for the product considered. For products within the eligible sectors for which fuel and electricity exchangeability has been established in the Commission Decision 2011/278/EU ⁽¹⁾, the definition of electricity consumption efficiency benchmarks is made within the same system boundaries, taking into account only the share of electricity. The corresponding electricity consumption benchmarks for products covered by eligible sectors and subsectors are listed in Annex III.
- 'fall back electricity consumption efficiency benchmark', per cent of baseline electricity consumption. This parameter shall be determined via a Commission 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/*ex-ante* electricity consumption). It is applied for all products which fall within eligible sectors or subsectors, but for which an electricity consumption efficiency benchmark is not defined.

⁽¹⁾ Commission Decision 2011/278/EU of 27 April 2011 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 130, 17.5.2011, p. 1). Annex I.2 to this Decision lists a number of products where such fuel substitutability has been deemed to exist, at least to a certain extent.

ANNEX II

Sectors and subsectors deemed *ex-ante* to be exposed to a significant risk of carbon leakage due to indirect emission costs

For the purposes of these Guidelines, an aid beneficiary's installation may receive State aid for indirect emission costs under Section 3.3 of these Guidelines, only if it is active in one of the following sectors and subsectors. No other sectors and subsectors will be considered eligible for such aid.

	NACE code ⁽¹⁾	Description
1.	2742	Aluminium production
2.	1430	Mining of chemical and fertiliser minerals
3.	2413	Manufacture of other inorganic chemicals
4.	2743	Lead, zinc and tin production
5.	1810	Manufacture of leather cloths
6.	2710	Manufacture of basic iron and steel and of ferro-alloys, including seamless steel pipes
7.	2112	Manufacture of paper and paperboard
8.	2415	Manufacture of fertilisers and nitrogen compounds
9.	2744	Copper production
10.	2414	Manufacture of other organic basic chemicals
11.	1711	Spinning of cotton-type fibres
12.	2470	Manufacture of man-made fibres
13.	1310	Mining of iron ores
14.		The following subsectors within the Manufacture of plastics in primary forms sector (2416):
	24161039	Low-density polyethylene (LDPE)
	24161035	Linear low-density polyethylene (LLDPE)
	24161050	High-density polyethylene (HDPE)
	24165130	Polypropylene (PP)
	24163010	Polyvinyl chloride (PVC)
	24164040	Polycarbonate (PC)
15.		The following subsector within the Manufacture of pulp sector (2111):
	21111400	Mechanical pulp

⁽¹⁾ According to NACE rev.1.1: http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_CLS_DLD&StrNom=NACE_1_1&StrLanguageCode=EN&StrLayoutCode=HIERARCHIC

Explanatory note regarding the methodology for defining the sectors and subsectors eligible for aid

1. In line with Article 10a(15) of the ETS Directive, sectors or subsectors listed in the table above have been deemed to be exposed to a significant risk of carbon leakage for the purposes of these Guidelines on a quantitative basis if the intensity of trade with third countries is above 10 % and the sum of indirect additional costs induced by the implementation of the ETS Directive would lead to a substantial increase in production costs, calculated as a proportion of the gross value added, amounting to at least 5 %.

2. In calculating the indirect costs for the purposes of eligibility under these Guidelines, the same CO₂ price assumption and the same average EU emission factor for electricity is applied as in Commission Decision 2010/2/EU⁽¹⁾. The same data on trade, production and value added for each sector or subsector are used as in Commission Decision 2010/2/EU. The computation of the trade intensities relies on exports and imports to all countries outside the EU, regardless of whether those non-EU countries impose any CO₂ pricing (through carbon taxes, or cap-and-trade systems similar to the ETS). It is also assumed that 100 % of the CO₂ cost will be passed on in electricity prices.
3. Similar with the provisions in Article 10a(17) of the ETS Directive, in determining the eligible sectors and subsectors listed in the table above, the assessment of sectors on the basis of quantitative criteria set out in paragraph 1 above has been supplemented with a qualitative assessment, where relevant data are available and industry representatives or Member States have made sufficiently plausible and substantiated claims in favour of eligibility. The qualitative assessment was applied, firstly, to borderline sectors, i.e. NACE-4 sectors which face increased indirect emission costs in the range of 3-5 % and a trade intensity of at least 10 %; secondly, to sectors and subsectors (including at Prodcom level⁽²⁾) for which official data are missing or are of poor quality; and, thirdly, to sectors and subsectors (including at Prodcom level) that can be considered to have been insufficiently represented by the quantitative assessment. Sectors or subsectors with less than 1 % indirect CO₂ costs have not been considered.
4. The qualitative eligibility assessment focused, firstly, on the size of the asymmetric indirect CO₂ cost impact as a share of the sector's gross value added. The asymmetric cost impact must be sufficiently large to entail a significant risk of carbon leakage due to indirect CO₂ costs. Indirect CO₂ costs of more than 2,5 % were considered to fulfil this criterion. Secondly, in addition, account was taken of available market related evidence indicating that the (sub)sector cannot pass on the increased indirect emission costs to its clients without losing significant market share in favour of its third country competitors. As an objective proxy to that end, a sufficiently high trade intensity of at least 25 % was deemed necessary for that second criterion to be fulfilled. In addition, the second criterion required substantiated information indicating that the EU sector concerned is on the whole likely to be price-taker (e.g. prices set at commodity exchanges or evidence of price correlations across macro-regions); such evidence was supported by further information where available, on the international demand and supply situation, transport costs, profit margins and CO₂ abatement potential. Thirdly, fuel and electricity exchangeability for products in the sector, as established by the Commission Decision 2011/278/EU⁽³⁾ was also taken into account.
5. The results of both qualitative and quantitative assessments are reflected in the list of eligible sectors and subsectors set in this Annex, which is closed and may only be reviewed during the mid-term review of these Guidelines.

⁽¹⁾ Commission Decision of 24 December 2009 determining, pursuant to Directive 2003/87/EC of the European Parliament and of the Council, a list of sectors and subsectors which are deemed to be exposed to a significant risk of carbon leakage (OJ L 1, 5.1.2010, p. 10).

⁽²⁾ Production Communautaire list, available at: http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=PRD_2010&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC

⁽³⁾ Commission Decision 2011/278/EU of 27 April 2011 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 130, 17.5.2011, p. 1). Annex I.2 to this Decision lists a number of products where such fuel substitutability has been deemed to exist, at least to a certain extent.

ANNEX III

Electricity consumption efficiency benchmarks for products covered by the NACE codes in Annex II

NACE code	Product defined at Prodcom 8 level	Benchmark MWh/T
	[product 1] ... [product 2] ... [product 3] per [t]
	[product 1] ... [product 2] ... [product 3] ...	
	[product 1] ... [product 2] ... [product 3] ...	
	[product 1] ... [product 2] ... [product 3] ...	

ANNEX IV

Maximum regional CO₂ emission factors in different geographic areas (tCO₂/MWh)

		Electricity
Central-West Europe	Austria, Belgium, France, Germany, Netherlands, Luxembourg	0,76
Czech and Slovakia	Czech Republic, Slovakia	1,06
Iberia	Portugal, Spain	0,57
Nordic	Denmark, Sweden, Finland, Norway	0,67
Bulgaria		1,12
Cyprus		0,75
Estonia		1,12
Greece		0,82
Hungary		0,84
Ireland		0,56
Italy		0,60
Latvia		0,60
Lithuania		0,60
Malta		0,86
Poland		0,88
Romania		1,10
Slovenia		0,97
United Kingdom		0,58

Explanatory note regarding maximum regional CO₂ emission factors

In order to ensure equal treatment of sources of electricity and avoid possible abuses, the same CO₂ emission factor applies to all sources of electricity supply (auto generation, electricity supply contracts or grid supply) and to all aid beneficiaries in the Member State concerned.

The method for establishing the maximum aid amount takes into account the CO₂ emission factor for electricity supplied by combustion plants in different geographic areas. 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 Commission determined *ex-ante* the abovementioned regional value(s) of the CO₂ emission factors, which constitute maximum values for the calculation of the aid amount. However, Member States may apply a lower CO₂ emission factor for all beneficiaries in their territory.