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draft Guidelines on environmental and energy aid for 2014-2020**

(Text with EEA relevance)

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Introduction

- (1) In order to prevent that State aid results in distortion of competition in the internal market and affects trade between Member States in a way which is contrary to the common interest, Article 107(1) of the Treaty on the Functioning of the European Union ("the Treaty") lays down the principle that state aid is prohibited. In certain cases, however, such aid may be compatible with the Treaty on the basis of Articles 107(2) and (3).
- (2) On the basis of Article 107(3)(c) of the Treaty, the Commission may consider compatible with the internal market State aid to facilitate the development of certain economic activities within the European Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest. Aid may be considered compatible on the basis of Article 107(3)(b) of the Treaty to promote the execution of an important projects of common European interest or to remedy a serious disturbances in the economy of Member State.
- (3) Article 191 of the Treaty stipulates the objectives of the Union environmental policy and Article 194 of the Treaty lays down the aims of the Union energy policy.
- (4) The Europe 2020 strategy¹ focuses on creating the conditions for smart, sustainable and inclusive growth. To this end, a number of headline targets have been set, including targets for climate change and energy sustainability: (i) a 20% reduction in EU greenhouse gas emissions from 1990 levels; (ii) raising the share of EU energy consumption produced from renewable resources to 20%; (iii) a 20% improvement in the EU's energy efficiency
- (5) The sustainable growth targets are particularly important for these Guidelines. In order to support achieving those targets, the Europe 2020 strategy put forward the "Resource efficient Europe" as one of the seven flagship initiatives². This flagship initiative aims to create a framework for policies to support the shift towards a resource-efficient and low-carbon economy which helps to:
 - (a) boost economic performance while reducing resource use;
 - (b) identify and create new opportunities for economic growth and greater innovation and boost the EU's competitiveness;
 - (c) ensure security of supply of essential resources;
 - (d) fight against climate change and limit the environmental impacts of resource use.
- (6) In this context it should be recalled that the Resource Efficiency Roadmap³ calls for a phasing out of environmental harmful subsidies⁴. These

¹ COM(2010) 2020 final of 3.3.2010.

² COM(2011) 21 of 26.1.2011.

³ COM(2011) 571 final of 20.9.2011.

Guidelines should therefore consider negative impacts on the phasing out of environmental harmful subsidies, while taking into account the need to address trade-offs between different areas and policies as recognised by the flagship initiative.

- (7) The Roadmap also calls on Member States to ensure compliance with EU environmental legislation to improve the benefits from EU environmental legislation⁵. To avoid that State aid measures lead to environmental harm, in particular Member States need to carry out an environmental impact assessment when it is required by EU law and ensure all relevant permits.
- (8) In these Guidelines, the Commission sets out the conditions under which aid for energy and environment may be considered compatible with the internal market on the basis of Article 107(3)(c) [and 107(3)(b)] of the Treaty.
- (9) In the Communication on state aid modernisation⁶, the Commission announced three objectives pursued through the modernisation of state aid control:
 - (a) to foster sustainable, smart and inclusive growth in a competitive internal market;
 - (b) to focus Commission ex ante scrutiny on cases with the biggest impact on the internal market while strengthening the cooperation with Member States in state aid enforcement;
 - (c) to streamline the rules and provide for faster decisions.
- (10) In particular, the Communication called for a common approach in the revision of the different guidelines and frameworks based on strengthening the internal market, promoting more effectiveness in public spending through a better contribution of state aid to the objectives of common interest, greater scrutiny on the incentive effect, on limiting the aid to the minimum, and on avoiding the potential negative effects of the aid on competition and trade. The compatibility conditions set out in these guidelines are based on those common assessment principles.

⁴ The European Council Conclusions from 23 May 2013 confirmed the need to phase out environmentally or economically harmful subsidies, including for fossil fuels, to facilitate investments in new and intelligent energy infrastructure.

⁵ Other legislation such as the Renewable Energy Directive (2009/28/EC) includes for instance requirements concerning sustainability of biofuels and non-discrimination in Article 17(1) - 17(8).

⁶ COM(2012) 209 of 8.5.2012.

1. Scope and definitions

- (11) These Guidelines apply to State aid for environmental protection, including CO₂ capture, transport and storage (CCS)⁷, energy infrastructure and capacity mechanisms.
- (12) These Guidelines apply to aid granted in all sectors governed by the Treaty. They also apply to those sectors which are subject to specific Union rules on State aid (transport, coal, agriculture, forestry, and fisheries and aquaculture) unless such specific rules provide otherwise.
- (13) These Guidelines do not apply to
- (a) the design and manufacture of environmentally friendly products, machines or means of transport with a view to operating with fewer natural resources and action taken within plants or other production units with a view to improving safety or hygiene;
 - (b) the financing of environmental protection measures relating to air, road, railway, inland waterway and maritime transport infrastructure.
 - (c) the support of biodiversity measures. Those measures usually fall in the scope of the rules set out for Services of General Economic Interest⁸.
- (14) Aid may not be awarded to firms in difficulties as defined, pursuant to these Guidelines, by the applicable Community guidelines on state aid for rescue and restructuring undertakings in difficulty⁹ as amended or replaced.
- (15) When assessing aid in favour of an undertaking which is subject to an outstanding recovery order following a previous Commission decision declaring an aid illegal and incompatible with the internal market, the Member State has to ensure that such beneficiaries are excluded from the aid or provide for recovery. The Commission will take account of the amount of aid still to be recovered¹⁰.
- (16) For agriculture and fisheries and aquaculture, those Guidelines apply to aid for environmental protection in favour of undertakings active in the processing and marketing of products. For undertakings active in the processing and marketing of fisheries products, if the aid concerns expenses eligible under Council Regulation (EC) No 1198/2006 of 27 July 2006 on the European Fisheries Fund¹¹ or its successor¹², the maximum aid rate allowed is the higher of the aid rate provided for in these Guidelines and the aid rate laid down in that Regulation. In the field of agricultural primary production and EAFRD co-financed measures, these Guidelines apply only to the extent that the Community guidelines for State aid in

⁷ This includes individual elements of the Carbon Capture Storage chain.

⁸ Cases SA.31243 (2012/N) and NN8/2009.

⁹ OJ L 244, 1.10.2004, p. 2.

¹⁰ See in this respect the joint Cases T-244/93 and T-486/93, TWD Textilwerke Deggendorf GmbH v Commission of the European Communities, [1995] ECR II-02265 and the [Notice from the Commission — Towards an effective implementation of Commission decisions ordering Member States to recover unlawful and incompatible State aid](#), OJ C 272, 15.11.2007, p. 4-17.

¹¹ OJ L 223/1, 15.8.2006.

¹² See Commission proposal for a Regulation on the European maritime and Fisheries Fund, COM(2011) 804 final.

the agriculture and forestry sector 2007 to 2013¹³ (and any Guidelines replacing them) do not provide any specific rules or where those agricultural and forestry Guidelines expressly refer to the present Guidelines. In the field of fisheries and aquaculture primary production, they apply only where no specific provisions dealing with environmental aid exist.

- (17) These Guidelines do not apply to stranded costs as defined in the Commission Communication relating to the methodology for analysing State aid linked to stranded costs¹⁴.
- (18) State aid for research, development and innovation in the environmental field is subject to the rules set out in the Community framework for State aid for research and development and innovation¹⁵.
- (19) In some cases, Member States may consider that certain services provided in the energy sector should be regarded as services of general economic interest (SGEI), within the meaning of Article 106(2) of the Treaty. As regards services of general economic interest, Member States measures have to be assessed in line with the Commission Communication on the application of the EU State aid rules to compensation granted for the provision of services of general economic interest¹⁶, the Commission Decision of 20 December 2011 on the application of Article 106(2) of the Treaty on the Functioning of the European Union to State aid in the form of public service compensation granted to certain undertakings entrusted with the operation of services of general economic interest¹⁷, the Commission Communication on a European Union framework for State aid in the form of public service compensation (2011)¹⁸ and the Commission Regulation of 25 April 2012 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to *de minimis* aid granted to undertakings providing services of general economic interest¹⁹.
- (20) The definitions for the purposes of these Guidelines are laid down in Annex 1.

¹³ OJ C 319/1, 27.12.2006. This is also valid to the framework replacing the 2006 Framework which validity ends on 31 December 2013.

¹⁴ Adopted by the Commission on 26 July 2001 and communicated to Member States by letter ref. SG(2001) D/290869, 6 August 2001.

¹⁵ OJ C 323/1, 30.12.2006. This is also valid to the framework replacing the 2006 Framework which validity ends on 31 December 2013 [duration extended?].

¹⁶ OJ C 8/4 of 11.1.2012.

¹⁷ OJ L 11/7 of 11.1.2012.

¹⁸ OJ C 8/15 of 11.1.2012.

¹⁹ OJ L 114/8 of 26.4.2012.

2. Notifiable environmental and energy aid

- (21) In principle, Member States must notify aid pursuant to Article 108(3) of the Treaty, with the exception of measures that fulfil the conditions laid down in [Commission Regulation (EU) No .../... of ... declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (General block exemption Regulation)²⁰ / a block exemption Regulation adopted by the Commission pursuant to Article 1 of Council Regulation (EC) No 994/98 of 7 May 1998 on the application of Articles 92 and 93 of the Treaty establishing the European Community to certain categories of horizontal state aid²¹].
- (22) These Guidelines will be applied to all measures notified to the Commission, either because the measure is not covered under the GBER or the GBER imposes an obligation to notify aid individually, or because the measure which meets all the criteria of the GBER is nevertheless notified to the Commission.
- (23) For measures not covered by the GBER, due to their higher potential of distorting competition and affecting trade between Member States, Member States must notify prior to their implementation any individual aid, whether granted *ad hoc*²² or based on an aid scheme, where the aid satisfies the following conditions²³:
- (a) for individual measures covered by these Guidelines²⁴, even if they are part of an approved aid scheme: all the following cases²⁵:
- i *investment aid*: where the aid amount exceeds EUR [7.5] million for one undertaking;
 - ii *operating aid for the production of renewable electricity and/or combined production of renewable heat*: when the aid is granted to renewable electricity installations in sites where the resulting renewable electricity generation capacity exceeds [125] MW;
 - iii *investment aid linked to operation for the production of biofuel*: when the aid is granted to a biofuel production installation in sites where the resulting production exceeds [150 000] t per year
 - iv *operating aid for cogeneration*: where aid is granted to cogeneration installation with the resulting cogeneration electricity capacity exceeding [200] MW. Aid for the production of heat from cogeneration will be assessed in the context of notification based on electricity capacity.

²⁰ [OJL ...].

²¹ [OJL142, 14.5.1998, p. 1.]

²² Ad hoc aid is subject to the same requirements as individual aid granted on the basis of a scheme.

²³ This also applies irrespective of whether the individual beneficiary benefits at the same time from a tax exemption or reduction falling under section 5.6.

²⁴ Tax exemptions and reductions from environmental taxes falling under section 5.6 will not be subject to the conditions for individually notified aid. However, aid granted in the form of fiscal aid not covered by section 5.6 of these guidelines will be subject to an individual assessment if the thresholds in this point are exceeded.

²⁵ For the calculation of the capacity limit, the total capacity (of the units) which is eligible for aid has to be taken into account for each project.

- v *Aid for energy infrastructure*: where the aid amount exceeds EUR [20] million for one undertaking, per investment project
- vi *Aid for Carbon Capture and Storage*: where the aid amount exceeds EUR [20] million per investment project.

3. Common Assessment Principles

- (24) To assess whether a notified aid measure can be considered compatible with the internal market, the Commission generally analyses whether the design of the aid measure ensures that the positive impact of the aid towards an objective of common interest exceeds its potential negative effects on trade and competition.
- (25) The Communication on State aid modernisation of 8 May 2012 called for the identification and definition of common principles applicable to the assessment of compatibility of all the aid measures carried out by the Commission. For this purpose, the Commission will consider a State aid measure compatible with the Treaty only if it satisfies each of the following criteria.
- (a) Contribution to a well-defined objective of common interest: the State aid measure aims at an objective of common interest in accordance with Article 107(3) of the Treaty;
 - (b) Need for state intervention: the State aid measure is targeted towards a situation where aid can bring about a material improvement that the market cannot deliver itself, by remedying a well-defined market failure;
 - (c) Appropriateness of the aid measure: the proposed aid measure is an appropriate policy instrument to address the objective of common interest;
 - (d) Incentive effect: the aid changes the behaviour of the undertaking(s) concerned in such a way that it engages in additional activity which it would not carry out without the aid or it would carry out in a restricted or different manner;
 - (e) Proportionality of the aid (aid to the minimum): the aid amount is limited to the minimum needed to incentivise the environmental behaviour or strengthen the development of the internal energy market;
 - (f) Avoidance of major undue negative effects on competition and trade between Member States: the negative effects of aid are sufficiently limited, so that the overall balance of the measure is positive;
 - (g) Transparency of aid: Member States, the Commission, economic operators, and the public, have easy access to all relevant acts and to pertinent information about the aid awarded thereunder.
- (26) The overall balance of certain categories of schemes may further be made subject to a requirement of ex post evaluation as described in section 8. In such cases, the Commission may limit the duration of those schemes (normally to four years or less) with a possibility to re-notify their prolongation afterwards.
- (27) Moreover, if a state aid measure or the conditions attached to it (including its financing method when it forms an integral part of it) entail a non-severable violation of EU law, the aid cannot be declared compatible with the internal market²⁶.
- (28) In assessing the compatibility of any individual aid with the internal market, the Commission will take account of any proceedings concerning infringements to

²⁶ See for instance Case C-156/98 *Germany v Commission* [2000] ECR I-6857, paragraph 78 and Case C-333/07 *Régie Networks v Rhone Alpes Bourgogne* [2008] ECR I-10807, paragraphs 94-116.

Articles 101 or 102 of the Treaty which may concern the beneficiary of the aid and which may be relevant for its assessment²⁷.

²⁷ See Case C-225/91 *Matra v Commission*, [1993] ECR I-3203, paragraph 42.

4. Compatibility assessment under Article 107(3)b of the Treaty

- (29) Aid to promote the execution of important projects of common European interest may be considered compatible with the common market according to Article 107(3)(b) of the Treaty.
- (30) The Commission will consider that a State aid measure is linked to an important project of common European interest in the sense of Article 107(3)b if the following conditions are fulfilled:
- (a) the project is clearly defined in respect of the terms of its implementation including its participants, its objectives and effects and the means to achieve the objectives. The Commission may also consider a group of projects as together constituting a project;
 - (b) the project is in the common European interest: the project contributes in a concrete, exemplary and identifiable manner to the Union interest in the field of environmental protection or the internal energy market, such as by being of great importance for the environmental strategy of the European Union or significantly contributing to the development of the internal energy market.
 - (c) The advantages achieved by the objective of the project are not limited to the Member State or the Member States implementing it, but must extend to the Union as a whole. The project must present a substantive contribution to the Union objectives. The fact that the project is carried out by undertakings in different Member States is not sufficient;
 - (d) the project is of great importance with regard to its volume: it is substantial in size and produce substantial environmental effects.
- (31) In order to properly assess such projects, the Commission will require the Member State to demonstrate the common European interest in practical terms: for example, it must be demonstrated that the project enables significant progress to be made towards achieving specific environmental objectives of the Union or developing the internal energy market.
- (32) In order to properly assess the case, the Commission will require the Member State to demonstrate that the aid is necessary to achieve the defined objective of common interest and that it presents an incentive for the execution of the project, which must also involve a high level of risk. This could be shown by an analysis of the level of profitability of the project, the amount of investment and time path of cash flows, as well by means of feasibility studies, risk assessments and expert opinions. The Commission will consider notified projects more favourably if they include a significant own contribution of the beneficiary to the project. It will equally consider more favourably notified projects involving undertakings from a significant number of Member States.
- (33) When the aid is considered to be compatible with the common market in accordance with Article 107(3)(b) of the Treaty, the Commission may authorise aid at higher rates than otherwise laid down in these Guidelines.
- (34) The Commission will consider the aid to be proportionate if it is limited to the minimum necessary for the achievement of the project. The maximum aid level will be determined with regard to the identified funding gap (i.e. the minimum

level of funding required to render the project sufficiently profitable) in relation to the eligible costs of the project.

5. Compatibility assessment under Article 107(3)c of the Treaty

- (35) State aid for environmental protection and energy will be considered compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty if, on the basis of the common assessment principles set out in chapter 3, it leads to an increased level of environmental protection or strengthened internal energy market without adversely affecting trading conditions to an extent contrary to the common interest.
- (36) In the present section, the Commission clarifies how it will apply on the basis of those principles when assessing aid schemes and, where applicable, lays down specific conditions for individual aid (either provided on the basis of a scheme or ad hoc).
- (37) Section 5.1 sets out the general compatibility conditions applicable to all aid measures falling within the scope of these Guidelines. Those general conditions apply unless the conditions laid down in the specific sections of this chapter provide otherwise (5.2 ff).

5.1 General compatibility provisions

5.1.1 Contribution to a common objective

5.1.1.1. General conditions for schemes

- (38) The general objective of environmental aid is to increase the level of environmental protection compared to the level that would be achieved absent the aid. The Europe 2020 strategy in particular set targets for sustainable growth to support the shift towards a resource-efficient, competitive low-carbon economy. A low carbon economy with a significant share of intermittent energy from renewable sources requires a transition of the energy system and in particular considerable investments in networks²⁸. The primary objective of aid in the energy sector is to ensure a competitive, sustainable and secure energy system in a well-functioning European energy market²⁹.
- (39) Member States intending to grant environmental or energy aid will have to define precisely the objective pursued and explain the expected contribution of the measure to this objective³⁰.

5.1.1.2. Additional conditions for individually notified aid

- (40) To demonstrate the contribution of an individually notified aid to an increased level of environmental protection, the Member State may use, as much as possible in quantifiable terms, a variety of indicators, in particular the ones mentioned below:
- (a) *abatement technologies*: the amount of greenhouse gases that are permanently not emitted in the atmosphere;

²⁸ COM(2011)112 final "A roadmap for moving to a competitive low carbon economy"

²⁹ COM(2010)639 final "Energy 2020 Communication"

³⁰ Environmental studies can contribute to achieving a common objective when they are directly linked to investments eligible under these Guidelines, also if following the findings of a preparatory study, the investment under investigation is not undertaken.

- (b) *energy efficiency measures*: the amount of energy saved or the efficiency gains;
 - (c) *resource efficiency measure*: the amount of resources saved or the resource efficiency gains;
 - (d) *existing Union standards*: the size of the increase in the level of environmental protection beyond the standard (reduction of pollution that would not be achieved by the standard absent any State aid);
 - (e) *future Union standards*: the increase in speed of implementing future standard (reduction of pollution starting at an earlier date).
- (41) To demonstrate the contribution of an individually notified aid to a competitive, sustainable and secure EU energy system, Member State may use, as much as possible in quantifiable terms, a variety of indicators, in particular the ones mentioned below:
- (a) *infrastructure*: the impact on the flows of electricity within the internal market;
 - (b) *capacity mechanism*: increases in generation adequacy;
 - (c) *demand response*: enhancements in electricity grid stability by facilitating demand response.

5.1.2 Need for State intervention

5.1.2.1. General conditions for schemes

- (42) Whereas it is generally accepted that competitive markets tend to bring about efficient results in terms of prices, output and use of resources, in the presence of market failures³¹, state intervention may improve the efficient functioning of markets. Indeed State aid measures can under certain conditions, correct market failures and thereby contribute to achieving the common objective to the extent that the market on its own fails to deliver an efficient outcome. In order to assess whether State aid is effective to achieve the objective, it is necessary first to diagnose and define the problem to be addressed. State aid should be targeted towards situations where aid can bring a material improvement that the market cannot deliver itself.
- (43) To establish guidelines ensuring that aid measures achieve this objective, Member States should identify the market failures hampering an increased level of environmental protection or a well-functioning internal energy market. Market failures related to environmental and energy objectives may be different or similar, but can prevent the optimal outcome and can lead to an inefficient outcome for the following reasons:
- (a) **Negative externalities** are most common for environmental aid measures and arise when pollution is not adequately priced, i.e. the firm in question does not face the full cost of pollution, undertakings acting in their own interest may have insufficient incentives to take the negative externalities arising from production into account either when they decide on a

³¹ The term "market failure" refers to situations in which, markets, if left to their own devices, are unlikely to produce efficient outcomes.

particular production technology or when they decide on the production level. In other words, the production costs that are borne by the undertaking are lower than the costs borne by society. Therefore undertakings typically have insufficient incentive to reduce their level of pollution or to take individual measures to protect the environment.

- (b) **Asymmetric information**, typically arises in markets where there is a discrepancy between the information available to one side of the market (say the supply side) and the information available to the other side of the market (say demand side). This could for instance occur in cross border infrastructure where one party to the collaboration has an information disadvantage compared to the other party.
 - (c) **Coordination failures**, may prevent the development of a project or its effective design due to diverging interests among investors, the costs of contracting, uncertainty about the collaborative outcome and network effects. Coordination problems may be further exacerbated by information problems, in particular those related to asymmetric information. Coordination problems may also stem from the need to reach a certain critical mass before it is commercially attractive to start a project.
- (44) The mere existence of market failures in a certain context is not sufficient to justify state intervention. In particular, other policies and measures may already be in place precisely to address some of the market failures identified. Examples include sectoral regulation, mandatory pollution standards, pricing mechanisms such as the EU Emissions Trading System (ETS) and carbon taxes. State aid may only be directed at the residual market failure, i.e. the market failure that remains unaddressed by such other policies and measures. It is also important to show how State aid reinforces other policies and measures in place that aim at remedying the same market failure. The case for the necessity of State aid is weaker if it counteracts other policies targeted at the same market failure.
- (45) The Commission will consider a need for aid if the Member State demonstrates that a (residual) market failure remains unaddressed which is effectively targeted by the aid.

5.1.2.2. Additional conditions for individually notified aid

- (46) In general market failures may exist and aid measures may be well-designed to target an efficient market outcome. However, not all undertakings in the economy are confronted with these market failures to the same extent. Consequently, for notifiable individual aid, the Commission will consider a need for aid if the Member State demonstrates that a market failure remains unaddressed for the specific activity supported by the aid and whether the aid is effectively targeted to the market failure.
- (47) Depending on the specific market failure addressed the Commission will take into account:
- (a) Whether other policy measures already address the market failure sufficiently, in particular the existence of environmental or other Union standards, the EU ETS or environmental taxes.
 - (b) Whether the market would not achieve the objective on its own, taking into account in particular the nature, type and location of the main

competitors of the aid beneficiary, the cost of implementation of national standards for the aid beneficiary in the absence of aid compared to the costs of implementation of those standards for the main competitors of the aid beneficiary.

- (c) In the case of coordination failures, the Commission will take into account the number of undertakings needing to collaborate, diverging interests between collaborating parties and practical problems to coordinate collaboration (linguistic issues, sensitivity of information, non-harmonised standards).

5.1.3 Appropriateness of the aid

- (48) The proposed aid measure must be an appropriate instrument to address the policy objective concerned. An aid measure will not be considered compatible if other less distortive policy instruments or other less distortive types of aid instruments allow reaching the same positive contribution to the common objective.

5.1.3.1 Appropriateness among alternative policy instruments

- (49) State aid is not the only policy instrument available to Member States to promote increased levels of environmental protection or to achieve a well-functioning European energy market. It is important to keep in mind that there may be other, better placed instruments to achieve those objectives. Regulation and market-based instruments are the most important tools to achieve environmental and energy objectives. Soft instruments, such as voluntary eco-labels, and the diffusion of environmentally friendly technologies may also play an important role in achieving a higher level of environmental protection.
- (50) Different measures to remedy the same market failure with the aim of environmental protection may counteract each other. This is specifically the case where an efficient, market-based mechanism has been put in place to deal specifically with the problem of externalities. An additional support measure to address the same market failure risks to undermine the efficiency of the market-based mechanism.
- (51) The Commission considers that State aid is an appropriate instrument if Member States have in place national environmental standards going beyond Union standards and intend to grant State aid to achieve those higher national standards.
- (52) Respect for the “polluter pays” principle (PPP) through environmental legislation ensures in theory that the market failure linked to negative externalities will be rectified. Therefore, State aid is not an appropriate instrument and cannot be granted insofar as the beneficiary of aid could be held liable under existing EU or national law for the pollution³².

5.1.3.2. Appropriateness among different aid instruments

³² In particular, the Commission will consider that aid for contaminated sites can be granted only when the polluter - i.e. the person liable under the law applicable in each Member State without prejudice to the Environmental Liability Directive (Directive 2004/35/EC) and other relevant EU rules in this matter - is not identified or cannot be held legally liable for financing the remediation in accordance with the “polluter pays” principle.

- (53) Environmental and energy aid can be awarded in various forms. The Member State should however ensure that the aid is awarded in the form that is likely to generate the least distortions of trade and competition. In this respect, if the aid is awarded in forms that provide a direct pecuniary advantage (for example, direct grants, exemptions from or reductions in taxes, or other compulsory charges, or the supply of land, goods or services at favorable prices, etc.), the Member State must demonstrate why other potentially less distortive forms of aid such as repayable advances, tax credits or forms of aid that are based on debt or equity instruments (for example, low-interest loans or interest rebates, state guarantees, or an alternative provision of capital on favorable terms) are less appropriate.
- (54) The choice of the aid instrument should be in coherence with the market failure that the aid measure aims at addressing. In particular where the actual revenues are uncertain, for instance in case of energy saving measures, a repayable advance may constitute the appropriate instrument.
- (55) For operating aid, the Member State must demonstrate that the aid is appropriate to achieve the objective of the scheme for the problems that the aid is intended to address. To demonstrate that the aid is appropriate, the Member State may calculate the aid amount *ex ante* as a fixed sum covering the expected additional costs over a given period, to incentivise undertakings to contain costs and develop their business in a more efficient manner over time³³.
- (56) For the purpose of demonstrating the appropriateness of schemes, the Member State can also rely on results of past evaluations as described in section 7.

5.1.4 Incentive effect

5.1.4.1. General conditions for schemes

- (57) Environmental and energy aid can only be found compatible with the internal market if it has an incentive effect. An incentive effect occurs when the aid induces the beneficiary to change its behaviour to increase the level of environmental protection or to increase the functioning of the European energy market, which it would not do without the aid. The aid must not subsidize the costs of an activity that an undertaking would anyhow incur and must not compensate for the normal business risk of an economic activity.
- (58) The Commission considers that aid granted to adapt to future Union standards has in principle incentive effect. However, aid does not have an incentive effect where investments bring undertakings into compliance with Union standards already adopted and not yet in force.
- (59) As an exception to point (58), aid granted for adaptation to Union standards already adopted but not yet in force will be considered to have incentive effect if the investment is finalised at least one year before the Union standards enter into force.

³³ However, where future costs and revenues developments are surrounded by a high degree of uncertainty and there is a strong asymmetry of information, the public authority may also wish to adopt compensation models that are not entirely *ex ante*, but rather a mix of *ex ante* and *ex post* (for example, using claw backs such as to allow sharing of unanticipated gains).

- (60) As an exception to point (58), an incentive effect may exist if aid is granted for:
- (a) the acquisition of new transport vehicles for road, railway, inland waterway and maritime transport complying with adopted Union standards, provided that the acquisition occurs before these standards enter into force and that, once mandatory, they do not apply retroactively to vehicles already purchased.
 - (b) retrofitting operations of existing transport vehicles for road, railway, inland waterway and maritime transport, provided that the Union standards were not yet in force at the date of entry into operation of these vehicles and that, once mandatory, they do not apply retroactively to these vehicles.
- (61) In order not to dissuade Member States from setting mandatory national standards which are more stringent than the corresponding Union standards, the Commission considers in general that a positive contribution to the level of environmental protection for aid supporting investments that enable the beneficiary to increase the level of environmental protection resulting from its activities by going beyond the applicable Union standards, irrespective of the presence of mandatory national standards that are more stringent than the Union standard. This includes for instance measures to improve the water and air quality or a more efficient water use beyond mandatory Union standards.
- (62) The Commission considers that aid does not present an incentive effect for the beneficiary in all cases in which work on the project already started prior to the aid application by the beneficiary to the national authorities. In such a case where the beneficiary starts implementing the project before applying for aid, any aid granted in respect of that project will not be considered compatible with the internal market.
- (63) Member State must use an application form for aid including at least the applicant's name and size, a description of the project, including its location and start and end dates, the amount of aid needed to carry it out, the counterfactual scenario and the eligible costs. In the application form, beneficiaries must explain what would have happened without aid. That alternative project is referred to as the counterfactual. In addition, large companies must submit documentary evidence in support of the counterfactual described in the application form. SMEs are not subject to this additional obligation.
- (64) When receiving the standard application form, the granting authority must carry out a credibility check of the counterfactual and confirm that the aid has the required incentive effect. A counterfactual is credible if it is genuine and relates to the decision-making factors prevalent at the time of the decision by the beneficiary regarding the investment.

5.1.4.2. Additional conditions for individual aid

- (65) For measures subject to individual notification, the Member State must fully demonstrate to the Commission the incentive effect of the aid. It needs to provide clear evidence that the aid effectively impacts on the investment decision so that it changes the behaviour of the beneficiary to increase the level of environmental protection or the functioning of the European energy market. To allow a comprehensive assessment, the Member State must provide not only information

concerning the aided project but also a comprehensive description of the counterfactual scenario, in which aid is not awarded to the beneficiary by any Member State.

- (66) The advantages of new investments or production methods are normally not limited to their direct environmental effects or effects on the energy market. Such advantages may in particular be production advantages³⁴ while the risks in particular relate to the uncertainty whether investment will be as productive as expected.
- (67) The incentive effect is, in principle, to be identified through counterfactual analysis, comparing the levels of intended activity with aid and without aid. Essentially, this amounts to checking the profitability of the project in the absence of the aid, to see whether it indeed falls short of the profit obtained by the company by implementing the alternative project.
- (68) In this context the level of profitability can be evaluated by reference to methodologies which are standard practice in the particular industry concerned, and which may include methods to evaluate the net present value of the project (NPV)³⁵, the internal rate of return (IRR)³⁶ or the average return on capital employed (ROCE). The profitability of the project is to be compared with normal rates of return applied by the company in other investment projects of a similar kind. Where those rates are not available, the profitability of the project is to be compared with the cost of capital of the company as a whole or with the rates of return commonly observed in the industry concerned.
- (69) Where no specific counterfactual is known, the incentive effect can be assumed when there is a funding gap, i.e. when the investment costs exceed the net present value (NPV) of the expected operating profits of the investment on the basis of an ex ante business plan.
- (70) The Member States are, in particular, invited to rely on official board documents, credit committee reports, risk assessments, financial reports, internal business plans, expert opinions and other studies related to the investment project under assessment. Documents containing information on demand forecasts, cost forecasts, financial forecasts, documents that are submitted to an investment committee and that elaborate on various investment scenarios, or documents provided to the financial institutions could help to verify the incentive effect.
- (71) In order to ensure that the incentive effect is established on an objective basis, the Commission may in its assessment of the incentive effect compare company-specific data with data concerning the industry in which the company is active

³⁴ Production advantages that negatively affect the incentive effect are increased capacity, productivity, efficiency or quality. Other advantages may be linked to product image or the labelling of production methods which may negatively affect the incentive effect in particular in markets where there is competitive pressure to maintain a high level of environmental protection.

³⁵ The net present value (NPV) of a project is the difference between the positive and negative cash flows over the lifetime of the investment, discounted to their current value (typically using the cost of capital).

³⁶ The internal rate of return (IRR) is not based on accounting earnings in a given year, but takes into account the stream of future cash flows that the investor expects to receive over the entire lifetime of the investment. It is defined as the discount rate for which the NPV of a stream of cash flows equals zero.

(benchmarking). In particular, the Member State should where possible provide industry-specific data demonstrating that the company's counterfactual scenario, its required level of profitability and its expected cash-flows are reasonable.

- (72) The Commission may find an incentive effect for projects which are profitable, but do not meet a minimum level of profitability required for such projects. The Commission might also consider that, in some cases, an undertaking may have an incentive in undertaking a project, with aid, even if the aided project does not achieve the normally required level of profitability. This might be justified for example in view of wider benefits not reflected in the profitability of the project itself. In such circumstances, the evidence provided to support the existence of an incentive effect becomes particularly important.
- (73) Where the undertaking is adapting to a national standard going beyond Union standards or adopted in the absence of Union standards, the Commission will verify that the aid beneficiary would have been affected substantially in terms of increased costs and would not have been able to bear the costs associated with the immediate implementation of national standards.
- (74) For investments that bring undertakings above the minimum levels required by Union standards, the Commission can still find no incentive effect, in particular if such investments correspond to the minimum technical standards available in the market. Also negotiations on the introduction of a new or more stringent Union standard can negatively affect the incentive effect.
- (75) If the aid does not change the behaviour of the beneficiary by stimulating additional activities, such aid does not have incentive effect in terms of promoting environmental behaviour in the EU or strengthening the functioning of the European energy market. Therefore, aid will not be approved in cases where it appears that the same activities would be pursued without the aid.

5.1.5 Proportionality of the aid

5.1.5.1. General conditions for investment aid schemes

- (76) Environmental and energy aid must always be proportionate. Aid is considered to be proportionate if the aid amount per beneficiary is limited to the minimum needed to achieve the environmental protection or energy objective aimed for.
- (77) As a general principle, aid will be considered to be limited to the minimum necessary if the aid corresponds to the (net) extra cost necessary to meet the objective, compared to the counterfactual in the absence of aid. Net extra costs compare the difference in the economic benefits and costs (including the investment and operation) of the aided project with those of the alternative investment project the company would carry out in the absence of aid (the counterfactual scenario).
- (78) However, it might be difficult to fully take into account all economic benefits which a company will derive from an additional investment³⁷. Therefore, a simplified method that would focus on calculating the extra investment costs (i.e.

³⁷ For instance, certain kinds of benefits such as the 'green image' enhanced by an environmental investment are not easy to measure.

not taking into account the operating benefits and costs) may be used for measures which are not subject to an individual assessment. The identified extra investment costs correspond to the eligible costs.

Eligible costs

- (79) The eligible costs are the extra investment costs in tangible and/or in intangible assets. They will be calculated as the cost of the investment directly related to the targeted common interest objective and will be established by reference to the counterfactual situation where appropriate. The costs not directly linked to the achievement of the environmental or energy objective shall not be eligible.
- (80) The eligible costs are determined as follows:
- (a) Where the costs of achieving the common interest objective can be identified in the total investment costs as a separate investment (for instance, because the green element is a readily identifiable "add-on component" to a pre-existing facility), the costs of the separate investment constitute the eligible costs.
 - (b) In all other cases, the eligible costs are the extra investment costs established by comparing the aided investment with the counterfactual situation in the absence of State aid. The correct counterfactual is the cost of a technically comparable investment³⁸ that would credibly be realised without aid³⁹ and which does not achieve the common interest objective or that only attains this objective to a lesser degree.
- (81) In Annex 3, examples of the relevant counterfactual scenario or eligible cost calculation are presented which reflect the counterfactual that should be used in similar cases.
- (82) For some measures, in particular for integrated projects, the counterfactual can be difficult to establish. For such projects, the Commission is amenable to consider a proxy for determining the extra costs.

Maximum aid intensities

- (83) In order for the aid to be proportionate to the market failure it intends to address, the Commission considers that the aid amount will be less than the eligible costs. In order to ensure predictability and a level playing field, the Commission further applies maximum aid intensities for aid.
- (84) In certain circumstances, higher aid intensities may be justified for some types of aid, but the aid intensity can never exceed 100% of eligible costs.
- (a) The aid intensity may be increased by [5/10] percentage points for energy and environmental investments located in assisted areas fulfilling the conditions of Article 107(3)(a) of the Treaty and by 5 percentage points

³⁸ A technically comparable investment means an investment with the same production capacity and all other technical characteristics (except those directly related to the extra investment for the targeted objective).

³⁹ Such a reference investment must, from a business point of view, be a credible alternative to the investment under assessment.

for energy and environmental investments located in assisted areas fulfilling the conditions of Article 107(3)(c) of the Treaty.

- (b) For small and medium-sized enterprises which may be faced, on the one hand, with relatively higher costs to achieve environmental or energy objectives compared to the size of their activity and, on the other hand, with capital market imperfections which restrict them to bear such costs, higher aid intensities may also be warranted, as the risk of serious distortions of competition will be reduced when the beneficiary is a small or medium-sized enterprise. The maximum aid intensities can be increased by 10% for medium sized and 20% for small enterprises.
 - (c) Higher aid intensities may be justified under certain conditions in case of eco-innovation which can address a double market failure linked to the higher risks of innovation, coupled with the environmental aspect of the project. This applies in particular to resource efficiency measures. The aid intensity may be increased by 10 percentage points, provided that following conditions are fulfilled:
 - i the eco-innovation asset or project must be new or substantially improved compared to the state of the art in its industry in the EU⁴⁰;
 - ii the expected environmental benefit must be significantly higher than the improvement resulting from the general evolution of the state of the art in comparable activities⁴¹;
 - iii the innovative character of these assets or projects involves a clear degree of risk, in technological, market or financial terms, which is higher than the risk generally associated with comparable non-innovative assets or projects⁴².
- (85) Therefore, the Commission will consider aid to be compatible if the eligible costs are correctly calculated and the maximum aid intensities set out in Annex 2 are respected.
- (86) Where aid is granted in a genuinely competitive bidding process on the basis of clear, transparent and non-discriminatory criteria that the aid amount may reach 100% of the eligible cost⁴³.

⁴⁰ The novelty could, for example, be demonstrated by the Member States on the basis of a precise description of the innovation and of market conditions for its introduction or diffusion, comparing it with state-of-the-art processes or organisational techniques generally used by other undertakings in the same industry

⁴¹ If quantitative parameters can be used to compare eco-innovative activities with standard, non-innovative activities, 'significantly higher' means that the marginal improvement expected from eco-innovative activities, in terms of reduced environmental risk or pollution, or improved efficiency in energy or resources, should be at least twice as high as the marginal improvement expected from the general evolution of comparable non-innovative activities.

Where the proposed approach is not appropriate for a given case, or if no quantitative comparison is possible, the application file for State aid should contain a detailed description of the method used to assess this criterion, ensuring a standard comparable to that of the proposed method.

⁴² This risk could be demonstrated by the Member State for instance in terms of: costs in relation to the undertaking's turnover, time required for the development, expected gains from the Eco innovation in comparison with the costs, probability of failure.

⁴³ This is because under such circumstances it can be assumed that the respective bids reflect all possible benefits that might flow from the additional investment.

- (87) A specific form of aid can be tradable permit schemes which may involve State aid. For example, when Member States grant permits and allowances below their market value. If the global amount of permits granted by the Member State is lower than the global expected needs of undertakings, the overall effect on the level of environmental protection will be positive. At the individual level of each undertaking, if the allowances granted do not cover the totality of expected needs of the undertaking, the undertaking must either reduce its pollution, thus contributing to the improvement of the level of environmental protection, or buy supplementary allowances on the market, thus paying a compensation for its pollution. To limit the distortion of competition, no over-allocation of allowances can be justified and provision must be made to avoid undue barriers to entry.

5.1.5.2. Cumulation of aid

- (88) 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 limits fixed by the aid ceilings laid down in this framework. Union funding centrally managed by the Commission that is not directly or indirectly under the control of the Member State⁴⁴, does not constitute state aid. Where such Union funding is combined with State aid, only the latter shall be 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 must however not exceed the maximum funding rate(s) laid down in the applicable European regulations.
- (89) Aid for environmental protection shall 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 fixed in these Guidelines.

5.1.5.3. Additional conditions for individual investment and operating aid

- (90) For individual aid, compliance with the maximum aid intensities set out in this section and in Annex 2, is not sufficient to ensure proportionality. Those maximum aid intensities are used as a cap for individual aid.
- (91) As a general rule, individually notifiable aid will be considered to be limited to the minimum if the aid amount corresponds to the net extra costs of the aided investment, compared to the counterfactual in the absence of aid. All relevant costs and benefits must be taken into account over the lifetime of the project.
- (92) If no clear alternative project can be identified as counterfactual, the Commission will verify whether the aid amount exceeds the minimum necessary to render the aided project sufficiently profitable, for instance whether it increases its IRR beyond the sectoral or firm-specific benchmark or hurdle rate. The Commission can also take into account normal rates of return required by the company in other comparable projects, the cost of capital of the company as a whole or returns commonly observed in the industry concerned.

⁴⁴ For instance support granted on the basis of Commission Decision 2010/670/EU (NER300 funding) and Regulation 2010/1233/EU amending Regulation 2009/663/EC (EEPR funding).

- (93) The Member State should provide evidence that the aid amount is kept to the minimum and that the selection process is proportionate. Calculations used for the analysis of the incentive effect can also be used to assess if the aid is proportionate. The Member State must demonstrate the proportionality on the basis of documentation such as that referred to in paragraph (70).
- (94) In its analysis the Commission will consider the following elements:
- (a) accurate calculation of the eligible costs: evidence that the eligible costs are indeed limited to the extra costs necessary to achieve the higher level of environmental protection or strengthening of the internal energy market;
 - (b) selection process: the selection process should be conducted in a non-discriminatory, transparent and open manner, without unnecessarily excluding companies that may compete with projects to address the same environmental or energy objective. The selection process should lead to the selection of beneficiaries that can address the environmental objective using the least amount of aid or in the most cost-effective way;
 - (c) aid limited to the minimum: evidence that the aid amount does not exceed the expected lack of profitability including a normal return over the time horizon for which the investment is fully depreciated.
- (95) For operating aid granted by way of a tender, the proportionality of individual aid is presumed to be met if the general conditions are fulfilled.

5.1.6 Avoidance of undue negative effects on competition and trade

- (96) For the aid to be compatible, the negative effects of the aid measure in terms of distortions of competition and impact on trade between Member States must be limited and outweighed by the positive effects in terms of contribution to the objective of common interest.

5.1.6.1. General conditions for schemes

- (97) In assessing the negative effects of the aid measure, the Commission will focus its analysis of the distortions of competition on the foreseeable impact the environmental and energy aid has on competition between undertakings in the product markets affected. If State aid measures are well targeted to the market failure it aims to address, the risk that the aid will unduly distort competition is rather limited.
- (98) If the aid is proportionate and limited to the extra investment costs, the negative impact of the aid is softened. However, even where aid is necessary and proportionate, aid may result in a change in behaviour of the beneficiaries which distorts competition. A profit seeking undertaking will normally only increase the level of environmental protection beyond mandatory requirements if it considers that this will result at least marginally in some sort of advantage for the undertaking.

- (99) The Commission establishes maximum aid intensities. Those intensities constitute a basic requirement for compatibility, the aim of which is to prevent the use of State aid for projects where the ratio between aid amount and eligible costs is to be deemed very high and particularly likely to be distortive.

5.1.6.2. Additional conditions for individual aid

- (100) Two main potential distortions of competition and trade may be caused by environmental and energy aid. These are product market distortions (which may mainly lead to allocative inefficiencies undermining the economic performance of the internal market) and location effects (which may lead to both allocative inefficiencies and to distributional concerns).
- (101) The Member State must ensure that the distortive effects are limited. The Commission will take into account whether the aid leads to:
- (a) maintaining inefficient firms afloat;
 - (b) distorting dynamic incentives (“crowding out”);
 - (c) creating market power or exclusionary practices;
 - (d) artificially altering trade flows or the location of production.
- (102) The Commission will in particular assess the distortive effects of the aid by considering the following elements:
- (a) *reduction in or compensation of production unit costs*: if the new equipment⁴⁵ will lead to reduced costs per unit produced compared to the situation without the aid or if the aid compensates a part of the operating cost, it is likely that the beneficiaries will increase sales. The more price elastic the product, the greater the competition distortion;
 - (b) *more environmentally friendly production process*: if the beneficiaries obtain a more environmentally friendly production process and if it is common through labelling or image to differentiate the product towards consumers on the basis of the level of environmental protection, it is likely that the beneficiaries can increase their sales. The greater the consumer preference for environmental product characteristics, the greater the competition distortion;
 - (c) *new product*: if the beneficiaries obtain a new or a higher quality product, it is likely that they will increase their sales and possibly gain a ‘first mover’ advantage. The greater the consumer preference for environmental product characteristics, the greater the competition distortion.
- (103) The Commission will also assess whether the aid results in some territories benefiting from more favourable production conditions, notably because of comparatively lower production costs as a result of the aid or because of higher production standards achieved through the aid. This may result in companies re-locating to the aided territories, or to displacement of trade flows towards the aided area.

⁴⁵ The calculation of extra costs may not fully capture all operating benefits, since the benefits are not deducted over the life time of the investment. In addition, certain types of benefits, for example linked to increased productivity and increased production with unaltered capacity, may be difficult to take into account.

- (104) In some cases, the purpose of the measure is to intervene in the functioning of the market with a view to favouring, to the overall benefit of the environment, certain environmentally friendly productions at the expense of other, more polluting ones. As a result of such measures, the producers of the environmentally friendly products concerned will be able to improve their market position in relation to competitors offering environmentally less beneficial products. In such cases, the Commission will take into account the overall environmental effect of the measure when looking at its negative impact on the market position, and thus on the profits, of non-aided firms. The lower the expected environmental effect of the measure in question, the more important the verification of its effect on market shares and profits of competing products.

5.1.7 Transparency

- (105) The Member State concerned must publish on a single State aid website, or on a single website retrieving information from several websites, at least the following information on the State aid measures: the full text of the approved aid scheme and its implementing provisions, the granting authority, the name of the individual beneficiaries, and aid intensity. These requirements apply to individual aid granted under notified schemes and as well as for ad hoc aid.
- (106) Such information shall be published after the granting decision has been taken, shall be kept for at least 10 years and shall be available for the general public without restrictions⁴⁶.

⁴⁶ This information should be regularly updated (for example every six months) and shall be available in non-proprietary formats.

5.2 Aid to energy from renewable energy sources

- (107) The EU has set ambitious climate change and energy sustainability targets in particular as part of its EU 2020 strategy. Several EU legislative acts already support the achievement of these targets, such as the EU ETS, the Renewable Energy Directive and the Fuel Quality Directive. However, these initiatives may not result in an efficient market outcome and under certain conditions State aid can be an appropriate instrument to contribute to the achievement of the EU objectives.
- (108) In particular the EU ETS and national CO₂ taxes internalise the costs of greenhouse gas (GHG) emissions, which however may not (yet) ensure the achievement of the related, but distinct EU objectives for renewable energy. Unless it has evidence on the contrary, the Commission therefore presumes that a residual market failure remains, which aid for renewable energy can address.
- (109) In order to allow Member States to achieve the EU 2020 targets, the Commission presumes the appropriateness of aid and the limited distortive effects of the aid provided all other conditions are met.
- (110) Aid to energy from renewable sources can be granted as investment or operating aid. For investment aid schemes and individually notified investment aid, the conditions set out in section 5.1 apply. For operating aid schemes, the general provision of section 5.1 will be applied as modified by the specific provisions as set in this subsection. For individually notified operating aid, conditions set out in section 5.1 apply, where relevant taking into account the modifications made by this subsection for operating aid schemes.
- (111) The Commission will authorise aid schemes for a maximum period of ten years. If maintained, the measure should be re-notified after such period.
- (112) Aid will only be considered compatible if it is granted to sustainable forms of renewable energy as defined by the EU legislative framework.
- (113) The EU has set an overall EU target for the share of renewable energy sources in final energy consumption and translated this into mandatory national targets. The Renewable Energy Directive⁴⁷ includes cooperation mechanisms⁴⁸ to facilitate cross border support for achieving national targets. In order to limit the distortive effects operating aid schemes should in principle be open to other EEA countries. Member States however may want to have a cooperation mechanism in place before allowing cross border support. As a result, the Commission will not require that schemes are open to other EEA countries if Member States duly justify the absence of an adequate cooperation mechanism.

⁴⁷ Directive 2009/29/EC.

⁴⁸ Cooperation mechanisms ensure that renewable energy produced in one Member State can count to the target of another Member State.

(114) Aid to energy from renewable sources should, in principle, focus on integrating renewable energy in the market. However, for certain renewable technologies, this may not be feasible or appropriate. In particular, specific aid measures may be needed to bring forward less mature renewable technologies that can contribute to the decarbonisation of the energy sector in the longer term⁴⁹. Therefore, the Commission will differentiate in its assessment between aid for mature and immature technologies, depending on their share in energy consumption reached. Technologies with a share of at least [0.1]% in gross inland energy consumption at national level are considered mature technologies, and technologies with a smaller share are considered immature technologies for the purpose of these Guidelines. Special conditions for small and first commercial scale installations, for biomass and for biofuels are also included to reflect their specific characteristics.

I Aid granted by way of a feed-in-premium or feed-in-tariff

Aid for mature technologies

(115) For mature technologies, operating aid for new installations will be considered compatible if all of the following conditions are met:

- (a) Aid is granted in a genuinely competitive bidding process⁵⁰ on the basis of clear, transparent and non-discriminatory criteria.
- (b) All generators using renewable energy sources can bid for the aid on a non-discriminatory basis.

If needed to ensure a mix of renewable energy sources at national level, Member States may require a minimum number of different renewable energy sources to receive support without pre-defining those technologies.

In order to limit the effects on the raw material markets, Member States may exclude or limit energy production using biomass from the bidding process. No other operating aid may be granted to new installations using biomass in that case.

- (c) Aid is granted by way of a feed-in-premium.
- (d) Beneficiaries are subject to standard balancing responsibilities.
- (e) Aid is only granted until the plant has been fully depreciated according to normal accounting rules.

⁴⁹ Considerations could be given to environmental and technical performance criteria that characterise the long-term prospects of innovative technologies

⁵⁰ In order for the bidding process to be competitive, a sufficient number of undertakings should participate; the budget related to the bidding process should be a binding constraint in the sense that not all bidders can receive aid and aid shall be granted on the basis of the initial bid submitted by the bidder. Further, the competitive process may be staged (with a cap or reservation price imposed at different stages of the bidding process) to ensure a competitive bidding process which does not lead to overcompensation.

- (f) No investment aid is granted to the installations eligible for the operating aid.

Aid for immature technologies

- (116) For immature technologies, operating aid will be considered compatible if it meets the conditions for mature technologies or if each of the following conditions are met:
 - (a) The aid per unit of energy does not exceed the difference between the total levelized costs of producing energy from the particular technology in question and the market price of the form of energy concerned. The production costs are updated regularly, at least every [2] years, to ensure compliance with this condition.
 - (b) Aid is granted by way of a feed-in-premium.
 - (c) Beneficiaries are subject to standard balancing responsibilities.
 - (d) Investment aid is deducted from the production costs.
 - (e) Aid is only granted until the plant has been fully depreciated according to normal accounting rules.

Aid for projects of first commercial scale and small installations

- (117) Member States may grant aid to projects of first commercial scale and to small installations with an electricity generation capacity of less than [1] MW on the basis of feed-in-tariffs and respecting the conditions set out in point(116)(a), (116)(d) and (116)(e).

Aid for existing biomass plants after plant depreciation

- (118) Unlike most other renewable sources of energy, biomass requires relatively low investment costs but higher variable operating costs. Higher operating costs may prevent a biomass⁵¹ plant from operating even after depreciation of the installation as the variable operating costs can be higher than the marginal revenues. On the other hand, an existing plant may operate by using fossil fuel instead of biomass as an input source if the use of fossil fuel as an input is more economically advantageous than the use of biomass. In both cases, the Commission may find aid to be compatible.
- (119) The Commission will consider operating aid for biomass after plant depreciation compatible if a Member State demonstrates that the variable operating costs borne by the beneficiary after plant depreciation are still higher than the market price of the energy concerned and provided that all the following conditions are met:
 - (a) The aid is only granted on the basis of the renewable energy produced.

⁵¹ This includes the production of biogas which has the same characteristics.

- (b) The measure is designed such that it compensates the difference in variable operating costs borne by the beneficiary and the market price.
 - (c) A monitoring mechanism is in place to verify whether the variable operating costs borne are still higher than the market price of energy. The monitoring mechanism needs to be based on updated production cost information and take place at least on an annual basis.
- (120) The Commission will consider operating aid for biomass after plant depreciation compatible if a Member State demonstrates that the use of fossil fuels as an input is more economically advantageous than the use of biomass and provided that all the following conditions are met:
- (a) The aid is only granted on the basis of the renewable energy produced.
 - (b) The measure is designed to such that it compensates the difference in variable operating costs borne by the beneficiary and the market price.
 - (c) Credible evidence is provided that without the aid a switch from the use of biomass to fossil fuels would take place.
 - (d) A monitoring mechanism is in place to verify that the use of fossil fuels is more beneficial than the use of biomass. The monitoring mechanism needs to be based on updated cost information and take place at least on an annual basis.

II Aid granted by way of certificates

- (121) Member States may grant support for renewable energy sources by using market mechanisms such as green certificates. These market mechanisms⁵² allow all renewable energy producers to benefit indirectly from guaranteed demand for their energy, at a price above the market price for conventional power. The price of these green certificates is not fixed in advance, but depends on market supply and demand.
- (122) The Commission will consider this aid compatible if Member States can provide sufficient evidence that such support is (i) essential to ensure the viability of the renewable energy sources concerned, (ii) does not for the scheme in the aggregate result in overcompensation and (iii) does not dissuade renewable energy producers from becoming more competitive.
- (123) The Commission considers in particular that for mature technologies no different levels of support through green certificates may be applied and that:
- (a) All generators using renewable energy sources can receive aid in the form of green certificates on a non-discriminatory basis.

⁵² Such mechanisms can for instance oblige electricity suppliers to source a given proportion of their supplies from renewable sources.

If needed to ensure a mix of renewable energy sources at national level, Member States may require a minimum number of different renewable energy sources to receive support without pre-defining those technologies.

- (b) In order to limit the effects on the raw material markets, Member States may exclude energy production using biomass from receiving green certificates. No other operating aid may be granted to new installations using biomass.
 - (c) Beneficiaries are subject to standard balancing responsibilities.
 - (d) Any investment aid previously received must be deducted from the operating aid.
- (124) The Commission considers in particular that for immature technologies different levels of support through green certificates may be applied and that:
- (a) For each differentiated level the scheme does not in the aggregate result in overcompensation.
 - (b) Beneficiaries are subject to standard balancing responsibilities.
 - (c) Any investment aid previously received aid must be deducted from the operating aid.
- (125) Member States may grant aid to projects of first commercial scale and to small installations with an electricity generation capacity of less than [1] MW under the condition that the aid does not exceed the difference between the cost of producing energy from renewable sources⁵³ and the market price of the form of energy concerned.

III: Aid granted in support of biofuels

- (126) The Renewable Energy Directive set a 10% share of renewable energy in the transport sector by 2020. The Commission has also proposed⁵⁴ to raise the climate benefits of biofuels in the EU. In order to increase the share of renewable energy in the transport sector State aid may be needed to incentivise the use of more sustainable biofuels.
- (127) The Commission will consider that the aid does not increase the level of environmental protection and can therefore not be found compatible if the aid is granted to biofuels which are subject to a supply obligation⁵⁵.

First generation biofuels

⁵³ The production costs may include the depreciation of extra investments for environmental protection and a normal rate of return which does not exceed normal industry benchmarks.

⁵⁴ COM (2012)295

⁵⁵ An obligation to supply biofuels on the market needs to be in force, including a penalty regime.

(128) The Commission will consider operating aid for first generation biofuels as defined in the Commission's proposal COM(2012)295⁵⁶ compatible if each of the following conditions are met:

- (a) Aid is granted in a genuinely competitive bidding process⁵⁷ on the basis of clear, transparent and non-discriminatory criteria.
- (b) All biofuels fulfilling the sustainability criteria are eligible.
- (c) Aid is only granted until the plant has been fully depreciated according to normal accounting rules.

Second generation biofuels

(129) Operating aid for other than first generation biofuels as defined in the Commission's proposal COM(2012)295⁵⁸ can be found compatible as long as the conditions for first generation biofuels, are met or if each of the following conditions are met:

- (a) The aid does not exceed the difference between the cost of producing energy from renewable sources⁵⁹ and the market price of the form of energy concerned. The production costs need to be updated at least every [2] years to ensure compliance with this condition.
- (b) Investment aid is deducted from the production costs.
- (c) Aid is only granted until the plant has been fully depreciated according to normal accounting rules.

Aid for biofuels through excise duty or tax rate reductions

(130) Where operating aid for biofuels is granted through excise duty or tax reductions, the conditions set out in point (128) and (23) are not appropriate in such circumstances. The Commission will therefore assess whether the Member State demonstrates that the production costs⁶⁰ are higher than the market price of the form of energy concerned. Member States need to take into account prices quoted on relevant exchanges in order to demonstrate a reasonable level of production costs.

(131) In order to incentivise the use of other than first generation biofuels, operating aid for first generation biofuels is limited to 90% of the extra costs as determined

⁵⁶ The Directive will be applicable once adopted.

⁵⁷ In order for the bidding process to be competitive, a sufficient number of undertakings should participate; the budget related to the bidding process should be a binding constraint in the sense that not all bidders can receive aid and aid shall be granted on the basis of the initial bid submitted by the bidder. Further, the competitive process may be staged (with a cap or reservation price imposed at different stages of the bidding process) to ensure a competitive bidding process which does not lead to overcompensation.

⁵⁸ The Directive will be applicable once adopted.

⁵⁹ The production costs may include the depreciation of extra investments for environmental protection and a normal rate of return which does not exceed normal industry benchmarks.

⁶⁰ See footnote 14.

under point (24). Only for other biofuels than first generation biofuels a differentiated approach may be applied.

5.3 Energy efficiency measures, including cogeneration and district heating and district cooling

- (132) The EU has set the objective to achieve a 20% increase in energy efficiency by 2020. In particular the EU adopted the Energy Efficiency Directive (hereafter: EED)⁶¹ which establishes a common framework to promote energy efficiency within the Union pursuing the overall objective of saving at least 20% of the Union's primary energy consumption.
- (133) For the assessment of State aid to support energy efficiency in the form of schemes and of individually notified aid, the Commission will apply the general conditions set out in section 5.1, as supplemented by the specific provisions in this section.

Common objective

- (134) In order to ensure that aid contributes to a higher level of environmental protection, aid for district heating and district cooling and cogeneration of heat and electricity (hereafter: CHP) will only be compatible if granted to high-efficient CHP and energy-efficient district heating and district cooling.
- (135) One core principle of EU legislation on waste is the so-called waste hierarchy which prioritises the ways in which waste should be treated⁶². State aid for installations using waste as input fuel can make a positive contribution to environmental protection, provided that it does not circumvent this principle.

Need for State aid

- (136) Energy efficiency measures target negative externalities by creating individual incentives to attain environmental targets for energy saving and for the reduction of greenhouse gas emissions. One particular market failure which may arise in the field of energy efficiency measures concerns energy efficiency measures in buildings. When renovation works in buildings are considered, the benefits of energy efficiency measures do typically not accrue with the building owner which generally bears the renovation costs, but with the tenant. The Commission therefore considers that State aid may be needed to promote investments in energy efficiency in buildings in order to meet the targets of the EED.

Incentive effect

- (137) The incentive effect of the aid will be assessed on the basis of the conditions set out in Section 5.1 of these Guidelines.

⁶¹ 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.

⁶² The waste hierarchy consists of (a) prevention, (b) preparing for re-use, (c) recycling, (d) other recovery, for instance energy recovery, and (e) disposal. See Article 4(1) of Directive 2008/98/EC of the European Parliament and of the Council 19 November 2008 on waste and repealing certain Directives (Waste Framework Directive), OJ L 312, 22.11.2008, p. 3.

- (138) With respect to the EED, the Commission recalls that this Directive puts an obligation on Member States to achieve certain targets in the energy-efficient renovation of buildings. However, only an energy audit is mandatory for enterprises that are not a SME under the EED. Therefore, no State aid can be granted to such enterprises for carrying out the energy audit. This is without prejudice to the assessment of the incentive effect of State aid for energy efficiency measures prescribed by or carried out as a result of the energy audit.

Appropriateness

- (139) State aid may be considered an appropriate instrument to finance energy efficiency measures. When assessing State aid granted for the energy-efficient renovation of buildings, a special purpose vehicle set up by the Member State to finance renovation works may be considered as an appropriate instrument for the granting of state aid.
- (140) For other energy efficiency measures, a repayable advance may be considered as an appropriate State aid instrument if the revenues from the energy saving measure are uncertain.

Proportionality

Investment aid

- (141) For energy-saving measures and measures to increase the level of environmental protection beyond Union standards (or early adaptation to such standards) or energy-saving measures taken in the absence of Union standards, the counterfactual can be difficult to establish in case of integrated projects. For such projects, the Commission is amenable to consider a proxy for determining the eligible costs.
- (142) The Aid intensities as set out in Annex 2 will apply.

Operating aid for energy saving measures

- (143) The Commission will consider operating aid for energy savings to be proportionate only if the following conditions are met:
- (a) the aid is limited to compensating for net extra production costs resulting from the investment, taking account of benefits resulting from energy saving⁶³. In determining the amount of operating aid, any investment aid granted to the undertaking in question in respect of the new plant must be deducted from production costs.
 - (b) The operating aid is subject to a limited duration of five years.

Operating aid for high energy efficient CHP

- (144) Operating aid for high efficient cogeneration plants may be granted:
- (a) to undertakings distributing electric power and heat to the public where the costs of producing such electric power or heat exceed its market price.;

⁶³ The concept of production costs must be understood as being net of any aid but inclusive of a normal level of profit.

- (b) for the industrial use of the combined production of electric power and heat where it can be shown that the production cost of one unit of energy using that technique exceeds the market price of one unit of conventional energy.
- (145) Operating aid to support the production from new CHP may be granted on the basis of the conditions applying to operating aid for energy from mature renewable technologies as set out in section 5.2.
- (146) Operating aid to support the production from existing CHP may be granted on the basis of the conditions applying to operating aid to existing biomass plants as set out in section 5.2.

5.4 Aid to waste management

- (147) The prevention, re-use and recycling of waste has been identified in the EU's Seventh Environment Action Programme as one of its top priorities. One core principle of EU legislation on waste is the so-called waste hierarchy which prioritises the ways in which waste should be treated⁶⁴. Another key concept is the "polluter pays" principle (PPP), described in point (52), according to which undertakings are made to bear the costs of the environmental harm resulting from their activities.
- (148) State aid for the management of waste (including activities of re-utilisation, recycling and recovery) can make a positive contribution to environmental protection, provided that it does not circumvent those principles. This includes the re-use or recycling of water or minerals that would otherwise be unused as waste. In particular, in light of the PPP, undertakings which generate waste should not be relieved of the costs of its treatment. Moreover, the normal functioning of the secondary materials market should not be negatively impacted.
- (149) For the assessment of State aid to support waste management in the form of schemes and of individually notified aid, the Commission will therefore apply the general conditions set out in section 5.1, as modified by the specific provisions on the contribution to an objective of common interest set out in points (150) to (151). All other provisions of section 5.1 apply unchanged.
- (150) The Commission will consider aid for waste management to serve an objective of common interest in accordance with the principles of waste management set out above if the following cumulative conditions are met:
- (a) the investment is aimed at reducing waste generated by other undertakings and does not extend to waste generated by the beneficiary of the aid;
 - (b) the aid does not indirectly relieve the polluters from a burden that should be borne by them under Union law, or from a burden that should be considered a normal company cost for the polluters;
 - (c) the investment goes beyond the state of the art⁶⁵ or uses conventional technologies in an innovative manner notably to move towards the creation of a circular economy using waste as a resource;
 - (d) the materials treated would otherwise be disposed of, or be treated in a less environmentally friendly manner; and
 - (e) the investment does not merely increase demand for the materials to be recycled without increasing collection of those materials.

⁶⁴ The waste hierarchy consists of (a) prevention, (b) preparing for re-use, (c) recycling, (d) other recovery, for instance energy recovery, and (e) disposal. See Article 4(1) of Directive 2008/98/EC of the European Parliament and of the Council 19 November 2008 on waste and repealing certain Directives (Waste Framework Directive), OJ L 312, 22.11.2008, p. 3.

⁶⁵ State of the art shall mean a process in which the use of a waste product to manufacture an end product is economically profitable normal practice. Where appropriate, the concept of 'state of the art' must be interpreted from a Union technological and common market perspective.

- (151) Aid which, unlike specified in point (150)(a), is intended for the management of the beneficiary's own waste will be assessed on the basis of the general criteria applicable to aid granted in relation to Union standards or in the absence thereof.

5.5 Aid to Carbon Capture and Storage (CCS)

- (152) As recognised by the CCS Directive⁶⁶ and the Commission Communication on the future of CCS in Europe⁶⁷, carbon capture and storage (CCS) is a bridging technology that will contribute to mitigating climate change. In the transition to a fully low-carbon economy, CCS technology can reconcile the demand for fossil fuels, with the need to reduce greenhouse gas emissions. While there is no alternative to reducing greenhouse gas emissions, CCS can complement reduction efforts. Given that the cost of capture and storage is an important barrier to the uptake of CCS, State aid can have a part to play in fostering the development of this technology.
- (153) The aid may be provided to support fossil fuel power plants or other industrial installations equipped with CO₂ capture, transport and storage facilities, or individual elements of the CCS chain.
- (154) For the assessment of State aid to support CCS in the form of schemes and of individually notified aid, the Commission will apply the general conditions set out in section 5.1, as modified by the specific provisions set out in this section. Sections 5.1.4 and 5.1.7 will apply unaltered to this section.
- (155) *[OPTION 2 in view of abatement effects/market failure, see definitions. For measures which involve the use of CO₂, the contribution to an increased level of environmental protection cannot be presumed, as the measure can be limited to replacing an existing use of CO₂ without any net positive environmental effect. It can also not be excluded that such projects already take place in the market as CO₂ may constitute a necessary input source. Therefore, the Commission will assess measures which involve the use of CO₂ on the basis of the common principles set out in chapter 3.]*
- (156) While the EU has taken several initiatives to address negative externalities, those initiatives may not result in an efficient market outcome. In particular the EU ETS and national CO₂ taxes internalise the costs of greenhouse gas (GHG) emissions, which however may not (yet) ensure the achievement of the EU's long term decarbonisation objectives. The Commission therefore presumes that for the time being the aid for CCS addresses a residual market failure, unless it has evidence that such remaining market failure no longer exists.
- (157) In order to promote the long term decarbonisation objectives, the Commission considers that the aid contributes to the common objective of environmental protection. At this stage it is unlikely that the use of the CCS technology for example for fossil fuel power plants is made compulsory by regulation. Without prejudice in particular to EU regulation in this field, the Commission will presume the appropriateness of aid provided all other conditions are met.

⁶⁶ Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide 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.

⁶⁷ COM(2013) 180 final, 27.03.2013

- (158) Aid to support CCS projects does not include aid for the CO₂ emitting installation (industrial installations or power plants), but only aid for the additional equipment needed to capture, transport and store the CO₂ emitted. Therefore, it is generally accepted that the counterfactual scenario would consist in a situation where the project is not carried out. In view of this counterfactual scenario, the eligible costs are defined as the funding gap. All revenues, including cost savings from a reduced need for ETS allowances should be taken into account.
- (159) The Commission will take into account the support received under Commission Decision 2010/670/EU (NER300) and EC Regulation 663/2009 (EEPR) to assess the proportionality of the aid.
- (160) The Commission will assess the distortive effects of the aid taking into account the following positive elements: whether any knowledge sharing arrangements are in place, whether the infrastructure is open to third parties and whether the support to individual elements of the CCS chain has a positive impact on other fossil fuel installations owned by the beneficiary.

5.6 Aid in the form of reductions in or exemptions from environmental taxes

- (161) Environmental taxes are imposed in order to increase the costs of environmentally harmful behaviour, thereby discouraging such behaviour and increasing the level of environmental protection. In principle, environmental taxes should reflect the social costs of emissions, and correspondingly, the amount of tax paid per unit of emission should be the same for all emitting firms. While reductions in or exemptions from environmental taxes may adversely impact on this objective, Member States may deem them necessary in some cases to set generally higher tax levels and avoid that as a result of the environmental taxes in question, firms which are particularly affected by the tax are placed in a difficult competitive situation⁶⁸.
- (162) Indeed, a generally higher level of environmental taxes may be facilitated by granting a more favourable tax treatment to some undertakings. Accordingly, reductions in or exemptions from environmental taxes⁶⁹ can at least indirectly contribute to a higher level of environmental protection. However, the overall objective of the environmental tax to environmentally harmful behaviour should not be undermined. The tax reductions should be necessary and based on objective, transparent and non-discriminatory criteria, and the undertakings concerned should make a contribution to increasing environmental protection.
- (163) For the assessment of State aid in the form of exemptions from or reductions in environmental taxes (hereinafter referred to as “tax reductions”), the Commission will therefore only apply the conditions set out in this section and in section 5.1.7.
- (164) This section will not apply to aid in the form of tax reductions which are granted to incentivise specific environmentally friendly investments, such as to support to energy from renewable sources or cogeneration of heat and power. Such aid will be assessed under the specific sections of these guidelines for those technologies.
- (165) The Commission will authorize aid schemes for maximum periods of [ten] years. After such period a Member State can re-notify the measure if the Member State re-evaluates the appropriateness of the aid measures concerned.
- (166) The Commission will consider that tax reductions do not undermine the general objective pursued and contribute at least indirectly to an increased level environmental protection if a Member State demonstrates that (i) the reductions are well targeted to undertakings being mostly affected by a higher tax and (ii) that a higher tax rate is generally applicable.

⁶⁸ In many cases, the firms benefiting from the tax reductions are the ones with the most harmful behaviour targeted by the tax.

⁶⁹ One way to do so would be to grant compensation in the form of tax credits, whereby undertakings are not exempted from the tax but receive a lump sum compensation for it.

(167) When environmental taxes are harmonised, the Commission can apply a simplified approach to assess the necessity and proportionality of the aid. For all other environmental taxes, a more in depth assessment of the necessity and proportionality of the aid is needed.

Situation 1: Harmonised environmental taxes

(168) The Commission will consider aid in the form of tax reductions necessary and proportional provided the beneficiaries pay at least the EU minimum tax level set by the relevant applicable Directive and that the choice of beneficiaries is based on objective and transparent criteria, and the aid is granted in principle in the same way for all competitors in the same sector or relevant market⁷⁰ if they are in a similar factual situation.

(169) If the beneficiaries pay less than the EU minimum tax level set by the relevant applicable Directive, the aid will be assessed on the basis of the conditions for non-harmonised environmental taxes as set out in points (171) to (174).

(170) Where the tax is levied on the supplier of electricity but the tax costs are passed on to the electricity consumer, the electricity price increases (indirect tax costs). In this case, the effect of the tax on energy intensive consumers is comparable to the effect of ETS allowance costs being passed on and included in the electricity price (indirect emissions costs). In this case, tax reductions may be granted in the form of a compensation for the passed on tax costs to the electricity consumer. The Commission will consider the measure compatible only if:

- (a) Such tax reduction necessary if the beneficiaries exercise an activity covered by Annex II of the ETS State Aid Guidelines⁷¹ and the beneficiaries face a significant increase in production costs calculated as a proportion of the gross value added from indirect tax costs which amounts to at least 5% of the gross value added.
- (b) Such tax reduction is proportional if the beneficiaries pay at least 20% of the indirect tax burden; and
- (c) the tax reduction is paid as a lump sum amount, compensating for the costs of the tax based on historic consumption or production levels.

Situation 2: Non-harmonised environmental taxes

(171) In order to demonstrate the necessity and proportionality of the aid, a Member State should clearly define the scope of the tax reductions. For this purpose, a Member State should provide information about the sectors or categories of beneficiaries covered by the tax reduction and on the main beneficiaries in each

⁷⁰ As defined in the Commission notice on the definition of the relevant market for the purposes of Union competition law (OJ C 372, 9.12.1997, p. 5).

⁷¹ Commission Communication 2012/C 158/04 of 5.6.2012.

sector or category concerned taking into account notably the turnover, market shares and the size of the tax base.

(172) The Commission will consider the aid to be necessary if the following cumulative conditions are met:

- (a) the choice of beneficiaries is based on objective and transparent criteria, and the aid is granted in principle in the same way for all competitors in the same sector or relevant market⁷² if they are in a similar factual situation;
- (b) the environmental tax without the reduction leads to a substantial increase in production costs calculated as a proportion of the gross value added for each sector or category of individual beneficiaries;
- (c) the substantial increase in production costs could not be passed on to customers without leading to important sales reductions⁷³.

(173) The Commission presumes that the conditions set out under (172)(b) and (172)(c) are met if the environmental tax without the reduction amounts to at least [5]% of the gross value added and the beneficiaries have a market share of less than 25% and in markets whose Herfindahl-Hirschman Index of market concentration is below 2000 unless it has evidence that the aid is not necessary. If one of those thresholds is not met, the burden of proof for showing that the conditions in (172)(b) and (172)(c) are fulfilled is on the Member State.

(174) The Commission will consider the aid to be proportionate if one of the following conditions is met:

- (a) aid beneficiaries pay at least 20 % of the national environmental tax;
- (b) the tax reduction is conditional on the conclusion of agreements between the Member State and the beneficiaries or associations of beneficiaries whereby the beneficiaries or associations of beneficiaries commit themselves to achieve environmental protection objectives which have the same effect as if beneficiaries pay at least 20% of the national tax or if the EU minimum tax level were applied. Such agreements or commitments may relate, among other things, to a reduction in energy consumption, a reduction in emissions or any other environmental measure and satisfy the following conditions:
 - i the substance of the agreements is negotiated by the Member State, specifies the targets and fixes a time schedule for reaching the targets;

⁷² As defined in the Commission notice on the definition of the relevant market for the purposes of Union competition law (OJ C 372, 9.12.1997, p. 5).

⁷³ In this respect, Member States may provide estimations of inter alia the product price elasticity of the sector concerned in the relevant geographic market (see footnote XXX) as well as estimates of lost sales or reduced profits for the companies in the sector or category concerned.

- ii the Member State ensures independent⁷⁴ and timely monitoring of the commitments concluded in those agreements;
- iii those agreements are revised periodically in the light of technological and other developments and stipulate effective penalty arrangements applicable if the commitments are not met.

5.7 Aid in the form of reductions in funding support for energy from renewable sources

- (175) The funding of support to energy from renewable sources through charges does as such not target a negative externality. However, it may result in higher electricity prices. The increase in electricity prices may be explicit through a specific charge which is levied from electricity consumers on top of the electricity price or indirectly through additional costs faced by electricity suppliers due to obligations to buy renewable energy which are subsequently passed on to their customers, the electricity consumers. A typical example would be the mandatory purchase by electricity suppliers of a certain percentage of renewable energy through green certificates for which the supplier is not compensated.
- (176) In principle, all energy consumers should bear the costs of financing renewable support. However, some reductions may be needed to secure a sufficient financing base for renewable energy support⁷⁵. In order to avoid that undertakings particularly affected by the funding of renewable energy support are put in a difficult competitive situation, Member States may wish to grant partial compensation for additional costs so as to facilitate the overall funding of support to energy from renewable sources and avoid carbon leakage. With no compensation to particularly affected undertakings, public acceptance of setting up ambitious renewable energy support measures may be limited. On the other hand, if such compensation is too high or awarded to too many electricity consumers, public acceptance for renewable energy support may be equally hampered.
- (177) For the assessment of State aid to compensate for the financing of support to energy from renewable sources, the Commission will only apply the conditions set out in this section and in section 5.1.7.
- (178) In order to ensure that the aid serves to facilitate the funding of support to energy from renewable sources, Member States will need to demonstrate that the additional costs reflected in higher electricity prices faced by the beneficiaries

⁷⁴ It is irrelevant for these purposes whether the monitoring is done by a public or a private body.

⁷⁵ In order to have a generally high contribution from electricity consumers to the financing of support to energy from renewable sources, some electricity consumers may need to be given a more favourable treatment in particular to prevent carbon leakage.

only result from the support to energy from renewable sources. The additional costs cannot exceed the financing of support to energy from renewable sources⁷⁶.

- (179) In order to ensure that the aid has an environmental effect the aid should be targeted to avoid that without a reduction in the financing burden, certain sectors are at risk of relocating outside the EU. The Commission already established a list of energy intensive sectors that are deemed to be exposed to a significant risk of carbon leakage. Accordingly, the aid can only be granted if the beneficiaries exercise an activity covered by Annex II of the ETS State Aid Guidelines and the beneficiaries face an increase in production costs calculated as a proportion of the gross value added amounting to at least [5]%.
- (180) Within the eligible sector Member States need to ensure that the choice of beneficiaries is made on the basis of objective and transparent criteria and that the aid is granted in principle in the same way for all competitors in the same sector or relevant market⁷⁷ if they are in a similar factual situation.
- (181) The Commission will consider the aid to be proportionate if the following cumulative conditions are met:
- (a) The compensation is paid as a lump sum amount. The aid may be paid to the beneficiary in the year in which the costs are incurred or in the following year. If the aid is paid in the year in which the costs are incurred an ex post monitoring mechanism needs to be in place to ensure that any over-payment of aid will be repaid before 1 July of the following year;
 - (b) The aid beneficiaries pay at least 15% of the additional costs without reduction until 31.12.2017 and 20% as of 1.1.2018.
 - (c) The aid will not exceed the period until 31 December 2020.

⁷⁶ The most direct way to demonstrate the causal link is by reference to a charge or levy on top of the electricity price which is dedicated to the funding of energy from renewable sources. An indirect way to demonstrate the additional costs would be to calculate the impact of higher net costs for the electricity suppliers from green certificates and calculate the impact on the electricity price assuming the higher net costs are passed on by the supplier.

⁷⁷ As defined in the Commission notice on the definition of the relevant market for the purposes of Community competition law (OJ C 372, 9.12.1997, p. 5).

5.8 Aid to energy infrastructure

- (182) A modern energy infrastructure is crucial for an integrated energy market and to enable the EU to meet its broader climate and energy goals. The Commission has estimated total investment needs in energy infrastructures of European importance up to 2020 at about EUR 200 billion⁷⁸. This assessment was based on an evaluation of the infrastructure needed to allow Europe to meet the overarching policy objectives of completing the internal energy market, ensuring security of supply and enabling the integration of renewable sources of energy. Where market operators cannot deliver the infrastructure needed, State aid may be necessary in order to overcome market failures and to ensure that the EU's considerable infrastructure needs are met.
- (183) For the assessment of State aid to support energy infrastructure in the form of schemes and of individually notified aid, the Commission will apply the general conditions set out in section 5.1, as supplemented by the specific provisions in this section.

5.8.1. Common objective

- (184) Aid to energy infrastructure strengthens the internal energy market. It enhances for example system stability, generation adequacy, the integration of different energy sources and energy supply in under-developed networks. The Commission therefore considers that aid to energy infrastructure is beneficial to the internal market and thus fulfils a Common Objective.

5.8.2 Need for State aid

- (185) Energy infrastructure is typically characterised by market failures. A market failure that may arise in the field of energy infrastructure is related to problems of coordination. Diverging interests among investors, uncertainty about the collaborative outcome and network effects may prevent the development of a project or its effective design. Coordination problems may be further exacerbated by information problems, in particular those related to asymmetric information i.e. where one party to the collaboration has an information disadvantage compared to the other party.
- (186) To solve such market failures, energy infrastructure is typically subject to tariff and access regulation and to unbundling requirements according to internal energy market legislation ("internal energy market regulation").⁷⁹⁸⁰ In terms of

⁷⁸ Commission Staff Working Document, Energy infrastructure investment needs and financing requirements, 6.6.2011, SEC(2011)755, p. 2.

⁷⁹ Directive 2009/72/EC concerning common rules for the internal market in electricity, in particular Article 32 on Third-party access and the unbundling provisions of Chapters IV, V, VI and VII and Regulation No. 714/2009 on conditions for access to the network for cross-border exchanges in electricity, in particular Article 14 on Charges for access to networks.

⁸⁰ Directive 2009/73/EC concerning common rules for the internal market in natural gas, in particular Article 32 on Third-party access and the unbundling provisions of Chapters IV, V, VI and VII and

financing, an alternative way of overcoming the market failure than by means of compulsory user tariffs is in principle the granting of State aid.

- (187) In contrast, some types of infrastructure are not subject to such internal market regulation, in particular infrastructure projects explicitly exempted from certain provisions of the internal market legislation.⁸¹ In these cases, the Commission considers that there is no need for State aid.

5.8.3 Appropriateness

- (188) The Commission considers that tariffs⁸² are the appropriate primary means to fund energy infrastructure. However, State aid may be considered an appropriate instrument to (partially) finance such infrastructure. This may for example apply where the tariff increase to finance new infrastructure investment were so substantial to act as a deterrent to investment or to potential customers to use the infrastructure.

5.8.4 Incentive effect

- (189) The incentive effect of the aid will be assessed on the basis of the conditions set out in section 5.1 of these Guidelines.

5.8.5 Proportionality

- (190) The aid amount must be limited to the minimum needed to achieve the infrastructure objectives sought. For aid to infrastructure, the counterfactual scenario is presumed to be the situation in which the project does not take place. The eligible cost is therefore the funding gap.
- (191) Aid measures in support of infrastructure should not exceed an aid intensity of [100] % of the eligible costs.
- (192) When assessing aid measures for infrastructure, the Commission will require Member States to clearly and separately identify any other aid measure which might impact on it.

5.8.6 Avoidance of negative effects

- (193) In view of the existing requirements under the internal market regulation which are aimed at strengthening competition, the Commission will consider that aid for energy infrastructure covered by the internal market regulation does not have

Regulation No. 714/2009 on conditions for access to the network for cross-border exchanges in electricity, in particular Article 14 on Tariffs for access to networks.

⁸¹ Regulation No. 714/2009, Article 17 for new electricity interconnectors and Directive 2009/73/EC, Article 36 for new gas infrastructure.

⁸² The regulatory framework enshrined in Commission Directives 2009/72/EC and 2009/73/EC sets out the rationale and the principles underpinning the regulation of access and usage tariffs, which are used by transmission and distribution system operators to fund the investment and the maintenance of such infrastructure.

undue distortive effects. This implies that the infrastructure does not benefit from an exemption from third-party access, regulated tariffs or unbundling requirements.

5.9 Aid for capacity mechanisms

- (194) With the increased share of renewable energy sources in many Member States, electricity generation is shifting from a system of relatively stable and continuous supply towards a system with more numerous and small-scale supply of intermittent sources. This shift may pose a challenge to generation adequacy and security of supply. As a result, some Member States consider to introduce so-called 'capacity mechanisms granting support' for the mere market availability of generation capacity.
- (195) The Commission will conduct the compatibility assessment for schemes and for individually notified aid on the basis of the common assessment principles set out in section 5.1 and in the light of the elements specified in this section. It will ensure that capacity mechanisms are designed so as not to unduly distort competition or hamper the development of the internal electricity market.

5.9.1 Common objective

- (196) Capacity mechanisms can be designed in a variety of ways, in the form of investment and operating aid, and pursue different objectives. For example, they may aim at addressing short-term concerns of lack of capacity, or they may define a target for generation adequacy which Member States may wish to ensure regardless of short-term considerations.
- (197) Aid to capacity mechanisms risks contradicting the objective of phasing out environmentally harmful subsidies notably for fossil fuels. Member States should therefore first take into account alternative ways of achieving this objective which do not negatively impact on the objective to phase out environmentally harmful subsidies. However, the Commission recognises that energy generated from fossil fuels may be needed to a certain extent and for a certain period in order to achieve the aim of ensuring sufficient generation adequacy and security of supply.
- (198) The objective at which the measure is aimed should be clearly defined, for example in terms of reliability standards such as expected loss of load or expected non-served energy.

5.9.2 Need for State aid

- (199) The nature of the problem preventing the objective from being reached in the absence of the measure should be clearly defined. The definition should be based on an objective assessment in which the nature of the capacity inadequacy is clearly described, for example in terms of lack of peak-load capacity, short-term flexibility, or network bottlenecks.
- (200) The objective, the nature of the problem and the cause of the problem should be quantified using an appropriate and consistent unit of measure. The unit of measure should be described and its method of calculation should be provided. The

quantification of the objective, the nature of the problem and the cause of the problem should be provided both in the absence and in the presence of the measure intended to remedy the market failure.

- (201) The Member State should clearly demonstrate the reasons why the market cannot be expected to deliver the reserve excess capacity margin in the absence of intervention.
- (202) In its assessment, the Commission will take account, among others and when applicable, of the following elements to be provided by the Member State:
- (a) Assessment of generation adequacy based on currently used standard measures.⁸³
 - (b) Assessment on the impact of intermittent electricity, including in neighbouring systems.
 - (c) Assessment of the impact of demand-side management.
 - (d) Assessment of the actual or potential existence of interconnectors.
 - (e) Assessment of any other element which might cause or exacerbate the generation adequacy problem, such as regulatory or market failures.

5.9.3 Appropriateness

- (203) The aid should remunerate solely the service of pure availability provided by the generation operator, and should not include any remuneration for the sale of electricity.
- (204) The measure should provide adequate incentives to both existing generation operators and prospective investors in generation, and to operators using substitutable technologies, such as demand-side response or storage solutions. The aid should therefore be delivered through a mechanism which allows for potentially different lead times, corresponding to the time needed to realise new investments by new generators using different technologies. The measure should also take into account to what extent interconnection capacity could remedy any possible problem of generation adequacy.
- (205) The measure should in principle not reward investments in high-carbon generation plants, unless it can be shown that a less harmful alternative to achieve the objectives which underpin the capacity mechanism does not exist.

5.9.4 Incentive effect

- (206) The incentive effect of the aid will be assessed on the basis of the conditions set out in section 5.1 of these Guidelines.

⁸³ Such standards might for example be based on those developed by ENTSO-E, the European association of Transmission System Operators, in its assessments of EU-level generation adequacy.

5.9.5 Proportionality

- (207) The overall amount of aid should be calculated in a way which implies, or results in, beneficiaries earning a rate of return which can be considered reasonable for capacity providers equivalent to those at which the measure is aimed.
- (208) A genuinely competitive bidding process on the basis of clear, transparent and non-discriminatory criteria, effectively targeting the defined objective, will be considered as leading to reasonable rates of return under normal circumstances.
- (209) The measure may in principle be open to both new and existing generation, taking account of reasonable expectations on the likely evolution of electricity and fuel prices in the time period covered by the measure.

5.9.6 Avoidance of negative effects

- (210) The measure should be designed in a way so as to make it possible for any capacity which can effectively contribute to addressing the identified generation adequacy problem to participate in the capacity mechanism, in particular, taking into account the following factors:
 - (a) The participation by generators using different technologies, and equivalent technical performance levels should be allowed.
 - (b) The participation by operators from other Member States where such participation is physically possible, i.e. where the capacity can be physically provided to the Member State implementing the measure and the obligations set out in the capacity mechanism can be enforced.
 - (c) Avoidance of negative effects on the internal market, for example by implementing export restrictions or undermining the operation of market coupling, including intra-day and balancing markets.
- (211) The measure should not result in the reduction of incentives to invest in interconnection capacity.
- (212) The measure should be technologically neutral, in particular taking into account the following factors.
 - (a) No individual classes of generation operators should be implicitly or explicitly favoured.
 - (b) Any restriction on participation in a measure to ensure generation adequacy should be justified based on the technical performance required to address the identified generation adequacy problem.
 - (c) The mechanism should be open to potential aggregation of both demand and supply.
- (213) The aid should not result in the distortion of incentives to invest in generation which might have predated the measure.

- (214) The measure should not act against existing market mechanisms which contribute to the provision of capacity.
- (215) The mechanism by which aid is allocated should not lead to inefficient production decisions by operators.

6. Evaluation

- (216) To further ensure that distortion of competition are limited, the Commission may require that certain schemes are subject to a time limitation (of normally 4 years or less) and to an evaluation.
- (217) Evaluations will be carried out for schemes where the potential distortion of competition is particularly high, i.e. that may risk to significantly restrict or distort competition if their implementation is not reviewed in due time.
- (218) Given its objectives and in order not to put disproportionate burden on Member States and on smaller aid projects, evaluation only applies for aid schemes with large aid budgets, containing novel characteristics or when significant market, technology or regulatory changes are foreseen.
- (219) In principle the counterfactual evaluations referred to in paragraph (26) shall address the following issues: (1) whether the assumptions and conditions which led to the compatibility decision have been realised; (2) the effectiveness of the aid measure in light of its pre-defined objectives; (3) its impact on markets and competition and that no undue distortive effects arise under the duration of the aid scheme that is contrary to the interests of the Union.
- (220) For this purpose, Member States have to define ex ante and as compared to a counterfactual scenario which usually will be a business as usual scenario but taking also into account the effects of other measures having an impact on the on the objective of the aid measure (1) the objective of the aid measure; (2) indicators on how to measure the positive impact of the aid scheme; (3) the timeframe of its expected outputs. The evaluation could for instance focus on the following elements⁸⁴:
- (a) Realisation of the expected positive effects for instance in terms of: reduced CO₂ emissions, energy savings, or increased energy efficiency, production share of energy from RES, impact on the generation adequacy, percentage of companies going beyond the mandatory environmental standards, period of early adoption of environmental standards and environmental effects of going beyond standards, presence of incentive effect at the level of beneficiaries.
 - (b) Distortive effects which may have arisen under the duration of the aid scheme, for instance in terms of: for production of energy (locking-in in high-carbon energy sources, limiting the functioning of the energy markets, assess whether the concerns in terms of black-outs are real and continue to exist); foreclosure of national electricity markets, for energy infrastructure (foreclosure of national electricity markets, reinforce the market power of the dominant market player), impact on investment incentives on other technologies, bias towards loss-making firms or firms with low productivity (prevention of exit), bias towards incumbents (proportion of old vs. young firms) or location effects.
- (221) When assessing a re-notified scheme together with an evaluation report (for the prolongation of the scheme), the Commission will base its assessment on the

⁸⁴ This list is meant to be indicative, and the criteria may vary from one scheme to the other.

results of the evaluation and on the likelihood that the negative and positive effects observed in the past will continue in the future.

- (222) Any subsequent aid measure with a similar objective shall take into account the results of that evaluation. The evaluation shall thus serve the purpose of better policy-making by enabling the Commission and Member States to put in place better informed schemes, depending on the results of the evaluation:
- (a) prolongation of the scheme, or extension of its scope or amounts (in cases where the effectiveness of the scheme is demonstrated), including by simplifying certain requirements;
 - (b) termination of the scheme; or
 - (c) modifications to the scheme in order to improve its effectiveness or limit its distortive effects, such as for instance: adjustments to the selection criteria (scoring approach), reductions of the available budget or aid amounts per project, categories of beneficiaries, change in the selection mechanism, change of the aid instrument.
- (223) The evaluation shall be carried out by an expert independent from the State aid granting authority on the basis of a common methodology and shall be made public. The evaluation shall be submitted to the Commission in due time to allow for the assessment of the possible prolongation of the aid measure and in any case upon expiry of the scheme.

7. Applicability of the Environmental and Energy Aid Guidelines

- (224) These Guidelines will be applied from the first day following their publication in the Official Journal of the European Union and will replace the Guidelines on State aid for environmental protection published on 1 April 2008⁸⁵. These Guidelines will be applicable until 31 December 2020.
- (225) 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. This includes individual aid granted under approved aid schemes and notified to the Commission pursuant to an obligation to notify such aid individually.
- (226) For projects benefitting from funding on the basis of Commission Decision 2010/670/EU (NER300 funding) under the first⁸⁶ and second call⁸⁷, the Commission will apply the 2008 Environmental Aid Guidelines.
- (227) The Commission will not retroactively apply these Guidelines to aid already committed⁸⁸ by Member States on the basis of approved aid schemes concerning

⁸⁵ OJ C 82/1, 1.4.2008.

⁸⁶ Decision C(2012)9432 of 18 December 2012.

⁸⁷ Award decision expected June 2014.

operating aid measures in support of energy from renewable sources. This includes individual aid granted under such approved aid schemes and notified to the Commission pursuant to an obligation to notify such aid individually aid⁸⁹, unless Member States should have amended the approved aid schemes by way of appropriate measures.

- (228) The Commission herewith proposes to Member States, on the basis of Article 108(1) of the Treaty, the following appropriate measures concerning their respective existing environmental or energy aid schemes:

Member States should amend, where necessary, such schemes in order to bring them into line with these Guidelines within [12] months after their publication, with the following exceptions:

- (a) the new thresholds mentioned in section X.X for individual projects will apply as from the first day following the publication of these Guidelines in the Official Journal of the European Union;
- (b) the duty to provide more detailed annual reports will apply to aid granted under existing aid schemes as of [1 January 2015].
- (c) **OPTION 1:** Where necessary, schemes concerning operating aid measures in support of energy from renewable sources should only be amended when Member States change⁹⁰ their existing schemes. If such change does not affect the existing aid character of the scheme, Member States should only bring such schemes into line with these Guidelines within [12] months after their publication.

OPTION 2: Member States should amend, where necessary, schemes concerning operating aid measures in support of energy from renewable sources before XX.XX.201X.

- (229) The Member States are invited to give their explicit unconditional agreement to these proposed appropriate measures within two months from the date of publication of these Guidelines in the Official Journal of the European Union. In the absence of any reply, the Commission will assume that the Member State in question does not agree with the proposed measures.

⁸⁸ The aid is committed if the beneficiary has received confirmation from a Member State that it will benefit from State aid under the existing scheme. This concerns in particular installations which are benefitting from support to energy from renewable sources and in operation for less than the normal depreciation period.

⁸⁹ The thresholds and assessment framework as mentioned in the 2008 Environmental Aid Guidelines ("EAG", 2008/C 8201) will remain applicable until the Member State should bring the aid scheme in line with these Guidelines ("EEAG").

⁹⁰ For the purposes of this subparagraph, a change means any adjustment to an existing scheme other than the publication of new support tariffs according to an already existing and approved methodology, irrespective of whether it qualifies as new aid (Council Regulation (EC) 659/1999 as amended by Council Regulation (EC) 734/2013).

- (230) Unlawful environmental aid or energy aid will be assessed in accordance with the rules in force at the date on which the aid was granted in accordance with the Commission notice on the determination of the applicable rules for the assessment of unlawful State aid⁹¹.

8. Reporting and monitoring

- (231) 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 and Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Regulation (EC) No 659/1999⁹² or any regulations replacing those regulations, Member States must submit annual reports to the Commission
- (232) Member States shall transmit to the Commission information on each individual aid award exceeding EUR 3 million granted under a scheme within 20 working days from the day on which the aid is granted.
- (233) Member 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. These records must be maintained for 10 years from the date on which the aid was granted and be provided to the Commission upon request.

9. Revision

- (234) The Commission may decide to review or amend this framework at any time if this should be necessary for reasons associated with competition policy or in order to take account of other EU policies and international commitments.

⁹¹ OJ C 119/22, 22.05.2002

⁹² OJ L 140/1, 30.04.2004

Annex 1 Definitions

- (1) *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;
- (2) *energy-saving* means an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of an energy efficiency improvement measure, whilst ensuring normalisation for external conditions that affect energy consumption;
- (3) *Union standard* means
 - (a) a mandatory Union standard setting the levels to be attained in environmental terms by individual undertakings⁹³, or
 - (b) the obligation under Directive 2008/1/EC to use the best available techniques as set out in the most recent relevant information published by the Commission pursuant to Article 17(2) of that Directive;
- (4) *eco-innovation* means all forms of innovation activities resulting in or aimed at significantly improving environmental protection. Eco-innovation includes new production processes, new products or services, and new management and business methods, whose use or implementation is likely to prevent or substantially reduce the risks for the environment, pollution and other negative impacts of resources use, throughout the life cycle of related activities.

The following are not considered innovations:

- (a) minor changes or improvements;
- (b) an increase in production or service capabilities through the addition of manufacturing or logistical systems which are very similar to those already in use;
- (c) changes in business practices, workplace organisation or external relations that are based on organisational methods already in use in the undertaking;
- (d) changes in management strategy;
- (e) mergers and acquisitions;
- (f) ceasing to use a process;
- (g) simple capital replacement or extension;
- (h) changes resulting purely from changes in factor prices, customisation, regular seasonal and other cyclical changes;
- (i) trading of new or significantly improved products;

⁹³ Consequently, standards or targets set at Union level which are binding for Member States but not for individual undertakings are not deemed to be Union standards.

- (5) *renewable energy sources* means the following renewable non-fossil energy sources: wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;
- (6) *biomass* means the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste;
- (7) *biofuels* means liquid or gaseous fuel for transport produced from biomass;
- (8) *sustainable biofuels* means a biofuel fulfilling the sustainability criteria set out in Article 17 of Directive (EC) 2009/28 of the European Parliament and the Council on the promotion of the use of energy from renewable sources⁹⁴;
- (9) *cooperation mechanisms* means a mechanism which fulfils the conditions of Article 6, 7 or 8 of Directive (EC) 2009/28 of the European Parliament and the Council on the promotion of the use of energy from renewable sources⁹⁵;
- (10) *energy from renewable energy sources* means energy produced by plants using only renewable energy sources, as well as the share in terms of calorific value of energy produced from renewable energy sources in hybrid plants which also use conventional energy sources. It includes renewable electricity used for filling storage systems, but excludes electricity produced as a result of storage systems;
- (11) *cogeneration* or combined heat and power (CHP) means the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;
- (12) *high-efficiency cogeneration* means cogeneration which satisfies the definition of high efficiency cogeneration as set out in Article 2(34) by Directive 2012/27/EU⁹⁶;
- (13) *energy-efficient district heating and cooling* means district heating and cooling which satisfies the definition of efficient district heating and cooling system as set out in Article 2(41) and (42) of Directive 2012/27/EU⁹⁷;
- (14) *environmental tax* means a tax whose specific tax base has a clear negative effect on the environment or which seeks to tax certain activities, goods or services so that the environmental costs may be included in their price and/or so that producers and consumers are oriented towards activities which better respect the environment;
- (15) *feed-in Premium* means a premium paid on top of the market price which exposes renewable energy producers to market prices;
- (16) *EU minimum tax level* means the minimum level of taxation provided for in Union legislation. For energy products and electricity, the Union minimum tax level means the minimum level of taxation laid down in Annex I to Council

⁹⁴ OJ L 140/16, 5.6.2009.

⁹⁵ OJ L 140/16, 5.6.2009.

⁹⁶ OJ L 315/1, 14.11.2012.

⁹⁷ OJ L 315/1, 14.11.2012.

Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity⁹⁸;

- (17) *small and medium-sized enterprises* (hereafter 'SMEs'), undertakings that fulfil the conditions laid down in Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises⁹⁹;
- (18) *large enterprises and large undertakings* means enterprises which are not within the definition of small and medium-sized enterprises;
- (19) *aid* means any measure fulfilling all the criteria laid down in Article 107(1) of the Treaty;
- (20) *individual aid* means aid granted either on the basis of a scheme or on an ad hoc basis.
- (21) *aid intensity* means the gross aid amount expressed as a percentage of the eligible costs. All figures used must be taken before any deduction of tax or other charge. Where aid is awarded in a form other than a grant, the aid amount must be the grant equivalent of the aid. Aid payable in several instalments must be calculated at its value at the moment of granting. The interest rate to be used for discounting purposes and for calculating the aid amount in a soft loan must be the reference rate applicable at the time of grant. The aid intensity is calculated per beneficiary;
- (22) *operating benefits* means, for the purposes of calculating eligible costs, in particular cost savings or additional ancillary production directly linked to the extra investment for environmental protection and, where applicable, benefits accruing from other support measures whether or not they constitute State aid (operating aid granted for the same eligible costs, feed-in tariffs or other support measures);
- (23) *operating costs* means, for the purposes of calculating eligible costs, in particular additional production costs flowing from the extra investment for environmental protection;
- (24) *tangible assets* means, for the purposes of calculating eligible costs, investments in land which are strictly necessary in order to meet environmental objectives, investments in buildings, plant and equipment intended to reduce or eliminate pollution and nuisances, and investments to adapt production methods with a view to protecting the environment;
- (25) *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 where the following conditions are complied with:
 - (a) the intangible asset concerned must be regarded as a depreciable asset,
 - (b) it must be purchased on market terms, from an undertaking in which the acquirer has no power of direct or indirect control,

⁹⁸ OJ L 283, 31.10.2003, p. 51. Directive as last amended by Directive 2004/75/EC (OJ L 157, 30.4.2004, p. 100).

⁹⁹ OJ L 124/36, 20.5.2003.

- (c) it must be included in the assets of the undertaking, and remain in the establishment of the recipient of the aid and be used there for at least five years. This condition does not apply if the intangible asset is technically out of date. If it 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;
- (26) *internalise costs* means the principle that all costs associated with the protection of the environment should be included in the polluting undertakings' production costs;
- (27) *the “polluter” pays principle* means that the costs of measures to deal with pollution should be borne by the polluter who causes the pollution, unless the person responsible for the pollution cannot be identified or cannot be held liable under Union or national legislation or may not be made to bear the costs of remediation. Pollution in this context is the damage caused by the polluter by directly or indirectly damaging the environment, or by creating conditions leading to such damage¹⁰⁰, to physical surroundings or natural resources;
- (28) *polluter* means someone who directly or indirectly damages the environment or who creates conditions leading to such damage¹⁰¹;
- (29) *contaminated site* means a site where there is a confirmed presence, caused by man, of dangerous substances of such a level that they pose a significant risk to human health or the environment taking into account current and approved future use of the land.
- (30) *Ad hoc aid* means aid not granted on the basis of an aid scheme.
- (31) *Energy infrastructure* means any physical equipment or facility which is located within the Union or linking the Union and one or more third countries and falling under the following categories:
- (i) Concerning electricity:
- a. high-voltage overhead transmission lines, if they have been designed for a voltage of 220 kV or more, and underground and submarine transmission cables, if they have been designed for a voltage of 150 kV or more;
 - b. concerning in particular electricity highways; any physical equipment designed to allow transport of electricity on the high and extra-high voltage level, in view of connecting large amounts of electricity generation or storage located in one or several Member States or third countries with large-scale electricity consumption in one or several other Member States;
 - c. electricity storage facilities used for storing electricity on a permanent or temporary basis in above-ground or underground infrastructure or geological sites, provided they are directly

¹⁰⁰ Council Recommendation of 3 March 1975 regarding cost allocation and action by public authorities on environmental matters (OJ L 194, 25.7.1975, p. 1).

¹⁰¹ Recommendation of 3 March 1975 regarding cost allocation and action by public authorities on environmental matters.

connected to high-voltage transmission lines designed for a voltage of 110 kV or more;

- d. any equipment or installation essential for the systems defined in (a) to (c) to operate safely, securely and efficiently, including protection, monitoring and control systems at all voltage levels and substations; and
- e. any equipment or installation, both at transmission and medium voltage distribution level, aiming at two-way digital communication, real-time or close to real-time, interactive and intelligent monitoring and management of electricity generation, transmission, distribution and consumption within an electricity network in view of developing a network efficiently integrating the behaviour and actions of all users connected to it — generators, consumers and those that do both — in order to ensure an economically efficient, sustainable electricity system with low losses and high quality and security of supply and safety.

(ii) Concerning gas:

- a. transmission pipelines for the transport of natural gas and bio gas that form part of a network which mainly contains high-pressure pipelines, excluding high-pressure pipelines used for upstream or local distribution of natural gas;
- b. underground storage facilities connected to the above-mentioned high-pressure gas pipelines;
- c. reception, storage and regasification or decompression facilities for liquefied natural gas (LNG) or compressed natural gas (CNG); and
- d. any equipment or installation essential for the system to operate safely, securely and efficiently or to enable bi-directional capacity, including compressor stations.

(iii) Concerning oil:

- a. pipelines used to transport crude oil;
- b. pumping stations and storage facilities necessary for the operation of crude oil pipelines; and
- c. any equipment or installation essential for the system in question to operate properly, securely and efficiently, including protection, monitoring and control systems and reverse-flow devices.

(32) *Funding gap* means the portion of the discounted cost of the initial investment not covered by the discounted net revenues of the project. For the purpose of these Guidelines, this corresponds to the (algebraic) sum of the initial investment, the operating costs and the operating revenues over the lifetime of the project.

(33) *CCS* means Carbon Capture and Storage and consists of a set of technologies that captures the carbon dioxide (CO₂) emitted from industrial plants based on fossil fuels, transports it to a suitable storage site and stores it in underground geological formations with the aim of removing it from being emitted into the atmosphere.

[OPTION 2 in view of unclear abatement effects/market failure): CCS means Carbon Capture and Storage and consists of a set of technologies, including as regards CO₂ transport, that captures the carbon dioxide (CO₂) emitted from industrial installations (including power plants) based on fossil fuels with a view to ultimately removing it from being emitted into the atmosphere, especially by storing it in underground geological formations]

- (34) *Electricity transmission* means the transport of electricity on the extra high-voltage and high-voltage interconnected system with a view to its delivery to end users or to distributors, but does not include supply.
- (35) *Gas transmission* means pipelines for the transport of natural gas and bio gas that form part of a network which mainly contains high-pressure pipelines, excluding high-pressure pipelines used for upstream or local distribution of natural gas.
- (36) *Oil transmission* means pipelines used to transport crude oil.
- (37) *Transmission system operator* means a natural or legal person responsible for operating, ensuring the maintenance of and, if necessary, developing the transmission system in a given area and, where applicable, its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity.
- (38) *Distribution* means the transport of electricity on high-voltage, medium-voltage and low-voltage distribution systems with a view to its delivery to users, but does not include supply.
- (39) *Network element* means any stand-alone component or element in the physical equipment designed solely to allow, manage and monitor the transmission and distribution of electricity, thus excluding add-on elements such as storage facilities.
- (40) *Final customer* means a customer purchasing electricity for its own use.
- (41) *Transmission and distribution infrastructure strengthening cross-border exchanges* means the following:
 - (i) Electricity transmission and distribution infrastructure which:
 - a. involves at least two Member States by directly crossing the border of two or more Member States; or
 - b. is located on the territory of one Member State and has a significant cross-border impact by increasing the grid transfer capacity, or the capacity available for commercial flows, at the border of that Member State with one or several other Member States, or at any other relevant cross-section of the same transmission corridor having the effect of increasing this cross-border grid transfer capacity, by at least 500 Megawatt compared to the situation without the infrastructure; or
 - c. crosses the border of at least one Member State and a European Economic Area country; and
 - (ii) Gas transmission infrastructure which

- a. involves at least two Member States by directly crossing the border of two or more Member States; or
 - b. is located on the territory of one Member State and has a significant cross-border impact by concerning investment in reverse flow capacities or changing the capability to transmit gas across the border(s) of the concerned Member State by at least 10% compared to the situation prior to the commissioning of the project; or
 - c. crosses the border of at least one Member State and a European Economic Area country.
 - (iii) Oil transmission infrastructure which
 - a. involves at least two Member States by directly crossing the border of two or more Member States; or
 - b. crosses the border of at least one Member State and a European Economic Area country.
 - (iv) Electricity storage infrastructure which provides at least 225 MW installed capacity and has a storage capacity that allows a net annual electricity generation of 250 Gigawatt-hours/year.
 - (v) Gas storage infrastructure which concerns investment in reverse flow capacities or changes the capability to transmit gas across the borders of the Member States concerned by at least 10 % compared to the situation prior to the commissioning of the project.
- (42) *Advanced metering infrastructure* means any equipment or installation, both at transmission and medium voltage distribution level, aiming at two-way digital communication, real-time or close to real-time, interactive and intelligent monitoring and management of electricity generation, transmission, distribution and consumption within an electricity network in view of developing a network efficiently integrating the behaviour and actions of all users connected to it — generators, consumers and those that do both — in order to allow for real-time pricing and to increase the robustness of price signals in electricity markets .
- (43) *Electricity storage* infrastructure means facilities used for storing electricity on a permanent or temporary basis in above-ground or underground infrastructure or geological sites, provided they are directly connected to high-voltage transmission lines designed for a voltage of 110 kV or more.
- (44) *Gas storage* infrastructure means underground storage facilities connected to high-pressure gas pipelines, and reception, storage and regasification or decompression facilities for liquefied natural gas (LNG) or compressed natural gas (CNG).
- (45) *Oil storage* means pumping stations and storage facilities necessary for the operation of crude oil pipelines.
- (46) *Generation adequacy* means a level of generated capacity which is deemed to be adequate to meet demand levels in the Member State in any given period, based on the use of a conventional statistical indicator used by organisations recognised by EU institutions as performing an essential role in the creation of a single market in electricity, such as ENTSO-E.

- (47) *Capacity adequacy* means a level of overall capacity which is deemed to be adequate to meet demand levels in the Member State in any given period, based on the use of a conventional statistical indicator used by relevant EU organisations, such as ENTSO-E.
- (48) *Generation operator* is an undertaking which produces electrical power from fuel sources.
- (49) *Capacity mechanism* means a mechanism aimed at ensuring that certain generation adequacy levels are met at the national level.

Annex 2 Aid intensities

(50) The following aid intensities will be applied for environmental aid measures:

	Small enterprise	Medium-sized enterprise	Large enterprise
Aid for undertakings going beyond Union standards or increasing the level of environmental protection in the absence of Union standards (incl. transport vehicles)	[55] % [65] % if eco- innovation , [100] % if bidding process	[45] % [55] % if eco-innovation, [100] % if bidding process	[35] % [45] % if eco-innovation [100] % if bidding process
Aid for environmental studies	[70] %	[60] %	[50] %
Aid for early adaptation to future Union standards			
more than 3 years	[20] %	[15] %	[10] %
between 1 and 3 years before the entry into force	[15] %	[10] %	[5] %
Aid for waste management	[55] %	[45] %	[35] %
Aid for renewable energies	[65] %, [100] % if bidding process	[55] %, [100] % if bidding process	[45] %, [100] % if bidding process
Aid for energy saving	[40] %, [100] % if bidding process	[30] %, [100] % if bidding process	[20] %, [100] % if bidding process
Aid for district heating and cooling using conventional energy	[65] %, [100] % if bidding process	[55] %, [100] % if bidding process	[45] % [100] % if bidding process
Aid the remediation of contaminated sites	[100] %	[100] %	[100] %
Aid in the form of tradable permits	[100] %	[100] %	[100] %
Aid for energy infrastructure	[100] %	[100] %	[100] %
Aid for CCS	[100] %	[100] %	[100] %
To the aid intensities mentioned above may be increased by a bonus of [5] % point in regions covered by Article 107(3)c or by a bonus of [5/10] % in regions covered by Article 107(3)a Treaty up to a maximum of 100% aid intensity.			

Annex 3 Typical State interventions

- (51) The Commission considers typical examples of state aid interventions to increase the level of environmental protection or strengthen the internal energy market.
- (52) In particular, for the calculation of the eligible costs on the basis of a counterfactual scenario the following guidance is provided:

Aid category	Counterfactual / Eligible costs ¹⁰²
<i>CHP</i>	The investment costs for the additional equipment needed for the installation to operate as a high-efficiency cogeneration installation
<i>Environmental Studies</i> ¹⁰³	The eligible costs are the costs of the studies.
<i>Remediation contaminated sites</i>	The costs incurred ¹⁰⁴ for the remediation work, less the increase in the value of the land ¹⁰⁵ .
<i>District heating and cooling</i>	The investment costs for the construction, expansion, refurbishment of one or more generation units which shall be an integral part of the efficient district heating and cooling system.
<i>Waste management</i> ¹⁰⁶	The cost of conventional production not involving waste management with the same capacity investment.
<i>Aid for going beyond Union standards</i>	The extra investment costs consist of the additional investment costs necessary to go beyond the level of environmental protection required by the Union standards ¹⁰⁷
<i>Absence of Union or national standards</i>	The extra investment costs consist of the investment costs necessary to achieve a higher level of environmental protection than that which the undertaking or undertakings in question would achieve in the absence of any environmental aid
<i>RES electricity production</i>	The counterfactual is a conventional power plant with the same capacity in terms of the effective production of energy. The Commission assumes that in most cases this will reflect the marginal plant
<i>RES heating</i>	The counterfactual is a conventional heating system with the same capacity in terms of the effective production of energy
<i>Biogas production which is upgraded to a level of natural gas</i>	In principle as a counterfactual the refinery should be chosen. However, if the aid is limited to the upgrading of biogas, the counterfactual constitutes the alternative use of these biogas (including burning).
<i>Biofuels and biogas used for</i>	In principle as a counterfactual the refinery should be

¹⁰² The Commission may accept alternative counterfactual situations if duly justified by the Member State.

¹⁰³ This includes aid for energy efficiency audits.

¹⁰⁴ The environmental damage to be repaired shall cover damage to the quality of the soil or of surface water or groundwater. All expenditure incurred by an undertaking in remediating its site, whether or not such expenditure can be shown as a fixed asset on its balance sheet, may rank as eligible investment in the case of the remediation of contaminated sites.

¹⁰⁵ Evaluations of the increase in value of the land resulting from remediation have to be carried out by an independent expert.

¹⁰⁶ This concerns waste management of other undertakings and includes activities of re-utilisation, recycling and recovery.

¹⁰⁷ The cost of investments needed to reach the level of protection required by the Union standards is not eligible and need to be deducted.

<i>transport</i>	chosen, but the Commission can accept alternative counterfactuals if duly justified.
<i>Making use of industrial by-products</i>	If the by-product would go wasted unless reused: the eligible cost is the extra investment necessary to use the by product (for instance heat exchanger in the case of waste heat). If the by-product would need to be disposed: the counterfactual investment is the disposal of the waste.
<i>Aid involved in tradable permit schemes</i>	Proportionality needs to be demonstrated by the absence of over-allocation.