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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 (hereafter "the TFEU") lays down the principle that state aid is prohibited. In certain cases, however, such aid may be compatible with the TFEU on the basis of Articles 107(2) and (3).
- (2) Environmental protection is an important Union's objective as laid down in the TFEU. Article 191 thereof stipulates the objectives of the Union environmental policy¹. This policy shall *"aim at a high level of protection taking into account the diversity of situations in the various regions of the Union" and "be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay"*.
- (3) The aims of the Union energy policy are laid down in Article 194 TFEU, which specifies that *"[i]n the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to: (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks"*.
- (4) The Europe 2020 strategy² 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. In order to provide for a framework for achieving these targets, the Europe 2020 strategy put forward the "Resource efficient Europe" flagship initiative³ which aims at supporting the shift towards a resource-efficient, low-carbon economy to achieve sustainable growth.
- (5) Aid for energy and environment will primarily be justified on the basis of Article 107(3)(c) of the TFEU or Article 107(3)b of the TFEU, according to which 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.

¹ The objectives are preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilisation of natural resources, and promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change.

² COM(2010) 2020 final of 3.3.2010.

³ COM(2011) 21 of 26.1.2011.

- (6) Insofar as these Guidelines set out rules on state aid for nuclear, the assessment under the TFEU will take due account the objectives of the Euratom Treaty.
- (7) 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 failures⁴, state intervention may improve the efficient functioning of markets.
- (8) In the context of environmental aid, a prime market failure is the presence of (negative) externalities. When producers do not take into account the pollution of the environment induced by their activities, negative externalities arise. This may increase the cost of other companies in the economy and have broader adverse effects on society by the increased pollution. In such circumstances the market produces too much environmentally harmful goods and provides insufficient incentives for the polluting companies to invest in environmental improvements, even though it would be beneficial overall if they did.
- (9) The polluter pays principle, whereby undertakings are made to bear the full cost of the environmental harm arising from their activities, is one way of rectifying negative externalities. An alternative means to alleviate market failures is state intervention in the form of State aid.
- (10) In the context of energy related aid, coordination failures are the main market failure which may create a need for state intervention, including in the form of State aid.
- (11) In the Communication on state aid modernisation⁵, 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.
- (12) 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 and are applicable to notified aid schemes and individual aid.

⁴ The term "market failure" refers to situations in which markets, if left to their own devices, are unlikely to produce efficient outcomes.

⁵ COM(2012) 209 of 8.5.2012.

1. Scope and definitions

- (13) These Guidelines apply to State aid for environmental protection, including CO₂ capture, transport and storage (CCS)⁶, energy infrastructure, capacity mechanisms and nuclear energy. These Guidelines apply to aid granted in all sectors governed by the TFEU. They also apply to those sectors which are subject to specific Union rules on State aid (transport, coal, agriculture and fisheries and aquaculture) unless such specific rules provide otherwise.
- (14) 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.
- (15) Aid may not be awarded to firms in difficulties as defined for the purposes of these Guidelines by the applicable Community guidelines on state aid for rescue and restructuring undertakings in difficulty⁷ as amended or replaced.
- (16) 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 recovered⁸.
- (17) For agriculture and fisheries and aquaculture, these 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 Fund⁹, 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, these Guidelines apply only to measures which are not already governed by the Community guidelines for State aid in the agriculture and forestry sector 2007 to 2013¹⁰, and in the field of fisheries and aquaculture primary production, they apply only where no specific provisions dealing with environmental aid exist.

⁶ This includes individual elements of the Carbon Capture Storage chain.

⁷ OJ L 244, 1.10.2004, p. 2.

⁸ 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.

⁹ OJ L 223/1, 15.8.2006.

¹⁰ 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.

- (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 innovation¹¹.
- (19) 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 costs¹².
- (20) The definitions for the purposes of these Guidelines are laid down in Annex 1.

¹¹ 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.

¹² Adopted by the Commission on 26 July 2001 and communicated to Member States by letter ref. SG(2001) D/290869, 6 August 2001.

2. Notifiable environmental and energy aid

- (21) In principle, Member States must notify aid pursuant to Article 108(3) of the TFEU, 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 TFEU (General block exemption Regulation)*¹³ / 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 TFEU establishing the European Community to certain categories of horizontal state aid¹⁴].
- (22) These Guidelines provide the compatibility criteria for the following categories of aid which are subject to the notification obligation pursuant to Article 108(3) of the TFEU: (1) aid schemes involving large total amounts of public spending and aid schemes not covered by General Block Exemption Regulation (GBER); (2) *ad hoc* aid granted to large undertakings and *ad hoc* aid not covered by GBER and (3) individual aid granted on the basis of an existing aid scheme but exceeding the notification thresholds laid down in in the GBER.
- (23) The Commission will assess measures which meet all the criteria of the GBER but are nevertheless notified to the Commission on the basis of the substantial conditions set out in this Regulation.
- (24) For measures covered by a Block Exemption Regulation (BER), all cases notified to the Commission pursuant to a duty to notify aid individually are prescribed in the BER.
- (25) For measures not covered by a Block Exemption Regulation (BER), due to its 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*¹⁵ or based on an aid scheme, where the aid satisfies the following conditions¹⁶:
- (a) for individual measures covered by these Guidelines¹⁷, even if they are part of an approved aid scheme: all the following cases¹⁸:
 - i *investment aid*: where the aid amount exceeds EUR [7.5] million for one undertaking;
 - ii *operation 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;

¹³ [OJL].

¹⁴ [OJL142, 14.5.1998, p. 1.]

¹⁵ Ad hoc aid is subject to the same requirements as individual aid granted on the basis of a scheme.

¹⁶ This also applies irrespective of whether the individual beneficiary benefits at the same time from a tax exemption or reduction assessed under chapter 5.

¹⁷ Tax exemptions and reductions from environmental taxes falling under chapter 5 will not be subject to a compatibility assessment pursuant to chapter 3 of these guidelines. However, aid granted in the form of fiscal aid covered by chapter 3 of these guidelines will be subject to an individual assessment if the thresholds in this point are exceeded.

¹⁸ 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.

- 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.
- 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.

Service of General Economic interest

- (26) 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) TFEU. 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 interest¹⁹, 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 interest²⁰, the Commission Communication on a European Union framework for State aid in the form of public service compensation (2011)²¹ 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 interest²².
- (27) These Commission documents (referred to all together as the ‘SGEI package’), also apply to State aid for energy and environmental aid
- (28) In particular, the Commission has already clarified, in general terms, that Member States cannot attach specific public service obligations to services that are already provided or can be provided satisfactorily and under conditions, such as price, objective quality characteristics, continuity and access to the service, consistent with the public interest, as defined by the State, by undertakings operating under normal market conditions.
- (29) Applying this principle to the energy sector, the Commission considers that the provision of services such as a specific level of electricity generation adequacy is unlikely to be a SGEI within the meaning of Article 106(2) TFEU. The provision of electricity is under normal circumstances a service provided by undertakings competing in a market, and such service cannot be easily distinguished from the provision of capacity.

¹⁹ OJ C 8/4 of 11.1.2012.

²⁰ OJ L 11/7 of 11.1.2012.

²¹ OJ C 8/15 of 11.1.2012.

²² OJ L 114/8 of 26.4.2012.

- (30) More broadly, for all those parts of the energy sector which are fully liberalised, such as oil transmission, it would follow that an SGEI mission cannot be based on the award of an exclusive or special right to the provider of the SGEI within the meaning of Article 106(1) TFEU.
- (31) Electricity and gas transmission and distribution are normally a regulated activity under common EU principles. Access to gas and electricity networks are provided by regulated Transmission System Operators, which are each designated to be monopolists in their respective geographic area of operations. This regulatory design is incompatible with the possibility to apply the principle of SGEI to these activities, to the extent that the principles underpinning the regulatory framework are appropriately implemented, given that Transmission System Operators are designated as the sole providers of transmission and distribution services.
- (32) Finally, gas and electricity storage are activities which can in principle be economically viable under general circumstances, making a SGEI designation for these activities inappropriate. Consequently, when gas storage is exempted from the conditions set out in Art 36 of Directive 2009/73/EC, the Commission will normally consider that the service cannot be designated as a SGEI.

3. Common Assessment Principles

- (33) 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.
- (34) 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 an 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: a State aid measure must aim at an objective of common interest in accordance with Article 107(3) TFEU;
 - (b) Need for state intervention: a State aid measure must be 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 must be an appropriate policy instrument to address the objective of common interest;
 - (d) Incentive effect: the aid must change 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 must be 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 must be 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, must have easy access to all relevant acts and to pertinent information about the aid awarded thereunder.
- (35) 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.
- (36) 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 market²³.
- (37) In assessing the compatibility of any individual aid with the internal market, the Commission will take account of any proceedings concerning infringements to Articles 101 or 102 TFEU which may concern the beneficiary of the aid and which may be relevant for its assessment²⁴.

²³ 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.

²⁴ See Case C-225/91 *Matra v Commission*, [1993] ECR I-3203, paragraph 42.

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

- (38) *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 TFEU.*
- (39) *The Commission will conclude that Article 107(3)b may apply provided that 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 must be in the common European interest: the project must contribute 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 contribute to the development of the internal energy market.*
 - (c) *The advantages achieved by the objective of the project must not be 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 must be substantial in size and produce substantial environmental effects.*
- (40) *In order to allow the Commission to properly assess such projects, the common European interest must be demonstrated 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.*
- (41) *In order to allow the Commission to properly assess the case, it must be demonstrated 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.*
- (42) *When the aid is considered to be compatible with the common market in accordance with Article 107(3)(b) of the TFEU, the Commission may authorise aid at higher rates than otherwise laid down in these Guidelines.*
- (43) *The aid must be 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 TFEU of environmental and energy aid

- (44) State aid for environmental protection and energy shall be compatible with the internal market within the meaning of Article 107(3)(c) of the TFEU if, on the basis of the methodology set out in section 3 above, 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.
- (45) In the present section, the Commission clarifies how it will apply this methodology and, where applicable, lays down specific conditions for individual aid (either provided on the basis of a scheme or ad hoc).

5.1 Contribution to a common objective

5.1.1. General conditions

- (46) The primary objective of environmental aid is to increase the level of environmental protection compared to the level that would be achieved absent the aid. These measures in particular contribute to the Europe 2020 targets for sustainable growth to support climate change and energy sustainability (see point (4)).
- (47) The primary objective of aid to energy infrastructure is to strengthen the internal energy market, in particular in terms of market integration, adaptation to a low carbon economy and ensuring generation adequacy.
- (48) The Member State shall precisely define the objective pursued and explain the expected contribution of the measure to the environmental protection or energy aims of the measure, as much as possible in quantifiable terms²⁵. In this context, the Commission will pay attention in particular to the existing Union standards.
- (49) The Commission may find 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.
- (50) In order to ensure that aid contributes to a higher level of environmental protection, aid for district heating and cogeneration of heat and electricity (hereafter: CHP) shall only be granted to high efficient CHP and energy efficient district heating.
- (51) Aid for waste management can contribute to achieving the objectives of the EU's sixth environment action plan which identifies waste prevention and management as one of its four top priorities. In order to ensure a positive contribution to environmental protection, aid for the management of waste produced by other undertakings shall respect the waste hierarchy²⁶, be granted only for investments

²⁵ 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.

²⁶ See Waste Framework Directive 2008/98/EC of 19 November 2008.

that go beyond the state of the art²⁷ or use conventional technologies in an innovative manner.

- (52) In addition, it needs to be ensured that materials treated would otherwise be disposed of, or be treated in a less environmentally friendly manner and the investment does not merely increase demand for the materials to be recycled without increasing collection of those materials.
- (53) To avoid that State aid measures lead to environmental harm, Member States must also ensure compliance with EU environmental legislation, including in particular the need to carry out an environmental impact assessment when it is required by EU law and ensure all relevant permits.
- (54) In order to ensure a positive overall effect on environmental protection, aid to support energy from renewable sources shall only be provided to renewable energy sources which comply with the applicable sustainability criteria laid down in the RES Directive. When an obligation to supply biofuels on the market is in force, including a penalty regime, aid for biofuels being subject to such supply obligation is presumed not to contribute to a common objective. The aid does not result in a higher level of environmental protection as also without the aid such biofuels would be supplied.
- (55) If in addition to a supply obligation aid is deemed necessary, a Member State needs to demonstrate the added level of environmental protection and why such biofuels would not be supplied to the market if a technological neutral approach is followed under a supply obligation. For instance, a Member State may demonstrate the increased level of environmental protection of less mature (second generation) biofuels.
- (56) For all aid measures it has to be demonstrated that the polluter pays principle is complied with to the greatest possible extent. For instance, aid for waste management shall 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.

5.1.2. Additional conditions for individually notified aid

- (57) To demonstrate the contribution of the aid measure to environmental protection, Member States may use a variety of indicators. For instance, in case of aid in a situation of existing EU standards, at least an increase in the level of environmental protection or an increase in the speed of implementing of environmental protection needs to be present.
- (58) For aid measures aimed to strengthen the internal energy market, it needs to be demonstrated that the measure provides for a better market integration, for instance by demonstrating the impact on the flows of electricity or other energy sources, increases the generation adequacy or enhancements the electricity grid stability by facilitating demand response. The Commission may also take into account the effect of strengthening under-developed networks for instance the development of remote areas.

²⁷ 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.

5.2 Need for State intervention

5.2.1. General conditions

- (59) In order to assess whether State aid is necessary to achieve the objective of common interest, the extent to which the market delivers the result on its own needs to be analysed. It is therefore necessary to have first a diagnosis of the problem to be addressed. In order to be effective, State aid should be targeted towards situations where aid can bring a material improvement that the market cannot deliver itself. This holds especially in a context of scarce public resources.
- (60) To establish rules ensuring that aid measures achieve this objective, it is first of all necessary to identify the market failures hampering an increased level of environmental protection or a better functioning of the internal energy market. Member States should explain how the measure can effectively alleviate the market failure that prevents achievement of the objective of common interest.
- (61) The most common market failure in the field of environmental protection is related to negative externalities. 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 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. This leads to inefficiencies in the production process or, in other words, to a market failure.
- (62) A market failure that may arise in the field of energy infrastructure is related to problems of coordination. Diverging interests among investors, the costs of contracting, 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. Coordination problems may also stem from the need to reach a certain critical mass before it is commercially attractive to start a project.
- (63) The mere existence of market failures in a certain context, however, 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, the Emissions Trading Scheme 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

5.2.2. Additional conditions for individually notified aid

- (64) As indicated above, negative externalities in the field of environmental protection are likely to arise when pollution is not adequately priced, i.e. the firm in question does not face the full cost of pollution. In view of existing mechanisms to address this market failure, such as the existence of the Emission Trading Scheme, other types of market regulation or interventions and taxation, the Commission will verify that the aid only addresses remaining market failures that are not already rectified by existing or envisaged policy initiatives.
- (65) In the event of aid for early implementation of or going beyond Union standards, the Commission will in its assessment take into account whether the market would not achieve such level of environmental protection on its own, in particular the nature, type and location of the main competitors of the aid beneficiary, the cost of implementation of the national standards (or tradable permit schemes) for the aid beneficiary had no aid been given, and the comparative costs of implementation of those standards for the main competitors of the aid beneficiary in order to assess whether the result would not have been delivered by the market on its own.
- (66) For measures aimed at strengthening the internal market, the Commission will verify whether such measures are not already provided by the market and whether the aid addresses a market failure rather than reflects the result of a well-functioning market where no market failure is present. 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).

5.3 Appropriateness of the aid

- (67) 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 instrument allow reaching the same positive contribution to the common objective.

5.3.1 Appropriateness among alternative policy instruments

- (68) State aid is not the only policy instrument available to Member States to promote increased levels of environmental protection or a better functioning and strengthening of the internal energy market. It is important to keep in mind that there may be other, better placed instruments to achieve the 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.
- (69) The Commission considers that State aid may be an appropriate instrument to enable Member States to adopt national environmental regulation going beyond Union standards, by lowering the burden on the undertakings most affected by that regulation, and thus making the regulation possible.

- (70) According to the polluter pays principle (PPP), the polluter should pay all the costs of its pollution, including the indirect costs borne by society. In particular, aid for contaminated sites shall be granted only when the polluter - i.e. the person liable under the law applicable in each Member State without prejudice to the adoption of EU rules in this matter - is not identified or cannot be held legally liable for financing the remediation in accordance with the "polluter pays" principle²⁸.
- (71) Respect for the PPP through environmental Regulation ensures in theory that the market failure linked to negative externalities will be rectified. Therefore, State aid may not be an appropriate instrument in such cases. However, on account, in particular, of the incomplete implementation of the PPP, the existing level of environmental protection is often considered to be unsatisfactory as the exact cost of pollution is not easy to establish. Also, prices of products may rise too abruptly in order to internalize the cost of pollution and governments may therefore consider to progress with moderation towards integrating the full price of pollution into certain production processes.
- (72) 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.
- (73) In its compatibility analysis, the Commission will in particular take account of any impact assessment of the proposed measure which the Member State may have made, including considerations of applying policy options other than State aid, and take account of evidence that the PPP will be respected.
- (74) In the field of energy, the Commission considers that tariffs are the appropriate primary means to fund energy infrastructure²⁹. However in some instances State aid might be considered an appropriate instrument to (partially) finance such infrastructure.
- (75) For aid to energy infrastructure, State aid will be deemed to be appropriate provided that the measure is at least partly funded by the transmission system operator (TSO) or distribution system operator, and that the part of the investment cost funded by each participating TSOs is included in their regulated asset bases on the basis of an agreed relative contribution of each participating TSO³⁰. Transmission and distribution infrastructure shall be compatible with advanced metering infrastructure.
- (76) For *operating* aid, 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

²⁸ Where the polluter is identified and where it can be held liable, that person must finance the remediation in accordance with the "polluter pays" principle, and no State aid shall be granted.

²⁹ The rationale and the principles underpinning the regulation of tariffs used to fund the investment and maintenance of energy infrastructure by Transmission System Operators.

³⁰ In the case of cross border infrastructure, when the TSO of all participating Member States at least partly fund the investment.

costs over a given period, to incentivise undertakings to contain costs and develop their business in a more efficient manner over time³¹.

- (77) For *ad hoc* aid, the Member State must demonstrate how reaching the objective of common interest is better ensured by such aid than by aid under a scheme or other types of measures.

5.3.2. Appropriateness among different aid instruments

- (78) 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 or reductions in taxes, or other compulsory charges, or the supply of land, goods or services at favourable 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 favourable terms) are less appropriate.
- (79) 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.
- (80) 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.

5.4 Incentive effect

5.4.1. General conditions

- (81) State aid provided for environmental and energy purposes can only be found compatible with the internal market if it has an incentive effect. An incentive effect occurs when the aid leads to the beneficiary changing its behaviour to increase the level of environmental protection and which it would not carry out without the aid. For energy aid, the aid would need to lead to the development of energy infrastructure which would not be constructed, or only at a much later stage, 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.
- (82) The Commission considers that aid does not present an incentive 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. If works begin before the aid application is submitted by the beneficiary to the national authorities, the aid granted in respect of that project will not be considered compatible with the internal market.

³¹ 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).

- (83) Member State must introduce a standard application form for aid annexed to these Guidelines³². In the application form, SMEs and large companies must explain what would have happened without aid (i.e. the counterfactual scenario). In addition, large companies must submit documentary evidence in support of the counterfactual described in the application form. SMEs are not subject to such obligation.
- (84) 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.
- (85) 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)³³, the internal rate of return (IRR)³⁴ 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 these 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.
- (86) 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.
- (87) 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.
- (88) The Commission considers that aid does not have an incentive effect where investments bring undertakings into compliance with EU standards already adopted and not yet in force. For the period after adoption of standards but before the standards enter into force, aid may be allowed for early adaptation if the compatibility conditions for such aid are met. An incentive effect may still be present in the case of more stringent national standards compared to EU standards. If an EU standard is complied with by meeting the lower value of a range of environmental levels, a move to a higher value within the standard may still present an incentive effect.
- (89) 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 EU standards, provided that the acquisition occurs before these standards enter into force

³² See Annex 3.

³³ 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).

³⁴ 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.

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 EU 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.

5.4.2. Additional conditions for individual aid

- (90) In addition to the requirement set out above, for measures subject to individual notification, the Member State must 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 strengthen the functioning of the internal 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.
- (91) The Member State could prove the existence of the incentive effect of the aid by providing company documents that show that the level of profitability of the investment pursued is negative over the life time of the project, account being taken of all the advantages and risks identified in this point. In essence, this amounts to showing that the investment suffers from a funding gap. 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 advantages³⁵ while the risks in particular relate to the uncertainty whether investment will be as productive as expected.
- (92) 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.
- (93) 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. 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.
- (94) 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

³⁵ 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.

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.

- (95) 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 internal energy market. Therefore, aid will not be approved in cases where it appears that the same activities would be pursued without the aid.
- (96) 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. Also negotiations on the introduction of a new or more stringent Union standard can negatively affect the incentive effect.

5.5 Proportionality of the aid

5.5.1. General conditions for investment aid

- (97) Environmental protection and energy aid must always be proportional. Aid is considered to be proportional if the aid amount per beneficiary is limited to the minimum needed to achieve the environmental protection or energy objective aimed for.
- (98) 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 objectives, 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 aid³⁶. This alternative investment project is referred to as the counterfactual.
- (99) 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. 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 would correspond to the eligible costs.
- (100) The eligible costs shall be the investment costs in tangible assets and/or in intangible assets. They will be calculated as the cost of the investment directly related to the targeted common objective and will be established by reference to the counterfactual situation where appropriate. The costs not directly linked to the

³⁶ In the application form for aid, the company is requested to specify the aid needed to execute the project/activity.

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

achievement of the environmental or energy objective shall not be eligible. In particular, the eligible costs shall be determined as:

- (a) where the costs of investing in environmental protection 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 environmental protection related cost constitutes the eligible costs;
 - (b) in all other cases, the extra investment costs must be 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 investment that provides for a lower degree of environmental protection and would credibly be realised without aid. 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). In addition, such a reference investment must, from a business point of view, be a credible alternative to the investment under assessment.
- (101) In Annex 4, examples of the relevant counterfactual scenario or eligible cost calculation are presented which reflect the counterfactual that should be used in similar cases.
- (102) For energy saving measures and measures to increase the level of environmental protection beyond EU standards (or early adaptation to such standards) or in the absence of EU 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 determined the extra costs.
- (103) In order for the aid to be proportionate, the Commission considers that the aid amount shall 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.
- (104) Therefore, aid may be deemed compatible if the eligible costs are correctly calculated and maximum aid intensities set out in Annex 2 are respected. These maximum aid intensities are used as a cap for the aid subject to individual notification.
- (105) In certain circumstances higher aid intensities may be justified for some types of aid:
- (a) In regions which are eligible for national regional aid to encourage firms to undertake further investment in environment protection or in energy infrastructure the maximum rate of aid applicable can be increased by 5 percentage points gross in the regions covered by Article 107(3)(c) and Article 107(3)(a). The bonus is not applicable where Member States grant aid up to 100% of the eligible costs.
 - (b) For small and medium-sized enterprises which may be faced with relatively higher costs to achieve environmental or energy objectives compared to the size of their activity and with capital market imperfections which restrict them to bear such costs. Also, a reduced risk

of serious distortions of competition exists when the beneficiary is a small or medium-sized enterprise.

- (c) 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.
- (106) It is only in cases 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 cost³⁸.
- (107) Tradable permit schemes 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.
- (108) For aid related to energy infrastructure and CCS projects, it is generally accepted that the counterfactual scenario would consist in not undertaking a project. Relying on the funding gap approach (i.e. identifying the aid amount which is the minimum necessary to make the project sufficiently profitable) is in those cases an accepted method of defining the needed funding.
- (109) Accordingly, for aid measures in support of energy infrastructure and CCS projects, the eligible cost is the funding gap. For CCS projects, the all revenues including in particular revenues from saved ETS allowances should be taken into account.
- (110) Aid measures in support of transmission and distribution infrastructure strengthening cross-border exchanges and in support of advanced metering infrastructure can have an aid intensity³⁹ of up to [100]% provided that the following conditions are met:
- (a) The beneficiary of the aid project, i.e. the Transmission System Operator, wherever applicable must publicly tender the construction on the basis of clear, transparent and non-discriminatory criteria, aiming at ensuring that the costs and thus the aid is limited to the minimum necessary; and
 - (b) TSO contribution (tariffs) is not less than [20]% of the eligible costs.

Measures in support of energy infrastructure covered under this point and located in assisted regions covered by Article 107(3)a or Article 107(3)c can have an aid

³⁸ 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.

³⁹ Contributions provided by the Transmission System Operator are excluded from the calculation of the aid intensity ceiling.

intensity⁴⁰ of up to [100]% provided that the TSO contribution is not less than [10]%.

- (111) Aid measures in support of energy infrastructure other than mentioned in point (110) can have an aid intensity⁴¹ of up to [50]% provided that the following conditions are met:
- (a) The beneficiary of the aid project, i.e. the Transmission System Operator, wherever applicable must publicly tender the construction on the basis of clear, transparent and non-discriminatory criteria, aiming at ensuring that the costs and thus the aid is limited to the minimum necessary; and
 - (b) TSO contribution (tariffs) is not less than [50]% of the eligible costs.

Measures in support of energy infrastructure covered under this point and located in assisted regions covered by Article 107(3) a or Article 107(3) c can have an aid intensity⁴² of up to [60]% provided that the TSO contribution is not less than [40]%.

5.5.2. Additional conditions for individual investment and operating aid

- (112) For notifiable individual aid, compliance with the maximum aid intensities set out in this section and in Annex 2, is not sufficient to ensure proportionality.
- (113) 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. Likewise, for aid under a notified scheme, the Member State must ensure that the aid amount corresponds to the net extra costs of implementing 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.
- (114) 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, e.g. 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.
- (115) The Member State should provide evidence that the aid amount is kept to the minimum and that the selection process is proportional. 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 (92).
- (116) In its analysis the Commission will consider the following elements:

⁴⁰ Contributions provided by the Transmission System Operator are excluded from the calculation of the aid intensity ceiling.

⁴¹ Contributions provided by the Transmission System Operator are excluded from the calculation of the aid intensity ceiling.

⁴² Contributions provided by the Transmission System Operator are excluded from the calculation of the aid intensity ceiling.

- (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 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.
- (117) 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.

5.5.3. Operating aid

- (118) Operating aid for environmental protection purposes may be granted to support the production of energy from renewable sources, to support the production of CHP plants or to support energy saving measures.

5.5.3.1. Operating aid for energy from renewable sources

Aid granted by way of green premium or tariff

- (119) Aid for the production of renewable energy during the operational time of the plant may be justified when the cost of producing energy from renewable energy sources is higher than the market price of the form of energy concerned. That applies to the production of renewable energy for the purposes of subsequently selling it on the market as well as for the purposes of the undertaking's own consumption. Aid may then be granted until the plant has been fully depreciated according to normal accounting rules.
- (120) Unlike most other renewable sources of energy, biomass requires relatively low investment costs, but higher operating costs. The Commission will, therefore, be amenable to operating aid for the production of renewable energy from biomass exceeding the depreciation period (and amount of investment) where Member States can show that the aggregate costs borne by the undertakings after plant depreciation are still higher than the market prices of the energy or that the input costs of the biomass concerned is still higher than the alternative fossil fuel input source. The Commission will in particular assess whether the measure is designed to automatically adapt to changes in the economic conditions and not granted by way of a fixed tariff independent from actual market prices.
- (121) Where investment aid is granted in accordance with section 5.5.2 any such aid granted to the undertaking in question must be deducted from the operating aid before such operating may be granted.
- (122) In order to ensure that the aid is limited to the minimum, operating aid shall be granted in a genuinely competitive, technology-neutral bidding process on the basis of clear, transparent and non-discriminatory criteria, for delivering newly

installed renewable energy. Such a bidding process shall comply with the following requirements:

- (a) It shall provide for the participation of a sufficient number of undertakings.
 - (b) The budget related to the bidding process shall be a binding constraint in the sense that not all bidders can receive aid.
 - (c) The aid shall be granted on the basis of the initial bid submitted by the bidder, thus excluding subsequent negotiations.
 - (d) A cap may be imposed for each stage of the auction process to ensure that the bidding process is genuinely competitive in each stage. All technologies shall be able to make bids within the established cap and at each stage of the process while ensuring the cheapest technology cannot be overcompensated.
 - (e) The aid shall be granted in the form of a Feed-in Premium.
- (123) Furthermore, in order to limit the distortive effects such bidding process should be open to other EEA countries. The commission recognises that the Renewables Directive⁴³ translates the EU 2020 targets into mandatory national targets for Member States. In order to ensure that renewable energy produced in another Member State counts to the target of the supporting Member State a cooperation agreement needs to be in place.
- (124) Accordingly, in order to ensure that national targets are achieved, Member States may want to enter into cooperation agreements first before opening the bidding process to other EEA countries. The Commission therefore considers that Member States may duly justify why a bidding process would not be open to other EEA countries.
- (125) Where the Member State demonstrates that the use of the procedure would not allow for a sufficient mix of technologies to be supported, the Commission may accept that the Member State requires a minimum number of different technologies to result from the bidding process. Furthermore, the Commission could accept that a separate bidding process is set up for a set of different technologies which are not sufficiently competitive for receiving aid in a genuinely technology neutral bidding process. Such bidding process shall be neutral towards the technologies.
- (126) If a Member State demonstrates that a tender procedure is not appropriate, aid to support demonstration projects or large scale projects at first commercial use may be granted by way of a fixed feed-in-premium to compensate for the difference between the cost of producing energy from renewable sources, including depreciation of extra investments for environmental protection, and the market price of the form of energy concerned. The aid may also cover a normal return on capital which does not exceed normal industry benchmarks.
- (127) Aid for biofuels granted by way of a tax exemption may only be granted in a technology neutral manner, if a Member State demonstrates that the production costs are higher than the market price of the reference fossil fuel, taking into account prices quoted on exchanges. As regards the reference fossil fuel, the

⁴³ Directive 2009/29/EC

Commission will take into account whether the normal fuel available on the market concerns a pure fossil fuel or a blended fuel.

- (128) A Member State has to ensure that an annual monitoring mechanism is in place to verify potential overcompensation based on an ex ante determined methodology. If overcompensation is determined on the basis of such methodology, a decrease of the aid for the subsequent period has to take place of at least the amount of overcompensation.
- (129) Furthermore, the Member State must regularly monitor, at least every [2] years, the (maximum) aid level set as a cap in an auctioning process or as the subsidy level for demonstration projects. In the event the monitoring shows that the (maximum) aid level lead to overcompensation, the aid level shall be adjusted.

Aid granted by way of certificates

- (130) Member States may grant support for renewable energy sources by using market mechanisms such as green certificates. These market mechanisms 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 mechanisms shall be technology neutral and the price of these green certificates is not fixed in advance but depends on supply and demand.
- (131) The Commission may authorise the aid if Member States can show that support is essential to ensure the viability of the renewable energy sources concerned, does not for the scheme in the aggregate result in overcompensation and does not dissuade renewable energy producers from becoming more competitive. The Commission will authorise such aid systems for a maximum period of ten years. After such period a Member State can re-notify the measure.

5.5.3.2. Operating aid for CHP plants

- (132) 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.;
 - (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.
- (133) The Member State has to verify whether the aid is necessary taking into account the costs and revenue resulting from the production and sale of the electric power or heat. The production cost may include a normal return on capital, but any gains by the undertaking in terms of heat production must be deducted from production costs. A regular monitoring mechanism needs to be in place to verify whether aid for cogeneration plants is required.
- (134) If it is established that aid may be needed, such aid shall be granted by way of a genuine competitive bidding process on the basis of the principles set out in 5.5.3.1. If a competitive process cannot be ensured, aid shall only be granted as investment aid.

5.5.3.3. Operating aid for energy saving measures

- (135) Operating aid for energy saving shall be granted 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 saving⁴⁴. 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 aid is subject to a limited duration of five years.

5.5.4. Cumulation of aid

- (136) Aid may be awarded concurrently under several schemes or cumulated with *ad hoc* aid, provided that the total amount of public support measures for the aided project remains within the limits set by the aid ceilings in these Guidelines. However, EU funding centrally managed by the Commission that is not directly or indirectly under the control of the Member State and does not constitute state aid should not be taken into account⁴⁵, when both such funding and national funding are assessed together for the purpose of compliance with European regulations.
- (137) However, where the expenditure eligible for aid is eligible in whole or in part for aid for other purposes, the common portion will be subject to the most favourable aid ceiling under the applicable rules.
- (138) 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.

5.6 Avoidance of undue negative effects on competition and trade

- (139) 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. Certain situations can be identified where the positive effects outweigh the negative effects manifestly outweigh any positive effects, meaning that the aid cannot be found compatible with the internal market.

5.6.1. General conditions

- (140) 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 affected⁴⁶. As a starting point, if the aid is proportional and limited to the net extra costs, the negative impact of the aid is softened. However, even where aid is necessary and proportional, aid may result in a change in behaviour of the beneficiaries which distorts competition. A profit seeking

⁴⁴ The concept of production costs must be understood as being net of any aid but inclusive of a normal level of profit

⁴⁵ This applies to both the application of aid intensities as well as notification thresholds.

⁴⁶ A number of markets may be affected by the aid, because the impact of the aid may not be restricted to the market corresponding to the activity that is supported but may extend to other markets, which are connected to that market either because they are upstream, downstream or complementary, or because the beneficiary is already present on them or may be so present in the near future

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.

- (141) 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).
- (142) The Commission will assess the distortive effects of the aid by considering the following elements:
- (a) *reduction in or compensation of production unit costs*: if the new equipment⁴⁷ 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 its 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 higher quality product it is likely that it will increase its sales and possibly gain a 'first mover' advantage. The greater the consumer preference for environmental product characteristics, the greater the competition distortion.
- (143) 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.
- (144) In view of its generally positive effects on competition, the Commission will assume that the aid to energy infrastructure strengthening cross border exchanges does not have undue distortive effects, provided that the infrastructure project complies with the applicable rules under Electricity Directive 2009/72/EC and Gas Directive 2009/73/EC, in particular in relation to third party access requirements.
- (145) For the same reasons the Commission will not question the distortive effects of aid to infrastructure not covered by point (144) above, if the following conditions are met:

⁴⁷ 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.

- (a) The infrastructure project complies with the applicable rules under Electricity Directive 2009/72/EC and Gas Directive 2009/73/EC, in particular in relation to third party access requirements, and is not exempted on the basis of Article 36 of Directive 2009/72/EC; and
 - (b) The infrastructure project is designated as a project of common interest under Council Regulation EU/347/2013.
- (146) Aid to advanced metering infrastructure is deemed not to have undue distortive effects if the following conditions are met:
- (a) The aid measure allows for actual average changes in electricity demand of at least [5]% across at least [50]% of potential end-user demand reached by the infrastructure over a relevant time period, normally considered to be a year; and
 - (b) The infrastructure project complies with the applicable rules under Electricity Directive 2009/72/EC and Gas Directive 2009/73/EC, in particular in relation to third party access requirements.
- (147) In view of its generally negative effects on competition, the Commission first considers that where the creation of capacity by the project takes place in a market which is structurally in absolute decline, the Commission could consider it to be a negative effect, which is unlikely to be compensated by any positive effect.
- (148) Second, the Commission establishes maximum aid intensities. These 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. In general, the greater the positive effects the aided project is likely to give rise to and the higher the likely need for aid, the higher the cap on aid intensity

5.6.2. Additional conditions for individual aid

- (149) If State aid measures are well targeted, the risk that the aid will unduly distort competition rather limited. Consequently, it is crucial that environmental State aid measures are well targeted.
- (150) For measures subject to individual notification, 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.
- (151) 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.

5.7 Transparency

- (152) The Member State concerned shall 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.
- (153) 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 restrictions⁴⁸.

⁴⁸ This information should be regularly updated (for example every six months) and shall be available in non-proprietary formats.

6. Capacity mechanisms [*and aid to nuclear energy*]

- (154) The Commission applies the common assessment principles as set out in section 3 to aid in the form of capacity mechanisms [*and aid to nuclear energy*]. In view of the more limited case experience, the application of these principles to aid in the form of capacity mechanisms [*and aid to nuclear energy*] is set out in a separate section. The rules on transparency as clarified in section 5.7 and cumulation as clarified in section 5.5 also apply to the aid measures covered by this section of the Guidelines.

6.1 Capacity mechanisms

- (155) The Commission takes the view that mechanisms to ensure that certain generation adequacy levels are met at the national level may constitute State aid in the meaning of Article 107(1) of the TFEU. In assessing such State aid measures the Commission will in particular assess whether the measure is designed so that it does not unduly hamper the development of the single market in electricity.
- (156) The Commission will conduct the compatibility assessment on the basis of the elements specified in this section and in the light of the common assessment principles set out in section 3. The Commission can also take other elements into account which are deemed necessary for the assessment of the specific measure.

Contribution to a common objective and the necessity for State intervention (market failure)

- (a) The objective at which the measure is aimed must be clearly defined, for example in terms of the target excess capacity margin.
- (b) The nature of the problem preventing the objective from being reached in the absence of the measure should be clearly defined. In particular, the capacity inadequacy should be clearly described, for example as relating to lack of peak load capacity, short-term flexibility, or network bottlenecks. When assessing the nature of the problem, other measures that can have an impact on the nature or size of the problem, e.g. the actual or potential existence of interconnectors, storage capacity or demand side measures, must be taken into account in the relevant time frame.
- (c) The cause of the problem should be clearly identified, for example in terms of weather, demand/supply, or regulatory issues.
- (d) The objective, the nature of the problem and the cause of the problem must 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.
- (e) The Member State should clearly demonstrate the reasons why the market cannot be expected to deliver the target excess capacity margin in the absence of intervention.

Appropriateness of the aid (design of the measure)

- (f) The aid should only remunerate the service of pure availability provided by the generation operator, and will not include any remuneration for the sale of electricity, or to cover for any of its specific costs.
- (g) The aid should be granted through a mechanism which allows aid to be withdrawn when the generation adequacy issue which the measure is intended to address recedes.
- (h) The measure should provide adequate incentives to both existing generation operators and prospective investors in generation, or to operators using other measures such as demand-side response.

Incentive effect of the aid

- (i) The incentive effect of the aid will be assessed on the basis of the conditions set out in section 5.4 of these Guidelines.

Proportionality of the aid amount

- (j) The overall amount of aid must 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. A genuinely competitive bidding process will be considered as leading to reasonable rates of return under normal circumstances.
- (k) Therefore, the aid should be granted in a genuinely competitive bidding process on the basis of clear, transparent and non-discriminatory criteria, effectively targeting the defined objective.
- (l) The measure is designed in a way which results neither in the generation of windfall profits for existing generation operators nor in the under-provision of funds for new generation operators, while being in principle open to both categories of generation operator, and taking account of reasonable expectations on the likely evolution of electricity and fuel prices in the time period covered by the measure (should not only address generation).
- (m) The measure should be designed in a way so as to allow for adjustment of aid levels and/or for at least partial claw-back of excess aid when market circumstances, or circumstances specific to the selected beneficiaries, warrant such claw-back.

Avoidance of undue negative effects on competition and trade

- (n) The measure must be designed in a way so as to make it possible for generation operators or operators of other measures from other Member States to participate in the capacity mechanism, 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 ensured.
- (o) The measure should not unduly result in the displacement of incentives to invest in interconnection capacity with neighbouring Member States, including both private investment and investment by TSOs.

- (p) The measure should be technologically neutral and does not result in implicit or explicit preference for any individual classes of generation operators.
- (q) The aid should not result in the distortion of incentives to invest in generation which might have predated the measure.
- (r) The measure does not unduly restrict participation to the capacity mechanism by any generation operator potentially capable of participating in it.
- (s) The measure should not act against existing market mechanisms that contributes to the provision of capacity.

[6.2 Aid to nuclear energy]

- (157) *[Pursuing the development of nuclear energy, in particular by facilitating investment in nuclear energy, is an objective covered under Article 2(c) of the Euratom Treaty and therefore the Commission does not question that such support measures are aimed at a common EU objective.]*
- (158) *Nuclear third party liability regimes are governed by national laws but their main principles are set forth in international conventions ratified by the vast majority of Member States⁴⁹. These conventions provide for a common basis for rules on matters such as the liable party, minimum amount of liability, compulsory insurance and the role of the State. Without prejudice to harmonised Community legislation in this field, the Commission will take into account this common basis for the compatibility assessment of related state aid measures*
- (159) *Costs related to decommissioning, the treatment, management and disposal of nuclear waste, and the treatment, management and disposal of nuclear spent fuel correspond to pollution costs which should normally be borne by the polluter, i.e. the owner of the nuclear plant. This is further confirmed in Commission Recommendation No. 2006/851/Euratom of 24/10/2006 on the management of financial resources for the decommissioning of nuclear installations, spent fuel and radioactive waste. Section 3(3) of the Recommendation states: "The polluter pays principle should be fully applied throughout the decommissioning of nuclear installations. In this regard, the primary concern of nuclear operators should be to ensure the availability of adequate financial resources for safe decommissioning by the time the respective nuclear installation is permanently shut down".*
- (160) *This Recommendation envisages a transposition period which ends on 23 August 2013. In its Recommendation, the Commission has recognised that although in principle operators should bear the entire costs of decommissioning, related nuclear waste management and spent fuel management that "due attention should be paid to cases arising for historical reasons where a special solution is the most appropriate" (section 6(14)).*

⁴⁹ Namely, the 1960 Paris Convention on Nuclear Third Party Liability and the 1963 Vienna Convention on Civil Liability for Nuclear Damage. In the five Member States non-party to either of these Conventions, national common tort law rules apply to nuclear incidents.

- (161) *Therefore the Commission is of the view that until the date of the adoption of the above mentioned Recommendation, operators of nuclear plants shall be made to bear the costs related to decommissioning and the treatment, management and disposal of nuclear waste to the extent that such costs where appropriately identified and accounted for. In those situations where funds aimed at covering those costs were found to be insufficient to cover the latest estimates of those costs, any state aid which might be necessary will in principle be found compatible with Article 107(3)(c) of the TFEU provided that the costs are accurately assessed based on a rigorous methodology which leads to any potential state aid to be minimised.*
- (162) *Operators of nuclear plants are expected to fully bear the costs of decommissioning, the treatment, management and disposal of nuclear waste and the treatment, management and disposal of spent nuclear fuel after 24 October 2006.*
- (163) *The Commission takes the view that measures to support the development of nuclear energy in particular to support the construction and operations of a nuclear plant, may constitute State aid in the meaning of Article 107(1) of the TFEU.*
- (164) *In assessing state aid measures in support of nuclear energy the Commission will apply the compatibility principles set out below on the basis of common compatibility principles set out in section 3. In their assessment, the Commission can also take other elements into account which are deemed necessary for the assessment of the specific support measure.*

Need for state intervention (market failure)

- (a) *The objective at which the measure is aimed must be clearly defined.*
- (b) *The Member State shall clearly identify and define the market failure which causes the inability of the market to deliver investment in nuclear energy production on its own. For example, it must be clearly defined whether the market failure is related to the low-carbon nature of nuclear energy or to the lack of investments in (baseload) generation capacity.*
- (c) *The nature of the problem preventing the market from achieving the result in the absence of the aid should be clearly defined. A capacity inadequacy should be clearly described, for example as relating to lack of base load capacity, or network bottlenecks.*
- (d) *When assessing the market failure, other measures that can have an impact on the nature or size of the failure, e.g. the actual or potential existence of interconnectors, storage capacity or demand side measures, must be taken into account in the relevant time frame. Also, the causes of the market failure should be clearly identified, for example in terms of weather, demand/supply, or regulatory issues.*
- (e) *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 to allow the Commission to assess the existence of the market failure and whether the instrument chosen is appropriate to address the problem.*

Appropriateness of the aid measure

- (f) *The aid measure shall be addressed at remedying solely the underlying market failure. In addition, the Member State has to demonstrate that the instrument chosen is the least distortive way of granting the aid*
- (g) *The aid should be granted through a mechanism which is limited in time.*
- (h) *The instrument should be appropriate in comparison with alternative non-aid measures and with alternative aid instruments*
- (i) *The objective, the nature of the problem and the cause of the problem must be quantified using an appropriate and consistent unit of measure. The unit of measure should be described and its method of calculation should be defined.*

Incentive effect of the aid

- (j) *The incentive effect of the aid will be assessed on the basis of the conditions set out in section 5.4 of these Guidelines.*

Proportionality of the aid

- (k) *The aid amount must be limited and cannot compensate more than a reasonable rate of return. The Commission considers that a genuinely competitive bidding process will ensure reasonable rates of return under normal circumstances. Therefore, the aid should be granted in a genuinely competitive bidding process on the basis of clear, transparent and non-discriminatory criteria, effectively targeting the defined objective.*
- (l) *The measure should be designed in a way so as to allow for adjustment of aid levels and/or for at least partial claw-back of excess aid when market circumstances, or circumstances specific to the selected beneficiaries, warrant such claw-back*

Avoidance of major negative effects on competition and trade

- (m) *Provided that a Member State demonstrates that the objective cannot be achieved in a technologically neutral manner, the Commission may allow a less strict implementation of this principle. The measure must be designed so as to have the potential to be phased out and allow for a technologically neutral support mechanism to replace it, with a clear commitment by the Member State on a reasonable time frame for the introduction of such replacing mechanism.*
- (n) *The Member State has to demonstrate that the aid does not result in the distortion of incentives to invest in other generation technologies which might have predated the measure or act against existing market mechanisms contributing to the provision of capacity.*
- (o) *If the measure results in a centralised acquisition of large volumes of capacity, it must be such as not to unduly restrict or distort competition in downstream markets.*

Decommissioning costs

- (p) *Member States must ensure that new nuclear plant operators set aside sufficient funds to finance any cost related to the decommissioning of their plants, adopting a methodology which ensures that the 'polluter pays' principle is fully respected.*
- (q) *Member States are expected to ensure full respect of the 'polluter pays principle' as of 24 June 2006 for nuclear plants built before the adoption of these Guidelines.*
- (r) *For historical reasons, a deviation from the 'polluter pays principle' may exceptionally be necessary. In particular, for nuclear plants built before 24 June 2006 and for the period of operations from their construction until that date, aid aimed at covering the difference between the actual costs of decommissioning and the funds specifically set aside by the nuclear plant operator to cover such costs will in principle be considered compatible with Article 107(3)(c) of the TFEU, provided that the underlying cost calculations are accurate and justified, and that any need for State aid is limited to the minimum possible*

Nuclear waste management and disposal costs

- (s) *Member States must ensure that new nuclear plant operators set aside sufficient funds to finance any cost related to nuclear waste disposal and management and to comply with Council Directive 2011/70/EURATOM of 19 July 2011. The methodology used to quantify the costs associated to nuclear waste management and disposal must be such as to minimise any potential State aid and to respect the 'polluter pays' principle.*
- (t) *Member States are expected to ensure full respect of the 'polluter pays principle' as of 24 June 2006 for nuclear plants built before the adoption of these Guidelines.*
- (u) *For historical reasons, a deviation from the 'polluter pays principle' may exceptionally be necessary. In particular, for nuclear plants built before 24 June 2006 and for the period of operations from their construction until that date, aid aimed at covering the difference between the actual costs of nuclear waste management and disposal costs and the funds specifically set aside by the nuclear plant operator to cover such costs will in principle be considered compatible with Article 107(3)(c) of the TFEU, provided that the underlying cost calculations are accurate and justified, and that any need for State aid is limited to the minimum possible*

Liability costs

- (v) *Article 98 of the Euratom Treaty establishes that "Member States shall take all measures necessary to facilitate the conclusion of insurance contracts covering nuclear risks".*
- (w) *No aid can be granted for costs that the operator has to bear in accordance with the applicable international convention or (any stricter) national legislation adopted by the Member State. Aid provided to cover the costs related to liability (coverage) and exceeding the mandatory*

limits imposed on beneficiaries⁵⁰, may be declared compatible with Article 107(3)(c) of the TFEU provided that the underlying cost calculations are accurate and justified, and that any need for State aid is limited to the minimum possible.]

⁵⁰ This paragraph refers exclusively to aid granted to the nuclear operator liable for the incident and not to any affected entity other than the operator at hand and is without prejudice of the Member State granting aid under article 107(2)(b) of the TFEU.

7. Environmental taxes and funding of support for energy from renewable sources

- (165) Aid in the form of reductions of or exemptions from environmental taxes and reductions from charges on electricity to fund renewable energy support schemes will be considered compatible with the common market within the meaning of Article 107(3)(c) of the TFEU provided that the conditions set out below are met.
- (166) Aid in the form of a tax reduction or exemption which is granted to support specific investments or projects because of their environmental impact, e.g. to support renewable energy or CHP, will be subject to the rules set out in chapter 3. This section will not be applicable to such aid.
- (167) Moreover, in contrast to tax exemptions, lump sum tax credits preserve the price signal and are therefore considered less distortive. The use of tax credits is therefore considered a preferred means of aid⁵¹ and will be positively taken into account if the thresholds in point (172) are not met. In case of reductions from charges on electricity to fund renewable energy support schemes, aid shall be granted by way of a lump sum credit.
- (168) For the application of this section, Member States should provide information on, the respective sector(s) or categories of beneficiaries covered by the exemptions/reductions, on the one hand and the situation of the main beneficiaries in each sector concerned, on the other hand. The exempted sectors should be properly described and a list of the largest beneficiaries for each sector should be provided (considering notably turnover, market shares and size of the tax base).

7.1 Reductions or exemptions from non-harmonised environmental taxes and from harmonised environmental taxes below the EU minimum tax levels

- (169) Aid in the form of reductions of or exemptions from environmental taxes other than those referred to in section 7.1⁵² is considered to be compatible with the common market within the meaning of Article 107(3)(c) of the TFEU provided that the conditions set out in points (170) to (174) are fulfilled.
- (170) The reduction or exemption from the environmental tax contributes at least indirectly to an improvement of the level of environmental protection and exemptions do not undermine the general objective pursued. In some cases, exemptions from or reductions in taxes are granted in order to avoid placing firms which are particularly affected by the tax in a difficult competitive situation. The Commission will rely on information from the Member State to assess how the reductions or exemptions of the tax do not undermine the objective of the tax⁵³.
- (171) The Commission will consider the aid to be necessary if the following cumulative conditions are met:

⁵¹ The Commission will in also assess whether the lump sum aid is provided in such a way to avoid windfall profits.

⁵² For example, reductions of or exemptions from taxes which are not covered by Union legislation or which are below the Union minimum tax level.

⁵³ In many cases the firms benefiting from the tax reductions/exemptions are the ones with the most polluting behaviour targeted by the tax.

- (a) the choice of beneficiaries must be based on objective and transparent criteria, and the aid must be granted in principle in the same way for all competitors in the same sector/relevant market⁵⁴ if they are in a similar factual situation;
 - (b) the environmental tax without reduction must lead 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 cannot be passed on to customers without leading to important sales reductions.
- (172) The Commission considers that the conditions set out under (171)(b) and (171)(c) are met if the increase in production costs, resulting from the environmental tax without reduction, calculated as a proportion of the gross value added amounts to at least [5]% and the intensity of trade with third countries is at least [10]%, including intra EU trade. If one or both of these thresholds is not met the burden of proof is on the Member State to demonstrate that the beneficiaries cannot pass on the cost increase to customers without leading to important sales reductions as set out in point(171)⁵⁵.
- (173) The Commission will consider the aid to be proportional if one of the following conditions is met:
- (a) aid beneficiaries pay at least 20 % of the national tax;
 - (b) the reductions or exemptions are conditional on the conclusion of agreements between the Member State and the recipient undertakings or associations of undertakings whereby the undertakings or associations of undertakings commit themselves to achieve environmental protection objectives which have the same effect as if aid beneficiaries pay at least 20% of the national tax or 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 must satisfy the following conditions:
 - i the substance of the agreements must be negotiated by each Member State and must specify in particular the targets and fix a time schedule for reaching the targets;
 - ii Member States must ensure independent⁵⁶ and timely monitoring of the commitments concluded in these agreements;
 - iii these agreements must be revised periodically in the light of technological and other developments and stipulate effective penalty arrangements applicable if the commitments are not met.
- (174) Tax reductions or exemptions shall be granted for maximum periods of [ten] years. After such period, Member States shall re-evaluate the appropriateness of the aid measures concerned.

⁵⁴ 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).

⁵⁵ 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 54) as well as estimates of lost sales and/or reduced profits for the companies in the sector/category concerned.

⁵⁶ It is irrelevant for these purposes whether the monitoring is done by a public or a private body.

7.2 Reductions from electricity charges to funding of support for energy from renewable sources

- (175) Aid in the form of reductions from charges on electricity to fund support for energy from renewable sources is considered to be compatible with the common market within the meaning of Article 107(3)(c) of the TFEU provided that the conditions set out in points 166 – 168 are fulfilled.
- (176) The Commission will consider the aid to be necessary if the following cumulative conditions are met:
- (a) the choice of beneficiaries must be based on objective and transparent criteria, and the aid must be granted in principle in the same way for all competitors in the same sector/relevant market⁵⁷ if they are in a similar factual situation;
 - (b) the charge without reduction must lead 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 cannot be passed on to customers without leading to important sales reductions.
- (177) The Commission considers that the conditions set out under (176)(b) and (176)(c) are met if the charge without reduction would lead to an increase in production costs calculated as a proportion of the gross value added amounting to at least [5]% and the intensity of trade with third countries is at least [10]%. If one or both of these thresholds is not met the burden of proof is on the Member State to demonstrate that the beneficiaries cannot pass on the cost increase to customers without leading to important sales reductions as set out in point (176)⁵⁸.
- (178) The Commission will consider the aid to be proportional if aid beneficiaries pay at least 20% of the normal charge if no reductions were granted, the aid is paid as a lump sum, the aid is degressive and the aid is phased out in [6] years.

⁵⁷ See footnote 57

⁵⁸ See footnote 58.

8. Evaluation

- (179) 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.
- (180) Evaluations will be carried out for schemes where the potential distortion of competition is particularly high, i.e. that may risk to significantly restrict competition if their implementation is not reviewed in due time.
- (181) 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.
- (182) The counterfactual evaluations referred to in paragraph (29) 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.
- (183) 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 elements⁵⁹:
- (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.
- (184) 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

⁵⁹ 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.

- (185) 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.
- (186) 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.

9. Entry into force and applicability

- (187) 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 2008⁶⁰. These Guidelines will be applicable until 31 December 2020.
- (188) 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.
- (189) The Commission herewith proposes to Member States, on the basis of Article 108(1) of the TFEU, 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) Member States should amend, where necessary, schemes concerning aid in the form of tax reduction or exemption covered by Directive 2003/96/EC before [31 December 2014];

⁶⁰ OJ C 82/1, 1.4.2008.

- (b) the new thresholds mentioned in section 3.2 for individual projects will apply as from the first day following the publication of these Guidelines in the Official Journal of the European Union;
 - (c) the duty to provide more detailed annual reports will apply to aid granted under existing aid schemes as of [1 January 2015].
 - (d) Operating aid measures in support of energy from renewable sources need to be brought in line by 31 December 2015.
- (190) 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.
- (191) 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 aid⁶¹.

10. Reporting and monitoring

- (192) 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 659/1999⁶² or any regulations replacing those regulations, Member States must submit annual reports to the Commission
- (193) Member States shall transmit to the Commission information on each individual aid award exceeding EUR 3 million granted under a scheme, in the format laid down in Annex 4, within 20 working days from the day on which the aid is granted.
- (194) 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.

11. Revision

- (195) 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.

⁶¹ OJ C 119/22, 22.05.2002

⁶² 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 undertakings⁶³, 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;
- (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;

⁶³ 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.

- (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 sources⁶⁴;
- (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 sources⁶⁵;
- (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* means the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;
- (12) *high-efficiency cogeneration* means cogeneration making overall primary energy savings compared to separate production as provided for by Directive 2012/27/EU⁶⁶;
- (13) *district heating* means the supply of heat, either in the form of steam or hot water, from a central source of production through a transmission and distribution system to multiple buildings, for the purpose of heating;
- (14) *energy-efficient district heating* means district heating which satisfies the definition of efficient district heating and cooling system as set out in Article 2(41) and (42) of Directive 2012/27/EU⁶⁷;
- (15) *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;
- (16) *Feed-in Premium* means a premium paid on top of the market price which exposes renewable energy producers to market prices;
- (17) *Union 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

⁶⁴ OJ L 140/16, 5.6.2009.

⁶⁵ OJ L 140/16, 5.6.2009.

⁶⁶ OJ L 315/1, 14.11.2012.

⁶⁷ 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 electricity⁶⁸;

- (18) *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 enterprises⁶⁹.
- (19) *large enterprises and large undertakings* means enterprises which are not within the definition of small and medium-sized enterprises;
- (20) *aid* means any measure fulfilling all the criteria laid down in Article 107(1) of the Treaty;
- (21) *individual aid* means aid granted either on the basis of a scheme or on an ad hoc basis.
- (22) *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;
- (23) *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);
- (24) *operating costs* means, for the purposes of calculating eligible costs, in particular additional production costs flowing from the extra investment for environmental protection;
- (25) *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;
- (26) *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,

⁶⁸ 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).

⁶⁹ 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;
- (27) *internalisation of costs* means the principle that all costs associated with the protection of the environment should be included in the polluting undertakings' production costs;
- (28) *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 damage⁷⁰, to physical surroundings or natural resources;
- (29) *polluter* means someone who directly or indirectly damages the environment or who creates conditions leading to such damage⁷¹;
- (30) *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.
- (31) *Ad hoc aid* means aid not granted on the basis of an aid scheme.
- (32) *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

⁷⁰ 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).

⁷¹ 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.

(iv) Concerning carbon dioxide:

- a. dedicated pipelines, other than upstream pipeline network, used to transport anthropogenic carbon dioxide from more than one source, i.e. industrial installations (including power plants) that produce carbon dioxide gas from combustion or other chemical reactions involving fossil or non-fossil carbon-containing compounds, for the purpose of permanent geological storage of carbon dioxide pursuant to Directive 2009/31/EC of the European Parliament and of the Council;

- b. facilities for liquefaction and buffer storage of carbon dioxide in view of its further transportation. This does not include infrastructure within a geological formation used for the permanent geological storage of carbon dioxide pursuant to Directive 2009/31/EC and associated surface and injection facilities; and
 - c. any equipment or installation essential for the system in question to operate properly, securely and efficiently, including protection, monitoring and control systems.
- (33) *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.
- (34) *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.
- (35) *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.
- (36) *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.
- (37) *Oil transmission* means pipelines used to transport crude oil.
- (38) *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.
- (39) *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.
- (40) *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.
- (41) *Final customer* means a customer purchasing electricity for its own use.
- (42) *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.
- (43) *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 .
- (44) *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.

- (45) *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).
- (46) *Oil storage* means pumping stations and storage facilities necessary for the operation of crude oil pipelines.
- (47) *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.
- (48) *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.
- (49) *Generation operator* is an undertaking which produces electrical power from fuel sources.
- (50) *Capacity mechanism* means a mechanism aimed at ensuring that certain generation adequacy levels are met at the national level.

Annex 2 Aid intensities

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

	Small enterprise	Medium-sized enterprise	Large enterprise
Aid for undertakings going beyond Community standards or increasing the level of environmental protection in the absence of Community standards	[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 Community 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] %,	[55] %,	[45] %,
Aid for cogeneration installations	[100] % if bidding process	[100] % if bidding process	[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 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 Article 107(3)a TFEU up to a maximum of 100% aid intensity.			

Annex 3 Standard application form

Annex 4 Typical State interventions

(52) The Commission considers typical examples of state aid interventions to increase the level of environmental protection or strengthen the internal energy market.

(53) 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 costs⁷²
<i>CHP</i>	The investment costs for the additional equipment needed for the installation to operate as a high-efficiency cogeneration installation
<i>Environmental Studies⁷³</i>	The eligible costs are the costs of the studies.
<i>Remediation contaminated sites</i>	The costs incurred ⁷⁴ for the remediation work, less the increase in the value of the land ⁷⁵ .
<i>District heating</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 management⁷⁶</i>	The cost of conventional production not involving waste management with the same capacity investment.
<i>Aid for going beyond EU standards</i>	The extra investment costs consist of the additional investment costs necessary to go beyond the level of environmental protection required by the EU standards ⁷⁷
<i>Absence of EU 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 transport</i>	In principle as a counterfactual the refinery should be 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 (e.g. heat exchanger in the case of waste heat). If the by-product would need to be disposed: the

⁷² The Commission may accept alternative counterfactual situations if duly justified by the Member State.

⁷³ This includes aid for energy efficiency audits.

⁷⁴ 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.

⁷⁵ Evaluations of the increase in value of the land resulting from remediation have to be carried out by an independent expert.

⁷⁶ This concerns waste management of other undertakings and includes activities of re-utilisation, recycling and recovery.

⁷⁷ The cost of investments needed to reach the level of protection required by the Union standards is not eligible and need to be deducted.

	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.