

II

*(Information)*INFORMATION FROM EUROPEAN UNION INSTITUTIONS, BODIES,
OFFICES AND AGENCIES

EUROPEAN COMMISSION

COMMUNICATION FROM THE COMMISSION

Guidelines on State aid for environmental protection and energy 2014-2020*(2014/C 200/01)***Table of Contents**

INTRODUCTION	2
1. SCOPE AND DEFINITIONS	3
1.1. Scope of application	3
1.2. Aid measures covered by the Guidelines	5
1.3. Definitions	5
2. NOTIFIABLE ENVIRONMENTAL AND ENERGY AID	10
3. COMPATIBILITY ASSESSMENT UNDER ARTICLE 107(3)C OF THE TREATY	11
3.1. Common Assessment Principles	11
3.2. General compatibility provisions	12
3.3. Aid to energy from renewable sources	23
3.4. Energy efficiency measures, including cogeneration and district heating and district cooling	28
3.5. Aid for resource efficiency and in particular aid to waste management	30
3.6. Aid to Carbon Capture and Storage (CCS)	31
3.7. Aid in the form of reductions in or exemptions from environmental taxes and in the form of reductions in funding support for electricity from renewable sources	32
3.8. Aid to energy infrastructure	36
3.9. Aid for generation adequacy	38
3.10. Aid in the form of tradable permit schemes	41
3.11. Aid for the relocation of undertakings	41
4. EVALUATION	42
5. APPLICATION	43
6. REPORTING AND MONITORING	44
7. REVISION	44

INTRODUCTION

(1) In order to prevent State aid from distorting competition in the internal market and affecting trade between Member States in a way which is contrary to the common interest, Article 107(1) of the Treaty on the Functioning of the European Union (‘the Treaty’) lays down the principle that State aid is prohibited. In certain cases, however, State aid may be compatible with the internal market under Articles 107(2) and (3) of the Treaty.

(2) On the basis of Article 107(3)(c) of the Treaty, the Commission may consider compatible with the internal market State aid to facilitate the development of certain economic activities within the European Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.

(3) The Europe 2020 strategy⁽¹⁾ focuses on creating the conditions for smart, sustainable and inclusive growth. To that end, a number of headline targets have been set, including targets for climate change and energy sustainability: (i) a 20 % reduction in Union greenhouse gas emissions when compared to 1990 levels; (ii) raising the share of Union energy consumption produced from renewable resources to 20 %; and (iii) a 20 % improvement in the EU’s energy-efficiency compared to 1990 levels. The first two of these nationally binding targets were implemented by ‘The climate and energy package’⁽²⁾.

(4) On 22 January 2014 the Commission proposed the energy and climate objectives to be met by 2030 in a Communication ‘A policy Framework for climate and energy in the period from 2020 to 2030’⁽³⁾ (the 2030 Framework). The pillars of the 2030 Framework are: i) a reduction in greenhouse gas emissions by 40 % relative to the 1990 level; ii) an EU-wide binding target for renewable energy of at least 27 %; iii) renewed ambitions for energy efficiency policies; and iv) a new governance system and a set of new indicators to ensure a competitive and secure energy system.

(5) The headline targets mentioned in recital (3) are particularly important for these Guidelines. In order to support achieving those targets, the Europe 2020 strategy put forward the ‘Resource efficient Europe’ as one of the seven flagship initiatives⁽⁴⁾. That flagship initiative aims to create a framework for policies to support the shift towards a resource-efficient and low-carbon economy which helps to:

- (a) boost economic performance while reducing use of resources;
- (b) identify and create new opportunities for economic growth and greater innovation and boost the Union’s competitiveness;
- (c) ensure security of supply of essential resources;
- (d) fight against climate change and limit the environmental impacts of the use resources.

(6) It should be recalled that the Resource Efficiency Roadmap⁽⁵⁾ as well as several Council conclusions call for a phasing out of environmentally harmful subsidies⁽⁶⁾. These Guidelines should therefore consider negative impacts of environmentally harmful subsidies, while taking into account the need to address trade-offs between different areas and policies as recognised by the flagship initiative. Aid for the extraction of fossil fuels is not included in these Guidelines.

⁽¹⁾ COM(2010) 2020 final of 3.3.2010.

⁽²⁾ Decision No 406/2009/EC of 23 April 2009 (OJ L 140, 5.6.2009, p. 136) and Directive 2009/28/EC of 23 April 2009 (OJ L 140, 5.6.2009, p. 16).

⁽³⁾ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions — A policy framework for climate and energy in the period from 2020 to 2030 (COM(2014) 15 final) of 22.1.2014.

⁽⁴⁾ COM(2011) 21 of 26.1.2011.

⁽⁵⁾ COM(2011) 571 final of 20.9.2011.

⁽⁶⁾ The European Council Conclusions from 23 May 2013 confirmed the need to phase out environmentally or economically harmful subsidies, including for fossil fuels, to facilitate investments in new and intelligent energy infrastructure.

(7) The Roadmap also calls on Member States to address gaps in their performance in delivering the benefits from Union legislation⁽⁷⁾. To avoid that State aid measures lead to environmental harm, in particular Member States must also ensure compliance with Union environmental legislation and carry out an environmental impact assessment when it is required by Union law and ensure all relevant permits.

(8) The Communication 'Energy 2020 – A strategy for competitive, sustainable and secure energy'⁽⁸⁾, as part of the 'Resource efficient Europe' flagship initiative already concluded that the objectives of a secure, affordable and sustainable energy market will be undermined unless electricity grids are upgraded, obsolete plants are replaced by competitive and cleaner alternatives and energy is used more efficiently throughout the whole energy chain.

(9) The 2030 Framework calls for an ambitious commitment to reduce greenhouse gas emissions in line with the 2050 roadmap. Delivery of this objective should follow a cost-efficient approach, providing flexibility to Member States to define a low-carbon transition appropriate to their specific circumstances and encourage research and innovation policy to support the post-2020 climate and energy framework. These Guidelines respect those principles and prepare the ground for the 2030 Framework.

(10) In these Guidelines, the Commission sets out the conditions under which aid for energy and environment may be considered compatible with the internal market under Article 107(3)(c) of the Treaty.

(11) In the Communication on State aid modernisation⁽⁹⁾, 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 necessary, 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 these common assessment principles.

1. SCOPE AND DEFINITIONS

1.1. Scope of application

(13) These Guidelines apply to State aid granted for environmental protection or energy objectives in all sectors governed by the Treaty in so far as measures are covered by Section 1.2. They therefore also apply to those sectors that are subject to specific Union rules on State aid (transport⁽¹⁰⁾, coal, agriculture, forestry, and fisheries and aquaculture) unless such specific rules provide otherwise.

⁽⁷⁾ Other legislation such as Directive 2009/28/EC of the European Parliament and the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, JO L 140 5.6.2009, p. 16, ('the Renewable Energy Directive') includes for instance requirements concerning sustainability of biofuels and non-discrimination in Article 17(1) - 17(8) thereof.

⁽⁸⁾ COM(2010) 639 of 10.11.2010.

⁽⁹⁾ COM(2012) 209 of 8.5.2012.

⁽¹⁰⁾ In particular, these Guidelines are without prejudice to the Community Guidelines on State aid for railway undertakings (OJ C 184, 22.7.2008, p. 13). The Railway Guidelines allow for different forms of aid, including aid for reducing external costs of rail transport. Such aid is covered by Section 6.3 of the Railway Guidelines and aims at accounting for the fact that rail transport makes it possible to avoid external costs compared with competing transport modes. Provided all the conditions of Section 6.3 of the Railway Guidelines are fulfilled and provided the aid is granted without discrimination, Member States can grant aid for reducing external costs.

(14) 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 and, under certain conditions, to undertakings active in primary production. The following conditions apply to these sectors:

- (a) for undertakings active in the processing and marketing of fisheries products, if the aid concerns expenses eligible under Council Regulation (EC) No 1198/2006⁽¹¹⁾ or its successor⁽¹²⁾, the maximum aid intensity allowed is the higher of the aid rate provided for in these Guidelines and the aid rate laid down in that Regulation;
- (b) in the field of agricultural primary production and European Agricultural Fund for Rural Development (EAFRD) co-financed measures and forestry aid measures, these Guidelines apply only to the extent that the Community Guidelines for State aid in the agriculture and forestry sector 2007 to 2013⁽¹³⁾ as amended or replaced do not provide any specific rules;
- (c) in the field of fisheries and aquaculture primary production, these Guidelines apply only where no specific provisions dealing with aid for environmental protection or energy objectives exist.

(15) 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⁽¹⁴⁾;
- (b) the financing of environmental protection measures relating to air, road, railway, inland waterway and maritime transport infrastructure;
- (c) stranded costs as defined in the Commission Communication relating to the methodology for analysing State aid linked to stranded costs⁽¹⁵⁾;
- (d) State aid for research, development and innovation⁽¹⁶⁾ which is subject to the rules set out in the Community framework for State aid for research and development and innovation⁽¹⁷⁾;
- (e) State aid to biodiversity measures⁽¹⁸⁾.

(16) Environmental and energy aid may not be awarded to firms in difficulty as defined for the purposes of these Guidelines by the applicable Guidelines on State aid for rescuing and restructuring firms in difficulty⁽¹⁹⁾ as amended or replaced.

⁽¹¹⁾ Council Regulation (EC) No 1198/2006 of 27 July 2006 on the European Fisheries Fund (OJ L 223, 15.8.2006, p. 1).

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

⁽¹³⁾ OJ C 319, 27.12.2006, p. 1. This is also valid to the framework replacing the 2006 Guidelines, the validity of which ends on 31 December 2013.

⁽¹⁴⁾ Environmental aid is generally less distortive and more effective if it is granted to the consumer/user of environmentally friendly products instead of the producer/manufacturer of the environmentally friendly product. In addition, the use of environmental labels and claims on products can be another means to allow consumers/users to make informed purchasing decisions, and to increase demand for environmental friendly products. When well designed, recognised, understood, trusted and perceived relevant by consumers, robust environmental labels and truthful environmental claims can be a powerful tool to guide and shape (consumer) behaviour towards more environmentally friendly choices. Using a reputable labelling/certification scheme with clear criteria and subject to external (third-party) verification will be one of the most effective ways for businesses to demonstrate to consumers and stakeholders that they are meeting high environmental standards. In this light, the Commission does not include specific rules concerning aid for the design and manufacture of environmentally friendly products in the scope of these Guidelines.

⁽¹⁵⁾ Adopted by the Commission on 26 July 2001 and communicated to Member States by letter ref. SG(2001) D/290869, 6 August 2001.

⁽¹⁶⁾ The Guidelines provide for a bonus for eco-innovation projects, which are highly environmentally friendly and highly innovative investments.

⁽¹⁷⁾ OJ C 323, 30.12.2006, p. 1.

⁽¹⁸⁾ This aid can be dealt with under SGEI rules; see cases SA.31243 (2012/N) and NN8/2009.

⁽¹⁹⁾ Communication from the Commission — Community Guidelines on State aid for rescuing and restructuring firms in difficulty (OJ C 244, 1.10.2004, p. 2).

(17) 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 Commission will take account of the amount of aid still to be recovered⁽²⁰⁾.

1.2. Aid measures covered by the Guidelines

(18) The Commission has identified a number of environmental and energy measures for which State aid under certain conditions may be compatible with the internal market under Article 107(3)(c) of the Treaty:

- (a) aid for going beyond Union standards or increasing the level of environmental protection in the absence of Union standards (including aid for the acquisition of new transport vehicles);
- (b) aid for early adaptation to future Union standards;
- (c) aid for environmental studies;
- (d) aid for the remediation of contaminated sites;
- (e) aid for energy from renewable sources;
- (f) aid for energy efficiency measures, including cogeneration and district heating and district cooling;
- (g) aid for resource efficiency and, in particular, for waste management;
- (h) aid for CO₂ capture, transport and storage including individual elements of the Carbon Capture Storage ('CCS') chain;
- (i) aid in the form of reductions in or exemptions from environmental taxes;
- (j) aid in the form of reductions in funding support for electricity from renewable sources;
- (k) aid for energy infrastructure;
- (l) aid for generation adequacy measures;
- (m) aid in the form of tradable permits;
- (n) aid for the relocation of undertakings.

1.3. Definitions

(19) For the purposes of these Guidelines the following definitions apply:

- (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-efficiency' 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 undertakings⁽²¹⁾, or

⁽²⁰⁾ See in this respect the joint Cases T-244/93 and T-486/93, *TWD Textilwerke Deggendorf GmbH v Commission* [1995] ECR II-2265 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).

⁽²¹⁾ 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.

(b) the obligation under Directive 2010/75/EU⁽²²⁾ to use the best available techniques ('BAT') and ensure that emission levels of pollutants are not higher than they would be when applying BAT; for the cases where emission levels associated with the BAT have been defined in implementing acts adopted under Directive 2010/75/EU, those levels will be applicable for the purpose of these Guidelines; where those levels are expressed as a range, the limit where the BAT is first achieved will be applicable.

(4) 'eco-innovation' means all forms of innovation activities resulting in or aimed at significantly improving environmental protection, including new production processes, new products or services, and new management and business methods, the use or implementation of which is likely to prevent or substantially reduce the risks for the environment, pollution and other negative impacts resulting from the use of resources, throughout the life cycle of related activities.

For the purposes of this definition, the following are not considered innovations:

- i. minor changes or improvements;
- ii. an increase in production or service capabilities through the addition of manufacturing or logistical systems which are very similar to those already in use;
- iii. changes in business practices, workplace organisation or external relations that are based on organisational methods already in use in the undertaking;
- iv. changes in management strategy;
- v. mergers and acquisitions;
- vi. ceasing to use a process;
- vii. simple capital replacement or extension;
- viii. changes resulting purely from changes in factor prices, customisation, regular seasonal and other cyclical changes;
- ix. 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;

(6) 'biomass' means the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as biogases and the biodegradable fraction of industrial and municipal waste;

(7) 'biofuel' means liquid or gaseous fuel for transport produced from biomass;

(8) 'bioliquid' means liquid fuel for energy purposes other than for transport, including electricity, and heating and cooling, produced from biomass;

(9) 'sustainable biofuel' means a biofuel fulfilling the sustainability criteria set out in Article 17 of Directive 2009/28/EC of the European Parliament and of the Council⁽²³⁾ on the promotion of the use of energy from renewable sources and any amendment thereof⁽²⁴⁾;

(10) 'cooperation mechanism' means a mechanism which fulfils the conditions of Article 6, 7 or 8 of Directive 2009/28/EC;

(11) '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 and it includes renewable electricity used for filling storage systems, but excludes electricity produced as a result of storage systems;

⁽²²⁾ Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17).

⁽²³⁾ Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (OJ L 140, 5.6.2009, p. 16).

⁽²⁴⁾ The sustainability criteria also apply to bioliquids in accordance with Directive 2009/28/EC.

- (12) 'cogeneration' or combined heat and power (CHP) means the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;
- (13) 'high-efficiency cogeneration' means cogeneration which satisfies the definition of high-efficiency cogeneration as set out in Article 2(34) of Directive 2012/27/EU⁽²⁵⁾;
- (14) 'energy-efficient district heating and cooling' means district heating and cooling which satisfies the definition of efficient district heating and cooling system as set out in Article 2(41) and (42) of Directive 2012/27/EU⁽²⁶⁾. The definition includes the heating/cooling production plants and the network (including related facilities) necessary to distribute the heat/cooling from the production units to the customer premises;
- (15) 'environmental tax' means a tax with a specific tax base that 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) 'Union minimum tax level' means the minimum level of taxation provided for in Union legislation; for energy products and electricity it means the minimum level of taxation laid down in Annex I to Council Directive 2003/96/EC⁽²⁷⁾;
- (17) 'small and medium-sized enterprise' ('SME'), means an undertaking that fulfils the conditions laid down in the Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises⁽²⁸⁾;
- (18) 'large enterprise' and 'large undertaking' mean enterprises which do not fall within the definition of SME;
- (19) 'individual aid' means aid granted either on the basis of a scheme or on an ad hoc basis;
- (20) '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 installments 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;
- (21) 'operating benefit' 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, including operating aid granted for the same eligible costs, feed-in tariffs or other support measures;
- (22) 'operating cost' means, for the purposes of calculating eligible costs, in particular additional production costs such as maintenance costs flowing from the extra investment for environmental protection;
- (23) 'tangible asset' 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;
- (24) 'intangible asset' means, for the purposes of calculating eligible costs, spending on technology transfer through the acquisition of operating licenses or of patented and non-patented know-how where such spending complies with the following conditions:
- (a) it 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;

⁽²⁵⁾ Directive 2012/27/EU of the European Parliament and the Council of 25 October 2012 on energy-efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1).

⁽²⁶⁾ OJ L 315, 14.11.2012, p. 1.

⁽²⁷⁾ Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (OJ L 283, 31.10.2003, p. 51).

⁽²⁸⁾ OJ L 124, 20.5.2003, p. 36.

- (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;
- (25) 'internalise the costs' means the principle that all costs associated with the protection of the environment should be included in the production costs of the polluting undertaking;
- (26) 'polluter' means someone who directly or indirectly damages the environment or who creates conditions leading to such damage ⁽²⁹⁾;
- (27) 'pollution' means the damage caused by the polluter by directly or indirectly damaging the environment, or by creating conditions leading to such damage to physical surroundings or natural resources;
- (28) 'the polluter pays principle' or 'PPP' means that the costs of measures to deal with pollution should be borne by the polluter who causes the pollution.;
- (29) 'contaminated site' means a site where there is a confirmed presence, caused by man, of hazardous substances of such a level that they pose a significant risk to human health or the environment taking into account current and approved future use of the land;
- (30) 'ad hoc aid' means aid not granted on the basis of an aid scheme;
- (31) 'energy infrastructure' means any physical equipment or facility which is located within the Union or linking the Union to one or more third countries and falling under the following categories:
- (a) concerning electricity:
- (i) infrastructure for transmission, as defined in Article 2(3) by Directive 2009/72/EC ⁽³⁰⁾;
 - (ii) infrastructure for distribution, as defined in Article 2(5) by Directive 2009/72/EC ⁽³⁰⁾;
 - (iii) electricity storage, defined as 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;
 - (iv) any equipment or installation essential for the systems defined in points (i) to (iii) to operate safely, securely and efficiently, including protection, monitoring and control systems at all voltage levels and substations; and
 - (v) smart grids, defined as any equipment, line, cable or installation, both at transmission and low 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;
- (b) concerning gas:
- (i) transmission and distribution pipelines for the transport of natural gas and bio gas that form part of a network, excluding high-pressure pipelines used for upstream distribution of natural gas;
 - (ii) underground storage facilities connected to the high-pressure gas pipelines mentioned in point (i);

⁽²⁹⁾ 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).

⁽³⁰⁾ Directive 2009/72/EC of 13 July 2009 concerning common rules for internal market in electricity (OJ L 211, 14.8.2009, p. 55).

- (iii) reception, storage and regasification or decompression facilities for liquefied natural gas ('LNG') or compressed natural gas ('CNG'); and
 - (iv) any equipment or installation essential for the system to operate safely, securely and efficiently or to enable bi- directional capacity, including compressor stations;
- (c) concerning oil:
- (i) pipelines used to transport crude oil;
 - (ii) pumping stations and storage facilities necessary for the operation of crude oil pipelines; and
 - (iii) 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;
- (d) concerning CO₂: networks of pipelines, including associated booster stations, for the transport of CO₂ to storage sites, with the aim to inject the CO₂ in suitable underground geological formations for permanent storage;
- (32) 'funding gap' means 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);
- (33) 'Carbon Capture and Storage' or 'CCS' means a set of technologies that captures the carbon dioxide (CO₂) emitted from industrial plants based on fossil fuels or biomass, including power plants, transports it to a suitable storage site and injects the CO₂ in suitable underground geological formations for the purpose of permanent storage of CO₂;
- (34) '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 which the Union institutions recognise as performing an essential role in the creation of a single market in electricity, for example ENTSO-E;
- (35) 'generator' means an undertaking which produces electrical power for commercial purposes;
- (36) 'generation adequacy measure' means a mechanism which has the aim of ensuring that certain generation adequacy levels are met at national level;
- (37) 'balancing responsibility' means responsibility for deviations between generation, consumption and commercial transactions of a BRP within a given imbalance settlement period;
- (38) 'standard balancing responsibilities' mean non-discriminatory balancing responsibilities across technologies which do not exempt any generator from those responsibilities;
- (39) 'balance responsible party (BRP)' means a market participant or its chosen representative responsible for its imbalances.
- (40) 'imbalances' means deviations between generation, consumption and commercial transactions of a BRP within a given imbalance settlement period.
- (41) 'imbalance Settlement' means a financial settlement mechanism aiming at recovering the costs of balancing applicable to imbalances of BRPs.
- (42) 'imbalance Settlement Period' means time units used for computing BRPs' imbalances.

- (43) 'competitive bidding process' means a non-discriminatory bidding process that provides for the participation of a sufficient number of undertakings and where the aid is granted on the basis of either the initial bid submitted by the bidder or a clearing price. In addition, the budget or volume related to the bidding process is a binding constraint leading to a situation where not all bidders can receive aid;
- (44) 'start of works' means either the start of construction works on the investment or the first firm commitment to order equipment or other commitment that makes the investment irreversible, whichever is the first in time. Buying of land and preparatory works such as obtaining permits and conducting preliminary feasibility studies are not considered as start of works. For take-overs, 'start of works' means the moment of acquiring the assets directly linked to the acquired establishment.
- (45) 'demonstration project' means a project demonstrating a technology as a first of its kind in the Union and representing a significant innovation that goes well beyond the state of the art.
- (46) 'assisted areas' means areas designated in an approved regional aid map for the period 1 July 2014 to 31 December 2020 in application of Articles 107(3)(a) and (c) of the Treaty;
- (47) 'regional aid map' means the list of areas designated by a Member State in accordance with the conditions laid down in the Guidelines on regional State aid for 2014-2020 ⁽³¹⁾;

2. NOTIFIABLE ENVIRONMENTAL AND ENERGY AID

(20) Individual aid granted on the basis of an aid scheme remains subject to the notification obligation pursuant to Article 108(3) of the Treaty, if the aid exceeds the following notification thresholds ⁽³²⁾ and is not granted on the basis of a competitive bidding process:

- (a) investment aid: where the aid amount exceeds EUR 15 million for one undertaking;
- (b) operating aid for the production of renewable electricity and/or combined production of renewable heat: where the aid is granted to renewable electricity installations at sites where the resulting renewable electricity generation capacity per site exceeds 250 megawatts (MW);
- (c) operating aid for the production of biofuel: where the aid is granted to a biofuel production installation at sites where the resulting production exceeds 150 000 tonnes (t) per year;
- (d) operating aid for cogeneration: where aid is granted to cogeneration installation with the resulting cogeneration electricity capacity exceeding 300 MW; Aid for the production of heat from cogeneration will be assessed in the context of notification based on electricity capacity;
- (e) aid for energy infrastructure: where the aid amount exceeds EUR 50 million for one undertaking, per investment project;
- (f) aid for Carbon Capture and Storage: where the aid amount exceeds EUR 50 million per investment project;
- (g) aid in the form of a generation adequacy measure: where the aid amount exceeds EUR 15 million per project per undertaking.

(21) Tax exemptions, reductions from environmental taxes and exemptions from the financing of energy from renewable sources falling under Section 3.7 will not be subject to the conditions for individually notified aid. However, aid granted in the form of fiscal aid not covered by Section 3.7 of these Guidelines will be subject to an individual assessment if the thresholds in that Section are exceeded. This also applies irrespective of whether the individual beneficiary benefits at the same time from a tax exemption or reduction falling under Section 3.7.

⁽³¹⁾ OJ C 209, 23.7.2013, p. 1.

⁽³²⁾ For the calculation of the capacity limit, the total unit capacity which is eligible for aid has to be taken into account for each project.

(22) These Guidelines provide the compatibility criteria for aid schemes and individual aid for environmental protection and energy objectives which are subject to the notification obligation pursuant to Article 108(3) of the Treaty.

3. COMPATIBILITY ASSESSMENT UNDER ARTICLE 107(3)C OF THE TREATY

(23) State aid for environmental protection and energy objectives will be considered compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty if, on the basis of the common assessment principles set out in this Chapter, it leads to an increased contribution to the Union environmental or energy objectives without adversely affecting trading conditions to an extent contrary to the common interest. The specific handicaps of assisted areas will be taken into account.

(24) This Chapter clarifies how the Commission will apply the common assessment principles set out in Section 3.1 when assessing aid measures falling within the scope of these Guidelines and, where applicable, lays down specific conditions for individual aid (either provided on the basis of a scheme or ad hoc).

(25) Section 3.2 sets out the general compatibility conditions applicable to all aid measures falling within the scope of these Guidelines, unless the more specific sections of Chapter 3 specify or amend these general compatibility conditions. Accordingly, Section 3.2 applies in particular to the following measures which are not part of the more specific sections of Chapter 3:

- (a) aid for environmental studies;
- (b) aid for the remediation of contaminated sites;
- (c) aid for undertakings going beyond Union standards or increasing environmental protection in the absence of Union standards;
- (d) aid for the early adaptation to future Union standards.

3.1. Common Assessment Principles

(26) 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.

(27) The Communication on State aid modernisation of 8 May 2012⁽³³⁾ called for the identification and definition of common principles applicable to the assessment of compatibility of all aid measures carried out by the Commission. For that purpose, the Commission will consider a State aid measure compatible with the internal market only if it satisfies each of the following criteria:

- (a) contribution to a well-defined objective of common interest: a State aid measure aims at an objective of common interest in accordance with Article 107(3) of the Treaty; (Section 3.2.1);
- (b) need for State intervention: the State aid measure is targeted towards a situation where aid can bring about a material improvement that the market alone cannot deliver, for example by remedying a well-defined market failure; (Section 3.2.2);
- (c) appropriateness of the aid measure: the proposed aid measure is an appropriate policy instrument to address the objective of common interest; (Section 3.2.3);
- (d) incentive effect: the aid changes the behaviour of the undertaking(s) concerned in such a way that it engages in additional activity which it would not carry out without the aid or which it would carry out in a restricted or different manner; (Section 3.2.4);
- (e) proportionality of the aid (aid kept to the minimum): the aid amount is limited to the minimum needed to incentivise the additional investment or activity in the area concerned; (Section 3.2.5);

⁽³³⁾ COM(2012)0209 final of 8.5.2012.

- (f) avoidance of undue negative effects on competition and trade between Member States: the negative effects of aid are sufficiently limited, so that the overall balance of the measure is positive; (Section 3.2.6);
- (g) transparency of aid: Member States, the Commission, economic operators, and the public, have easy access to all relevant acts and to pertinent information about the aid awarded thereunder; (Section 3.2.7).

(28) Certain categories of schemes may further be made subject to a requirement of *ex post* evaluation as described in Chapter 4. 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.

(29) 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 Union law, the aid cannot be declared compatible with the internal market⁽³⁴⁾. For example, in the field of energy, any levy that has the aim of financing a State aid measure needs to comply in particular with Articles 30 and 110 of the Treaty⁽³⁵⁾.

3.2. General compatibility provisions

3.2.1. Contribution to an objective of common interest

3.2.1.1. General conditions

(30) The general objective of environmental aid is to increase the level of environmental protection compared to the level that would be achieved in the absence of the aid. The Europe 2020 strategy in particular set targets and objectives for sustainable growth to support the shift towards a resource-efficient, competitive low-carbon economy. A low carbon economy with a significant share of variable energy from renewable sources requires an adjustment of the energy system and in particular considerable investments in energy networks⁽³⁶⁾. The primary objective of aid in the energy sector is to ensure a competitive, sustainable and secure energy system in a well-functioning Union energy market⁽³⁷⁾.

(31) Member States intending to grant environmental or energy aid will have to define precisely the objective pursued and explain what is the expected contribution of the measure towards this objective. When introducing a measure co-financed by the European Structural and Investments Funds, Member States may rely on the reasoning in the relevant Operational Programmes in indicating the environmental or energy objectives pursued.

(32) 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.

3.2.1.2. Additional conditions for individually notifiable aid

(33) To demonstrate the contribution of an individually notifiable aid towards an increased level of environmental protection, the Member State may use, as much as possible in quantifiable terms, a variety of indicators, in particular the ones mentioned below:

- (a) *abatement technologies*: the amount of greenhouse gases or pollutants that are permanently not emitted in the atmosphere (resulting in reduced input from fossil fuels);

⁽³⁴⁾ See 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. See also, in the field of energy, Joined Cases C-128/03 and C-129/03 *AEM and AEM Torino* [2005] ECR I-2861, paragraphs 38 to 51.

⁽³⁵⁾ Case C-206/06 *Essent*, [2008] ECR I-5497, paragraphs 40 to 59. For the application of Articles 30 and 110 of the Treaty to tradable certificates schemes, see Commission Decision C(2009)7085 of 17.9.2009, State aid N 437/2009 — Aid scheme for the promotion of cogeneration in Romania (OJ C 31, 9.2.2010, p. 8) recitals 63 to 65.

⁽³⁶⁾ COM(2011)112 final 'A roadmap for moving to a competitive low carbon economy'; COM(2011) 571 final 'Roadmap to a Resource Efficient Europe'.

⁽³⁷⁾ COM(2010)639 final 'Energy 2020 Communication'

- (b) *existing Union standards*: the absolute amount and relative size of the increase in the level of environmental protection over and above the standard, that is to say a reduction of pollution that would not be achieved by the standard in the absence of any State aid;
- (c) *future Union standards*: the increase in the rate at which future standards are implemented, that is to say a reduction of pollution starting at an earlier date.

3.2.2. Need for State intervention

3.2.2.1. General conditions

(34) 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 failures⁽³⁸⁾, State intervention may improve the efficient functioning of markets. Indeed State aid measures can under certain conditions, correct market failures and thereby contribute towards achieving the common objective to the extent that the market on its own fails to deliver an efficient outcome. In order to assess whether State aid is effective to achieve the objective, it is necessary first to diagnose and define the problem that needs to be addressed. State aid should be targeted towards situations where aid can bring a material improvement that the market cannot alone deliver.

(35) To establish Guidelines ensuring that aid measures achieve the common objective, Member States should identify the market failures hampering an increased level of environmental protection or a well-functioning secure, affordable and sustainable internal energy market. Market failures related to environmental and energy objectives may be different or similar, but can prevent the optimal outcome and can lead to an inefficient outcome for the following reasons:

- (a) **Negative externalities**: they are most common for environmental aid measures and arise when pollution is not adequately priced, that is to say, the firm in question does not face the full cost of pollution. In this case, 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.
- (b) **Positive externalities**: the fact that part of the benefit from an investment will accrue to market participants other than the investor, will lead undertakings to underinvest. Positive externalities may occur for instance in case of investments in eco-innovation⁽³⁹⁾, system stability, new and innovative renewable technologies and innovative demand-response measures or in case of energy infrastructures or generation adequacy measures that benefit many Member States (or a wider number of consumers).
- (c) **Asymmetric information**: this typically arises in markets where there is a discrepancy between the information available to one side of the market and the information available to the other side of the market. This could for instance occur where external financial investors have a lack of information about the likely returns and risks of the project. It may also come up in cross-border infrastructure collaboration where one party has an information disadvantage compared to the other party. Although risk or uncertainty do not in themselves lead to the presence of a market failure, the problem of asymmetric information is linked to the degree of such risk and uncertainty. Both tend to be higher for environmental investments with a typically longer amortisation period. It might reinforce a focus on a short-term horizon that could be aggravated by financing conditions for such investments in particular for SMEs.

⁽³⁸⁾ The term 'market failure' refers to situations in which, markets, if left to their own devices, are unlikely to produce efficient outcomes.

⁽³⁹⁾ Typical examples of positive externalities are actions to further improve nature protection or biodiversity, to provide ecosystem services or externalities as a result of general training.

(d) **Coordination failures:** they may prevent the development of a project or its effective design due to diverging interests and incentives among investors, so called split incentives, the costs of contracting, uncertainty about the collaborative outcome and network effects, for example e.g. uninterrupted supply of electricity. They can arise for example in the relationship between a building owner and a tenant in respect of applying energy efficient solutions. Coordination problems may be further exacerbated by information problems, in particular those related to asymmetric information. Coordination problems may also stem from the need to reach a certain critical mass before it is commercially attractive to start a project which may be a particularly relevant aspect in (cross-border) infrastructure projects.

(36) The mere existence of market failures in a certain context is not sufficient to justify State intervention. In particular, other policies and measures may already be in place to address some of the market failures identified. Examples include sectorial regulation, mandatory pollution standards, pricing mechanisms such as the Union Emissions Trading System ('ETS') and carbon taxes. Additional measures including State aid may only be directed at the residual market failure, that is to say 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. Therefore, the case for the necessity of State aid is weaker if it counteracts other policies targeted at the same market failure.

(37) The Commission will consider that aid is needed if the Member State demonstrates that the aid effectively targets a (residual) market failure which is not addressed.

3.2.2.2. Additional conditions for individually notifiable aid

(38) Whereas market failures may exist in general and aid measures may be, in principle, well-designed to target an efficient market outcome, not all undertakings concerned may be confronted with these market failures to the same extent. Consequently, for notifiable individual aid, the Commission will assess the specific need for aid in the case at hand. It is for the Member State to demonstrate that there is a market failure which is still not addressed with regards to the specific activity supported by the aid and whether the aid is effectively targeted to address that market failure.

(39) Depending on the specific market failure addressed, the Commission will take into account the following factors:

- (a) whether other policy measures already sufficiently address the market failure, in particular the existence of environmental or other Union standards, the Union ETS or environmental taxes;
- (b) whether State intervention is needed, taking into account, the cost of implementation of national standards for the aid beneficiary in the absence of aid compared to the costs, or absence thereof, of implementation of those standards for the main competitors of the aid beneficiary;
- (c) in the case of coordination failures, the number of undertakings required to collaborate, diverging interests between collaborating parties and practical problems to coordinate collaboration, such as linguistic issues, sensitivity of information and non-harmonised standards.

3.2.3. *Appropriateness of the aid*

(40) The proposed aid measure must be an appropriate instrument to address the policy objective concerned. An aid measure will not be considered compatible with the internal market if the same positive contribution to the common objective is achievable through other less distortive policy instruments or other less distortive types of aid instruments.

3.2.3.1. Appropriateness among alternative policy instruments

(41) State aid is not the only policy instrument available to Member States to promote increased levels of environmental protection or to achieve a well-functioning secure, affordable and sustainable European energy market. It is important to keep in mind that there may be other, better placed instruments to achieve those objectives. Regulation and market-based instruments are the most important tools to achieve environmental and energy objectives. Soft instruments, such as voluntary eco-labels, and the diffusion of environmentally friendly technologies may also play an important role in achieving a higher level of environmental protection.

(42) Different measures to remedy the same market failure may counteract each other. This is 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.

(43) Different measures to remedy different market failures may also counteract each other. A measure addressing a generation adequacy problem needs to be balanced with the environmental objective of phasing out environmentally or economically harmful subsidies, including for fossil fuels. Similarly, a measure to reduce greenhouse gas emissions can increase the supply of variable power which might negatively affect generation adequacy concerns.

(44) Respect for the 'polluter pays principle' ('PPP') through environmental legislation ensures in principle that the market failure linked to negative externalities will be rectified. Therefore, State aid is not an appropriate instrument and cannot be granted insofar as the beneficiary of the aid could be held liable for the pollution under existing Union or national law⁽⁴⁰⁾.

3.2.3.2. Appropriateness among different aid instruments

(45) 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 that respect, the Member State is required to demonstrate why other potentially less distortive forms of aid such as repayable advances as compared to direct grants or tax credits as compared to tax reductions or forms of aid that are based on financial instruments such as 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.

(46) The choice of the aid instrument should be coherent 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. For aid schemes implementing the objectives and priorities of operational programmes, the financing instrument chosen in this programme is in principle presumed to be an appropriate instrument.

(47) For operating aid, the Member State must demonstrate that the aid is appropriate to achieve the objective of the scheme to which the aid is targeted. To demonstrate that the aid is appropriate, the Member State may calculate the aid amount *ex ante* as a fixed sum covering the expected additional costs over a given period, to incentivise undertakings to minimise their costs and develop their business in a more efficient manner over time⁽⁴¹⁾.

(48) For the purpose of demonstrating the appropriateness of schemes, the Member State can also rely on the results of past evaluations as described in Chapter 4.

3.2.4. Incentive effect

3.2.4.1. General conditions

(49) Environmental and energy aid can only be found compatible with the internal market if it has an incentive effect. An incentive effect occurs when the aid induces the beneficiary to change its behaviour to increase the level of environmental protection or to improve the functioning of a secure, affordable and sustainable energy market, a change in behaviour which it would not undertake without the aid. The aid must not subsidise the costs of an activity that an undertaking would anyhow incur and must not compensate for the normal business risk of an economic activity.

⁽⁴⁰⁾ In particular, the Commission will consider that aid for contaminated sites can be granted only when the polluter — i.e. the person liable under the law applicable in each Member State without prejudice to the Environmental Liability Directive (Directive 2004/35/EC) and other relevant Union rules in this matter — is not identified or cannot be held legally liable for financing the remediation in accordance with the 'polluter pays' principle.

⁽⁴¹⁾ 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, through a balanced sharing of unanticipated gains).

(50) The Commission considers that aid does not present an incentive effect for the beneficiary in all cases where work on the project had already started prior to the aid application by the beneficiary to the national authorities. In such cases, where the beneficiary starts implementing a project before applying for aid, any aid granted in respect of that project will not be considered compatible with the internal market.

(51) Member States must introduce and use an application form for aid. The application form includes at least the applicant's name and the size of the undertaking, a description of the project, including its location and start and end dates, the amount of aid needed to carry it out and the eligible costs. In the application form, beneficiaries must describe the situation without the aid, i.e., a situation that is referred to as the counterfactual scenario, or the alternative scenario or project. In addition, large undertakings must submit documentary evidence in support of the counterfactual scenario described in the application form.

(52) When receiving an application form, the granting authority must carry out a credibility check of the counterfactual scenario and confirm that the aid has the required incentive effect. A counterfactual scenario 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. It is not required to meet the conditions of paragraphs (50) and (51) where the aid is awarded on the basis of a competitive bidding process.

Incentive effect and adaptation to Union standards

(53) The Commission considers that aid granted to adapt to future Union standards has in principle an incentive effect, including when the standard has already been adopted but is not yet in force. However, in the latter case, aid has an incentive effect if it incentivises the realisation of the investment long before the standard enters into force. Aid granted for the adaptation to Union standards already adopted but not yet in force will be considered to have incentive effect if the investment is implemented and finalised at least one year before the Union standards enter into force.

(54) As a further exception to paragraph (53), an incentive effect may exist if aid is granted for:

- (a) the acquisition of new transport vehicles for road, railway, inland waterway and maritime transport complying with adopted Union standards, provided that the acquisition occurs before those standards enter into force and that, once mandatory, they do not apply to vehicles already purchased; or
- (b) retrofitting operations of existing transport vehicles for road, railway, inland waterway and maritime transport, provided that the Union standards were not yet in force at the date of entry into operation of those vehicles and that, once mandatory, they do not apply to those vehicles.

(55) The Commission considers that aid in support of investments that enable the beneficiary to take measures that go beyond the applicable Union standards contributes positively to the environmental or energy objective. In order not to discourage Member States from setting mandatory national standards which are more stringent than the corresponding Union standards, such positive contribution exists irrespective of the presence of mandatory national standards that are more stringent than the Union standard. This includes for instance measures to improve the water and air quality beyond mandatory Union standards. Such positive contribution also exists in the presence of a mandatory national standard adopted in the absence of Union standards.

Incentive effect and energy audits

(56) Under the Directive 2012/27/EU⁽⁴²⁾ ('the Energy Efficiency Directive' or 'the EED'), large enterprises have to carry out energy audits every four years. Therefore aid for energy audits for large enterprises can have an incentive effect only to the extent that the aid does not compensate an energy audit required by the EED. As the same obligation is not imposed on SMEs, State aid granted to SMEs for carrying out the energy audit can have an incentive effect.

(57) The previous paragraph is without prejudice to the assessment of the incentive effect of State aid for energy-efficiency measures prescribed by or carried out as a result of the energy audit or those resulting from other tools, such as energy management systems and environmental management systems.

⁽⁴²⁾ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1).

3.2.4.2. Additional conditions for individually notifiable aid

(58) For measures subject to individual notification, the Member States must fully demonstrate to the Commission the incentive effect of the aid. They need to provide clear evidence that the aid has an effective impact on the investment decision in a way that it changes the behaviour of the beneficiary leading the beneficiary to increase the level of environmental protection or leading to a better functioning of the Union 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 none of the Member States award aid to the beneficiary.

(59) The advantages of new investments or production methods are usually not limited to their direct environmental effects or effects on the energy market. Such advantages may in particular be production advantages⁽⁴³⁾ while the risks relate particularly to the uncertainty about whether the investment will be as productive as expected.

(60) The incentive effect is, in principle, to be identified through the counterfactual scenario analysis, comparing the levels of intended activity with aid and without aid. Essentially, that amounts to checking the profitability of the project in the absence of the aid, to assess whether it indeed falls short of the profit obtained by the company by implementing the alternative project.

(61) In that 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 ('NPV') of the project⁽⁴⁴⁾, the internal rate of return ('IRR')⁽⁴⁵⁾ or the average return on capital employed ('ROCE'). The profitability of the project is to be compared with normal rates of return applied by the company in other investment projects of a similar kind. Where those rates are not available, the profitability of the project is to be compared with the cost of capital of the company as a whole or with the rates of return commonly observed in the industry concerned.

(62) Where no specific counterfactual scenario is known, the incentive effect can be assumed when there is a funding gap, that is to say when the investment costs exceed the NPV of the expected operating profits of the investment on the basis of an *ex ante* business plan.

(63) The Member States are, in particular, invited to rely on contemporary, relevant and credible evidence including, for example 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.

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

(65) The Commission may find that there is an incentive effect in cases where an undertaking may have an incentive in carrying out 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.

⁽⁴³⁾ 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.

⁽⁴⁴⁾ 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), that is to say the normal rates of return applied by the undertaking concerned in other investment projects of a similar kind. When this benchmark is not available, the cost of capital of the company as a whole or rates of return commonly observed in the industry concerned may be used for this purpose.

⁽⁴⁵⁾ 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.

(66) Where an 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.

(67) For investments that bring undertakings above the minimum levels required by Union standards, the Commission can still find no incentive effect, in particular if such investments correspond to the minimum technical standards available in the market.

(68) If the aid does not change the behaviour of the beneficiary by stimulating additional activities, that aid does not have incentive effect in terms of promoting environmental behaviour in the Union or strengthening the functioning of the European energy market. Therefore, aid will not be approved in cases where it appears that the same activities would still be pursued without the aid.

3.2.5. *Proportionality of the aid*

3.2.5.1. General conditions

(69) Environmental and energy aid is considered to be proportionate if the aid amount per beneficiary is limited to the minimum needed to achieve the environmental protection or energy objective aimed for.

(70) As a general principle, aid will be considered to be limited to the minimum necessary if the aid corresponds to the net extra cost necessary to meet the objective, compared to the counterfactual scenario in the absence of aid. The net extra cost is determined by the difference between the economic benefits and costs (including the investment and operation) of the aided project and those of the alternative investment project which the company would carry out in the absence of aid, that is the counterfactual scenario.

(71) However, it might be difficult to fully take into account all economic benefits that a company will derive from an additional investment⁽⁴⁶⁾. Therefore, for measures, which are not subject to an individual assessment, a simplified method that would focus on calculating the extra investment costs, that is to say not taking into account the operating benefits and costs may be used. Measures which are not subject to an individual assessment will be deemed proportional if the aid amount does not exceed the maximum aid intensity, that is a given percentage of the eligible costs as defined in paragraphs (72) to (76). Those maximum aid intensities also serve as a cap to the aid given for notifiable measures.

Eligible costs

(72) The eligible costs for environmental aid are the extra investment costs in tangible and/or in intangible assets which are directly linked to the achievement of the common objective.

(73) The eligible costs are determined as follows:

- (a) where the costs of achieving the common interest objective can be identified in the total investment costs as a separate investment, for instance, because the green element is a readily identifiable 'add-on component' to a pre-existing facility, the costs of the separate investment constitute the eligible costs⁽⁴⁷⁾;
- (b) in all other cases, the eligible costs are the extra investment costs established by comparing the aided investment with the counterfactual situation in the absence of State aid. In principle, reference can be made to the cost of a technically comparable investment⁽⁴⁸⁾ that would credibly be realised without aid⁽⁴⁹⁾ and which does not achieve the common interest objective or that only attains that objective to a lesser degree.

⁽⁴⁶⁾ For instance, certain kinds of benefits such as the 'green image' enhanced by an environmental investment are not easy to measure.

⁽⁴⁷⁾ For measures related to remediation of contaminated sites, the eligible costs are equal to the cost of the remediation work less the increase in the value of the land (see Annex 2).

⁽⁴⁸⁾ 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).

⁽⁴⁹⁾ Such a reference investment must, from a business point of view, be a credible alternative to the investment under assessment.

(74) Annex 2 contains a list of the relevant counterfactual scenarios or eligible cost calculations reflecting the counterfactual scenario that should be used in similar cases. The Commission may accept alternative counterfactual situations if duly justified by the Member State.

(75) For measures supporting integrated projects such as integrated energy-efficiency measures, or biogas projects, the counterfactual scenario can be difficult to establish. Where a counterfactual scenario cannot credibly be established, the Commission is amenable to consider the total costs of a project as an alternative, which may imply lower aid intensities to reflect the different eligible cost calculation.

(76) The rules set out in paragraphs (73) to (75) are applicable to the construction of the production plants in energy efficient district heating or cooling projects. However, the funding gap approach will be applied for aid to the construction of the network, similar to the assessment of energy infrastructure.

Maximum aid intensities

(77) In order to ensure predictability and a level playing field, the Commission applies maximum aid intensities for aid, set out in Annex 1. These aid intensities reflect the need for State intervention determined, on the one hand, by the relevance of the market failure and, on the other hand, by the expected level of distortion of competition and trade.

(78) Higher aid intensities may be allowed for some types of aid or for investments located in an assisted area, but the aid intensity can never exceed 100 % of eligible costs. Higher aid intensities may be allowed as follows:

- (a) the aid intensity may be increased by 15 percentage points for energy and environmental investments located in assisted areas fulfilling the conditions of Article 107(3)(a) of the Treaty and by 5 percentage points for energy and environmental investments located in assisted areas fulfilling the conditions of Article 107(3)(c) of the Treaty. The Commission deems those increases to be justified in view of the various handicaps faced by these areas that might be an obstacle to environmental or energy investments;
- (b) the aid intensity can be increased by 10 percentage points for medium sized enterprises and 20 percentage points for small enterprises. With regard to small and medium-sized enterprises which may be faced, on the one hand, with relatively higher costs to achieve environmental or energy objectives compared to the size of their activity and, on the other hand, with capital market imperfections which force them to bear such costs, higher aid intensities may also be warranted, as the risk of serious distortions of competition and trade is reduced when the beneficiary is a small or medium-sized enterprise;
- (c) higher aid intensities may be justified under certain conditions in case of eco-innovation which can address a double market failure linked to the higher risks of innovation, coupled with the environmental aspect of the project. That applies in particular to resource efficiency measures. The aid intensity may be increased by 10 percentage points, provided that following cumulative conditions are fulfilled:
 - (i) the eco-innovation asset or project must be new or substantially improved compared to the state of the art in its industry in the Union⁽⁵⁰⁾;

⁽⁵⁰⁾ The novelty could, for example, be demonstrated by the Member States on the basis of a precise description of the innovation and of market conditions for its introduction or diffusion, comparing it with state-of-the-art processes or organisational techniques generally used by other undertakings in the same industry.

- (ii) the expected environmental benefit must be significantly higher than the improvement resulting from the general evolution of the state of the art in comparable activities⁽⁵¹⁾; and
- (iii) the innovative character of the assets or projects involves a clear degree of risk, in technological, market or financial terms, which is higher than the risk generally associated with comparable non-innovative assets or projects⁽⁵²⁾.

(79) Therefore, the Commission will consider aid to be compatible with the internal market if the eligible costs are correctly calculated and the maximum aid intensities set out in Annex 1 are respected.

(80) Where aid to the beneficiary is granted in a competitive bidding process on the basis of clear, transparent and non-discriminatory criteria, the aid amount may reach 100 % of the eligible costs⁽⁵³⁾. Such a bidding process must be non-discriminatory and provide for the participation of a sufficient number of undertakings. In addition, the budget related to the bidding process must be a binding constraint in the sense that not all participants can receive aid. Finally, the aid must be granted on the basis of the initial bid submitted by the bidder, therefore excluding subsequent negotiations.

3.2.5.2. Cumulation of aid

(81) Aid may be awarded concurrently under several aid schemes or cumulated with *ad hoc* aid, provided that the total amount of State aid for an activity or project does not exceed the limits fixed by the aid ceilings laid down in these Guidelines. Union funding centrally managed by the Commission that is not directly or indirectly under the control of the Member State⁽⁵⁴⁾, does not constitute State aid. Where such Union funding is combined with State aid, only the latter is considered for determining whether notification thresholds and maximum aid intensities are respected, provided that the total amount of public funding granted in relation to the same eligible costs must however not exceed the maximum funding rate(s) laid down in the applicable rules of Union law.

(82) Aid is not to be cumulated with *de minimis* aid in respect of the same eligible costs if such cumulation would result in an aid intensity exceeding that laid down in these Guidelines.

3.2.5.3. Additional conditions for individually notifiable investment and operating aid

(83) For individual aid, compliance with the maximum aid intensities set out in this section and in Annex 1, is not sufficient to ensure proportionality. These maximum aid intensities are used as a cap for individual aid⁽⁵⁵⁾.

(84) 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 scenario in the absence of aid. All relevant costs and benefits must be taken into account over the lifetime of the project.

(85) If no specific alternative project can be identified as a counterfactual scenario, the Commission will verify whether the aid amount exceeds the minimum necessary to make the aided project sufficiently profitable, for instance whether it increases its IRR beyond the normal rates of return applied by the undertaking concerned in other investment projects of a similar kind. When that benchmark is not available, the cost of capital of the company as a whole or rates of return commonly observed in the industry concerned may be used for that purpose.

⁽⁵¹⁾ If quantitative parameters can be used to compare eco-innovative activities with standard, non-innovative activities, 'significantly higher' means that the marginal improvement expected from eco-innovative activities, in terms of reduced environmental risk or pollution, or improved efficiency in energy or resources, should be at least twice as high as the marginal improvement expected from the general evolution of comparable non-innovative activities.

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

⁽⁵²⁾ This risk could be demonstrated by the Member State for instance in terms of: costs in relation to the undertaking's turnover, time required for the development, expected gains from the Eco innovation in comparison with the costs, and probability of failure.

⁽⁵³⁾ Under such circumstances, it can be assumed that the respective bids reflect all possible benefits that might flow from the additional investment.

⁽⁵⁴⁾ For instance support granted on the basis of Commission Decision 2010/670/EU (OJ L 290, 6.11.2010, p. 39) (NER300 funding) and Regulation (EC) No 2010/1233/EU amending Regulation (EC) No 2009/663/EC (OJ L 346, 30.12.2010, p. 5) (EEPR funding), Horizon 2020 or COSME.

⁽⁵⁵⁾ Where *ad hoc* aid is granted, the cap is determined by comparison to typical industry data equivalent to a cap for individually notifiable aid granted on the basis of a scheme.

(86) The Member State should provide evidence that the aid amount is kept to the minimum. Calculations used for the analysis of the incentive effect can also be used to assess whether the aid is proportionate. The Member State must demonstrate the proportionality on the basis of the documentation referred to in paragraph (63).

(87) For operating aid granted by way of a competitive bidding process, the proportionality of individual aid is presumed to be met if the general conditions are fulfilled.

3.2.6. *Avoidance of undue negative effects on competition and trade*

3.2.6.1. General considerations

(88) For the aid to be compatible with the internal market, 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.

(89) The Commission identifies two main potential distortions caused by aid, namely product market distortions and location effects. Both types may lead to allocative inefficiencies which undermine the economic performance of the internal market and to distributional concerns which affect the distribution of economic activity across regions.

(90) Aid for environmental purposes will by its very nature, tend to favour environmentally friendly products and technologies at the expense of other, more polluting ones and that effect of the aid will, in principle, not be viewed as an undue distortion of competition, since it is inherently linked to the very objective of the aid, that is to say making the economy greener. When assessing the potential negative effects of environmental aid, the Commission will take into account the overall environmental effect of the measure in relation to its negative impact on the market position, and thus on the profits, of non-aided firms. In doing so, the Commission will consider in particular the distortive effects on competitors that likewise operate on an environmentally friendly basis, even without aid. Likewise, the lower the expected environmental effect of the measure in question, the more important the verification of its effect on competitors' market shares and profits in the market.

(91) One potentially harmful effect of State aid for environmental and energy objectives is that it prevents the market mechanism from delivering efficient outcomes by rewarding the most efficient and innovative producers and putting pressure on the least inefficient to improve, restructure or exit the market. That might lead to a situation where, due to the aid granted to some firms, more efficient or innovative competitors, for example competitors with a different, possibly even cleaner technology, that would otherwise be able to enter and expand are unable to do so. In the long run, interfering with the competitive entry and exit process may stifle innovation and slow down industry-wide productivity improvements.

(92) Aid may also have distortive effects by strengthening or maintaining substantial market power of the beneficiary. Even where aid does not strengthen substantial market power directly, it may do so indirectly, by discouraging the expansion of existing competitors or inducing their exit or discouraging the entry of new competitors.

(93) Apart from distortions on the product markets, aid may also give rise to effects on trade and location choice. Those distortions can arise across Member States, either when firms compete across borders or consider different locations for investment. Aid aimed at preserving economic activity in one region or attracting it away from other regions within the internal market may not lead directly to a distortion in the product market, but it may displace activities or investments from one region into another without any net environmental impact.

Manifest negative effects

(94) In principle, an aid measure and the context in which it is applied need to be analysed to identify the extent to which it can be deemed distortive. However, there are situations where the negative effects manifestly outweigh any positive effects, meaning that the aid cannot be found compatible with the internal market.

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

(96) Likewise, aid for environmental and energy objectives that merely leads to a change in location of the economic activity without improving the existing level of environmental protection in the Member States will not be considered compatible with the internal market.

3.2.6.2. General conditions

(97) In assessing the negative effects of the aid measure, the Commission focuses on the distortions resulting from the foreseeable impact of the environmental and energy aid has on competition between undertakings in the product markets affected and the location of economic activity. If State aid measures are well targeted to the market failure they aim to address, the risk that the aid will unduly distort competition is more limited.

(98) If the aid is proportionate and limited to the extra investment costs, the negative impact of the aid is in principle softened. However, even where aid is necessary and proportionate, aid may result in a change in behaviour of the beneficiaries which distorts competition. A profit seeking undertaking will normally only increase the level of environmental protection beyond mandatory requirements if it considers that this will result, at least marginally in some sort of advantage for the undertaking.

(99) In order to keep the distortions of competition and trade to a minimum, the Commission will place great emphasis on the selection process. Where possible, the selection process should be conducted in a non-discriminatory, transparent and open manner, without unnecessarily excluding companies that may compete with projects to address the same environmental or energy objective. The selection process should lead to the selection of beneficiaries that can address the environmental or energy objectives using the least amount of aid or in the most cost-effective way.

(100) The Commission will in particular assess the negative effects of the aid by considering the following elements:

- (a) *reduction in or compensation for production unit costs*: if the new equipment⁽⁵⁶⁾ 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 potential of the aid for distorting competition;
- (b) *new product*: if the beneficiaries obtain a new or a higher quality product, it is likely that they will increase their sales and possibly gain a 'first mover' advantage.

3.2.6.3. Additional conditions for individually notifiable aid

(101) The Member State must ensure that the negative effects as described in Section 3.2.6.1 are limited. In addition to the elements specified in Section 3.1.6.2, the Commission will take into account and assess whether the individual aid leads to:

- (a) supporting inefficient production, thereby impeding productivity growth in the sector;
- (b) distorting dynamic incentives;
- (c) creating or enhancing market power or exclusionary practices;
- (d) artificially altering trade flows or the location of production.

⁽⁵⁶⁾ The calculation of extra investment costs may not fully capture all benefits, since the operating 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.

(102) The Commission may consider the planned introduction of energy and environmental support schemes, other than the one notified, which directly or indirectly benefit the beneficiary with a view to assessing the cumulative impact of the aid.

(103) The Commission will also assess whether the aid results in some territories benefiting from more favourable production conditions, notably because of comparatively lower production costs as a result of the aid or because of higher production standards achieved through the aid. This may result in companies staying in or re-locating to the aided territories, or to displacement of trade flows towards the aided area. In its analysis of notifiable individual aid, the Commission will accordingly take into account any evidence that the aid beneficiary has considered alternative locations.

3.2.7. *Transparency*

(104) Member States must ensure the publication of the following information on a comprehensive State aid website, at national or regional level: the full text of the approved aid scheme or the individual aid granting decision and its implementing provisions, or a link to it, the identity of the granting authority/(ies), the identity of the individual beneficiaries, the form and amount of aid granted to each beneficiary, the date of granting, the type of undertaking (SME/large company), the region in which the beneficiary is located (at NUTS level II) and the principal economic sector in which the beneficiary has its activities (at NACE group level).

(105) For schemes in the form of tax advantage and aid in the form of reductions in the funding of support for energy from renewable sources, the information on individual aid amounts can be provided in the following ranges (in EUR million): [0,5-1]; [1-2]; [2-5]; [5-10]; [10-30]; [30 and more].

(106) Such information must be published after the decision to grant the aid has been taken, must be kept for at least 10 years and must be available to the general public without restrictions⁽⁵⁷⁾. Member States will not be required to provide such information before 1 July 2016. The requirement to publish information can be waived with respect to individual aid awards below EUR 500 000.

3.3. **Aid to energy from renewable sources**

3.3.1. *General conditions for investment and operating aid to energy from renewable sources*

(107) The Union set ambitious climate change and energy sustainability targets in particular as part of its EU 2020 strategy. Several Union legislative acts already support the achievement of those targets, such as the Union ETS, Directive 2009/28/EC⁽⁵⁸⁾ ('the Renewable Energy Directive' or 'RED') and the Directive 2009/30/EC⁽⁵⁹⁾ ('the Fuel Quality Directive'). However, their implementation may not always result in the most efficient market outcome and under certain conditions State aid can be an appropriate instrument to contribute to the achievement of the Union objectives and related national targets.

(108) These Guidelines apply to the period up to 2020. However, they should prepare the ground for achieving the objectives set in the 2030 Framework. Notably, it is expected that in the period between 2020 and 2030 established renewable energy sources will become grid-competitive, implying that subsidies and exemptions from balancing responsibilities should be phased out in a degressive way. These Guidelines are consistent with that objective and will ensure the transition to a cost-effective delivery through market-based mechanisms.

⁽⁵⁷⁾ This information shall be published within 6 months from the date of granting (or, for aid in the form of tax advantage, within 1 year from the date of the tax declaration). In case of unlawful aid, Member States will be required to ensure the publication of this information *ex post*, at least within 6 months from the date of the Commission decision. The information shall be available in a format which allows data to be searched, extracted, and easily published on the internet, for instance in CSV or XML format.

⁽⁵⁸⁾ Directive 2009/28/EC of the European Parliament and the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16).

⁽⁵⁹⁾ Directive 2009/30/EC of the European Parliament and the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EC (OJ L 140, 5.6.2009, p. 88).

(109) Market instruments, such as auctioning or competitive bidding process open to all generators producing electricity from renewable energy sources competing on equal footing at EEA level, should normally ensure that subsidies are reduced to a minimum in view of their complete phasing out.

(110) However, given the different stage of technological development of renewable energy technologies, these Guidelines allow technology specific tenders to be carried out by Member States, on the basis of the longer-term potential of a given new and innovative technology, the need to achieve diversification; network constraints and grid stability and system (integration) costs.

(111) Specific exceptions are included for installations of a certain size, for which it cannot be presumed that a bidding process is appropriate, or for installations at demonstration phase. The inclusion of such installations is optional.

(112) In view of the overcapacity in the food-based biofuel market, the Commission will consider investment aid in new and existing capacity for food-based biofuel not to be justified. However, investment aid to convert food-based biofuel plants into advanced biofuel plants is allowed to cover the costs of such conversion. Other than in this particular case, investment aid to biofuels can only be granted in favour of advanced biofuels.

(113) Whilst investment aid to support food-based biofuel will cease from the date of application of these Guidelines, operating aid to food-based biofuels can only be granted until 2020. Therefore, such aid can only be granted to plants that started operation before 31 December 2013 until the plant is fully depreciated but in any event no later than 2020.

(114) In addition, the Commission will consider that the aid does not increase the level of environmental protection and can therefore not be found compatible with the internal market if the aid is granted for biofuels which are subject to a supply or blending obligation⁽⁶⁰⁾, unless a Member State can demonstrate that the aid is limited to sustainable biofuels that are too expensive to come on the market with a supply or blending obligation only.

(115) In particular while the EU ETS and CO₂ taxes internalise the costs of greenhouse gas ('GHG') emissions, they may not, yet, fully internalise those costs. State aid can therefore contribute to the achievement of the related, but distinct, Union objectives for renewable energy. Unless it has evidence on the contrary, the Commission therefore presumes that a residual market failure remains, which can be addressed through aid for renewable energy.

(116) In order to allow Member States to achieve their targets in line with the EU 2020 objectives, the Commission presumes the appropriateness of aid and the limited distortive effects of the aid provided all other conditions are met.

(117) With regard to aid for the production of hydropower, its impact can be twofold: on the one hand, such aid has a positive impact in terms of low GHG emissions, on the other hand, it might also have a negative impact on water systems and biodiversity. Therefore, when granting aid for the production of hydropower, Member States must respect Directive 2000/60/EC⁽⁶¹⁾ and in particular Article 4(7) thereof, which lays down criteria in relation to allowing new modifications of bodies of water.

(118) A core principle of Union legislation on waste is the waste hierarchy which prioritises the ways in which waste should be treated⁽⁶²⁾. State aid for energy from renewable sources using waste, including waste heat, as input fuel can make a positive contribution to environmental protection, provided that it does not circumvent that principle.

⁽⁶⁰⁾ An obligation to supply biofuels on the market needs to be in force, including a penalty regime.

⁽⁶¹⁾ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).

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

(119) Aid to energy from renewable sources can be granted as investment or operating aid. For investment aid schemes and individually notified investment aid, the conditions set out in Section 3.2 apply.

(120) For operating aid schemes, the general provision of Section 3.2 will be applied as modified by the specific provisions as set in this Section. For individually notified operating aid, the conditions set out in Section 3.2 apply, where relevant taking into account the modifications made by this Section for operating aid schemes.

(121) The Commission will authorise aid schemes for a maximum period of 10 years. If maintained, such measure should be re-notified after such period. Concerning food-based biofuel, existing and newly notified schemes should be limited to 2020.

(122) The Union set an overall Union target for the share of renewable energy sources in final energy consumption and translated this target into mandatory national targets. The Renewable Energy Directive includes cooperation mechanisms⁽⁶³⁾ to facilitate cross border support for achieving national targets. Operating aid schemes should in principle be open to other EEA countries and Contracting Parties of the Energy Community to limit the overall distortive effects. It minimises costs for Member States whose sole aim is to achieve the national renewables target laid down in Union legislation. Member States however may want to have a cooperation mechanism in place before allowing cross border support as otherwise, production from installations in other countries will not count towards their national target under the RED⁽⁶⁴⁾. The Commission will consider positively schemes that are open to other EEA or Energy Community countries.

(123) Aid to electricity from renewable energy sources should in principle contribute to integrating renewable electricity in the market. However, for certain small types of installations, this may not be feasible or appropriate.

3.3.2. *Operating aid granted to energy from renewable sources*

3.3.2.1. *Aid for electricity from renewable energy sources*

(124) In order to incentivise the market integration of electricity from renewable sources, it is important that beneficiaries sell their electricity directly in the market and are subject to market obligations. The following cumulative conditions apply from 1 January 2016 to all new aid schemes and measures:

- (a) aid is granted as a premium in addition to the market price (premium) whereby the generators sell its electricity directly in the market;
- (b) beneficiaries⁽⁶⁵⁾ are subject to standard balancing responsibilities, unless no liquid intra-day markets exist; and
- (c) measures are put in place to ensure that generators have no incentive to generate electricity under negative prices.

(125) The conditions established in paragraph (124) do not apply to installations with an installed electricity capacity of less than 500 kW or demonstration projects, except for electricity from wind energy where an installed electricity capacity of 3 MW or 3 generation units applies.

⁽⁶³⁾ Cooperation mechanisms ensure that renewable energy produced in one Member State can count to the target of another Member State.

⁽⁶⁴⁾ The Commission notes that two cases that are currently pending in front of the Court of Justice may have an influence on this issue: Joined Cases C-204/12, C-205/12, C-206/12, C-207/12, C-208/12 *Essent Belgium v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* and Case C-573/12 *Ålands Vindkraft v Energimyndigheten*.

⁽⁶⁵⁾ Beneficiaries can outsource balancing responsibilities to other companies on their behalf, such as aggregators.

(126) In a transitional phase covering the years 2015 and 2016, aid for at least 5 % of the planned new electricity capacity from renewable energy sources should be granted in a competitive bidding process on the basis of clear, transparent and non-discriminatory criteria.

From 1 January 2017, the following requirements apply:

Aid is granted in a competitive bidding process on the basis of clear, transparent and non-discriminatory criteria ⁽⁶⁶⁾, unless:

- (a) Member States demonstrate that only one or a very limited number of projects or sites could be eligible; or
- (b) Member States demonstrate that a competitive bidding process would lead to higher support levels (for example to avoid strategic bidding); or
- (c) Member States demonstrate that a competitive bidding process would result in low project realisation rates (avoid underbidding).

If such competitive bidding processes are open to all generators producing electricity from renewable energy sources on a non-discriminatory basis, the Commission will presume that the aid is proportionate and does not distort competition to an extent contrary to the internal market.

The bidding process can be limited to specific technologies where a process open to all generators would lead to a suboptimal result which cannot be addressed in the process design in view of, in particular:

- (a) the longer-term potential of a given new and innovative technology; or
- (b) the need to achieve diversification; or
- (c) network constraints and grid stability; or
- (d) system (integration) costs; or
- (e) the need to avoid distortions on the raw material markets from biomass support ⁽⁶⁷⁾.

(127) Aid may be granted without a competitive bidding process as described in paragraph (126) to installations with an installed electricity capacity of less than 1 MW, or demonstration projects, except for electricity from wind energy, for installations with an installed electricity capacity of up to 6 MW or 6 generation units.

(128) In the absence of a competitive bidding process, the conditions of paragraphs (124) and (125) and the conditions for operating aid to energy from renewable energy sources other than electricity as set out in paragraph (131) are applicable.

(129) The aid is only granted until the plant has been fully depreciated according to normal accounting rules and any investment aid previously received must be deducted from the operating aid.

(130) These conditions are without prejudice to the possibility for Member States to take account of spatial planning considerations, for example by requiring building permissions prior to the participation in the bidding process or requiring investment decisions within a certain period.

⁽⁶⁶⁾ Installations that started works before 1 January 2017 and had received a confirmation of the aid by the Member State before such date can be granted aid on the basis of the scheme in force at the time of confirmation.

⁽⁶⁷⁾ No other operating aid may be granted to new installations generating electricity from biomass if excluded from the bidding process.

3.3.2.2. Aid for energy from renewable sources other than electricity

(131) For energy from renewable sources other than electricity, operating aid will be considered compatible with the internal market if the following cumulative conditions are met:

- (a) the aid per unit of energy does not exceed the difference between the total levelised costs of producing energy ('LCOE') from the particular technology in question and the market price of the form of energy concerned;
- (b) the LCOE may include a normal return on capital. Investment aid is deducted from the total investment amount in calculating the LCOE;
- (c) the production costs are updated regularly, at least every year; and
- (d) aid is only granted until the plant has been fully depreciated according to normal accounting rules in order to avoid that operating aid based on LCOE exceeds the depreciation of the investment.

3.3.2.3. Aid for existing biomass plants after plant depreciation

(132) Unlike most other renewable sources of energy, biomass requires relatively low investment costs but higher operating costs. Higher operating costs may prevent a biomass⁽⁶⁸⁾ plant from operating even after depreciation of the installation as the operating costs can be higher than the revenues (the market price). On the other hand, an existing biomass plant may operate by using fossil fuel instead of biomass as an input source if the use of fossil fuel as an input is more economically advantageous than the use of biomass. To preserve the use of biomass in both cases, the Commission may find operating aid to be compatible with the internal market even after plant depreciation.

(133) The Commission will consider operating aid for biomass after plant depreciation compatible with the internal market if a Member State demonstrates that the operating costs borne by the beneficiary after plant depreciation are still higher than the market price of the energy concerned and provided that the following cumulative conditions are met:

- (a) the aid is only granted on the basis of the energy produced from renewable sources;
- (b) the measure is designed such that it compensates the difference in operating costs borne by the beneficiary and the market price; and
- (c) a monitoring mechanism is in place to verify whether the operating costs borne are still higher than the market price of energy. The monitoring mechanism needs to be based on updated production cost information and take place at least on an annual basis.

(134) The Commission will consider operating aid for biomass after plant depreciation compatible with the internal market if a Member State demonstrates that, independent from the market price of the energy concerned, the use of fossil fuels as an input is more economically advantageous than the use of biomass and provided that the following cumulative conditions are met:

- (a) the aid is only granted on the basis of the energy produced from renewable sources;
- (b) the measure is designed such that it compensates the difference in operating costs borne by the beneficiary from biomass compared to the alternative fossil fuel input;
- (c) credible evidence is provided that without the aid a switch from the use of biomass to fossil fuels would take place within the same plant; and
- (d) a monitoring mechanism is in place to verify that the use of fossil fuels is more beneficial than the use of biomass. The monitoring mechanism needs to be based on updated cost information and take place at least on an annual basis.

⁽⁶⁸⁾ This includes the production of biogas which has the same characteristics.

3.3.2.4. Aid granted by way of certificates

(135) Member States may grant support for renewable energy sources by using market mechanisms such as green certificates. These market mechanisms⁽⁶⁹⁾ allow all renewable energy producers to benefit indirectly from guaranteed demand for their energy, at a price above the market price for conventional power. The price of these green certificates is not fixed in advance, but depends on market supply and demand.

(136) The Commission will consider the aid referred to in paragraph (135) to be compatible with the internal market if Member States can provide sufficient evidence that such support (i) is essential to ensure the viability of the renewable energy sources concerned; (ii) does not, for the scheme in the aggregate, result in overcompensation over time and across technologies, or in overcompensation for individual less deployed technologies in so far as differentiated levels of certificates per unit of output are introduced; and (iii) does not dissuade renewable energy producers from becoming more competitive.

(137) The Commission considers in particular that no differentiation in support levels through green certificates may be applied unless a Member State demonstrates the need for a differentiation on the basis of the justifications set out in paragraph (126). The conditions set out in paragraphs (124) and (125) apply when technically possible. Any investment aid previously received must be deducted from the operating aid.

3.4. Energy efficiency measures, including cogeneration and district heating and district cooling

(138) The Union set the objective of saving 20 % of the Union's primary energy consumption by 2020. In particular the Union adopted the Energy Efficiency Directive, which establishes a common framework to promote energy-efficiency within the Union pursuing the overall objective of achieving the Union's 2020 headline target on energy-efficiency and pave the way for further energy-efficiency improvement beyond 2020.

3.4.1. Objective of common interest

(139) In order to ensure that aid contributes to a higher level of environmental protection, aid for district heating and district cooling and cogeneration of heat and electricity ('CHP') will only be considered compatible with the internal market if granted for investment, including upgrades, to high-efficient CHP and energy-efficient district heating and district cooling. For measures co-financed by the European Structural and Investments Funds, Member States may rely on the reasoning in the relevant Operational Programmes.

(140) State aid for cogeneration and district heating installations using waste, including waste heat, as input fuel can make a positive contribution to environmental protection, provided that it does not circumvent the waste hierarchy principle (referred to in paragraph (118)).

(141) To demonstrate the contribution of the aid towards an increased level of environmental protection, the Member State may use, as much as possible in quantifiable terms, a variety of indicators, in particular the amount of energy saved due to better, lower energy performance and higher energy productivity or the efficiency gains by reduced energy consumption and reduced fuel input.

3.4.2. Need for State intervention

(142) Energy-efficiency measures target negative externalities as referred to in paragraph (35) by creating individual incentives to attain environmental targets for energy-efficiency and for the reduction of greenhouse gas emissions. In addition to the general market failures identified in Section 3.2, one example of a market failure that may arise in the field of energy-efficiency measures concerns energy-efficiency measures in buildings. When renovation works in buildings are considered, the benefits of energy efficiency measures do not typically accrue with the building owner, who generally bears the renovation costs, but with the tenant. The Commission therefore considers that State aid may be needed to promote investments in energy-efficiency in order to meet the targets of the EED.

⁽⁶⁹⁾ Such mechanisms can for instance oblige electricity suppliers to source a given proportion of their supplies from renewable sources.

3.4.3. *Incentive effect*

(143) The EED puts an obligation on Member States to achieve targets including in energy-efficient renovation of buildings and in final energy consumptions. However, the EED does not impose energy-efficient targets on undertakings and will on that point not prevent an aid in the field of energy-efficiency from having an incentive effect.

(144) The incentive effect of the aid will be assessed on the basis of the conditions set out in Section 3.2.4 of these Guidelines.

3.4.4. *Appropriateness of the aid*

(145) State aid may be considered an appropriate instrument to finance energy-efficiency measures, independently of the form in which it is granted.

(146) For energy efficiency measures, a repayable advance may be considered as an appropriate State aid instrument in particular if the revenues from the energy-efficiency measure are uncertain.

(147) When assessing State aid granted for in particular the energy-efficient renovation of buildings, a financial instrument set up by the Member State to finance renovation works may be considered as an appropriate instrument for the granting of State aid.

3.4.5. *Proportionality*

Investment aid for energy-efficiency measures

(148) The eligible costs are determined as the extra investment costs as established in paragraph (73). For energy-efficiency measures, the counterfactual scenario can be difficult to establish particularly in case of integrated projects. For such projects, the Commission is amenable to consider a proxy for determining the eligible costs as set out in paragraph (75).

(149) The aid intensities set out in Annex 1 apply.

Operating aid for energy-efficiency measures (except operating aid for high energy efficient CHP)

(150) The Commission will consider operating aid for energy-efficiency to be proportionate only if the following cumulative 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 saving⁽⁷⁰⁾. 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; and
- (b) the operating aid is limited to a five year duration.

Operating aid for high energy efficient CHP

(151) Operating aid for high energy efficient cogeneration plants may be granted on the basis of the conditions applying to operating aid for electricity from renewable energy sources as established in Section 3.3.2.1 and only:

- (a) to undertakings generating 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.

⁽⁷⁰⁾ The concept of production costs must be understood as being net of any aid but inclusive of a normal level of profit.

3.5. Aid for resource efficiency and in particular aid to waste management

3.5.1. Resource Efficiency

(152) The Europe 2020 flagship initiative for 'Resource Efficient Europe' aims for sustainable growth by identifying and creating new business opportunities, inter alia, through new and innovative means of production, business models and product design. It sets out how such growth can be decoupled from the use of resources and its overall environmental impact.

(153) Market failures as identified in paragraph (35) are particularly relevant for resource efficiency. In addition, market failures in that area are not often addressed by other policies and measures, such as taxation or regulation. State aid may in such cases be necessary.

(154) For individual measures, Member States need to demonstrate quantifiable benefits in this policy area, particularly the amount of resources saved or the resource efficiency gains.

(155) The Commission recalls in view of the close ties with new innovative production means that measures promoting resource efficiency may benefit, once the relevant criteria are fulfilled, from an additional eco-innovation bonus as referred to in paragraph (78).

3.5.2. Aid to waste management

(156) More specifically, and in line with the waste hierarchy principle (referred to in paragraph (118)), the Union's Seventh Environment Action Programme identifies the prevention, re-use and recycling of waste as one of its top priorities. Member States are required to establish waste management plans⁽⁷¹⁾ and should respect this hierarchy and design state aid measures that are coherent with implementation of these plans. Another key concept which inspires Union legislation in the environmental field is the 'polluter pays principle', described in paragraph (44).

(157) State aid for the management of waste, in particular for activities aimed at the prevention, re-use and recycling of waste, can make a positive contribution to environmental protection, provided that it does not circumvent the principles referred to in previous paragraph. This includes the re-use or recycling of water or minerals that would otherwise be unused as waste. In particular, in light of the PPP, undertakings generating waste should not be relieved of the costs of its treatment. Moreover, the normal functioning of the secondary materials market should not be negatively impacted.

(158) The Commission will consider aid for waste management to serve an objective of common interest in accordance with the principles of waste management set out above if the following cumulative conditions are met:

- (a) the investment is aimed at reducing waste generated by other undertakings and does not extend to waste generated by the beneficiary of the aid;
- (b) the aid does not indirectly relieve the polluters from a burden that should be borne by them under Union or national law, such a burden should be considered a normal company cost for the polluters;
- (c) the investment goes beyond the state of the art⁽⁷²⁾, i.e. prevention, re-use, recycling or recovery or uses conventional technologies in an innovative manner notably to move towards the creation of a circular economy using waste as a resource;
- (d) the materials treated would otherwise be disposed of, or be treated in a less environmentally friendly manner; and
- (e) the investment does not merely increase demand for the materials to be recycled without increasing collection of those materials.

⁽⁷¹⁾ Directive 2008/98/EC Article 28.

⁽⁷²⁾ State of the art means a process in which the prevention, re-use, recycling or recovery of waste product to manufacture an end product is economically profitable and normal practice. Where appropriate, the concept of 'state of the art' must be interpreted from a Union technological and common market perspective.

(159) Aid which, contrary to what is specified in paragraph (158)(a), is intended for the management of the beneficiary's own waste will be assessed on the basis of the general criteria in Section 3.2 applicable to aid for undertakings going beyond Union standards or increasing environmental protection in the absence of Union standards pursuant to paragraph (25)(c).

3.6. Aid to Carbon Capture and Storage (CCS)

(160) As recognised by Directive 2009/31/EC⁽⁷³⁾ ('the CCS Directive') and the Commission Communication on the future of CCS in Europe⁽⁷⁴⁾, CCS is a technology that can contribute to mitigating climate change. In the transition to a fully low-carbon economy, CCS technology can reconcile the demand for fossil fuels, with the need to reduce greenhouse gas emissions. In some industrial sectors, CCS may currently represent the only technology option able to reduce process-related emissions at the scale needed in the long term. Given that the cost of capture, transport and storage is an important barrier to the uptake of CCS, State aid can contribute to fostering the development of this technology.

(161) In order to promote the long term decarbonisation objectives, the Commission considers that the aid for CCS contributes to the common objective of environmental protection.

(162) The Union has taken several initiatives to address negative externalities. In particular the Union ETS ensures the internalisation of the costs of GHG emissions, which however may not, yet, ensure the achievement of the Union's long term decarbonisation objectives. The Commission therefore presumes that aid for CCS addresses a residual market failure, unless it has evidence that such remaining market failure no longer exists.

(163) Without prejudice in particular to Union's regulations in that field, the Commission presumes the appropriateness of aid provided all other conditions are met. Both operating and investment aid is permitted.

(164) The aid may be provided to support fossil fuel and, or biomass power plants (including co-fired power plants with fossil fuels and biomass) or other industrial installations equipped with CO₂ capture, transport and storage facilities, or individual elements of the CCS chain. However, aid to support CCS projects does not include aid for the CO₂ emitting installation (industrial installations or power plants) as such, but aid for the costs resulting from the CCS project.

(165) The aid is limited to the additional costs for capture, transport and storage of the CO₂ emitted. It is generally accepted that the counterfactual scenario would consist in a situation where the project is not carried out as CCS is similar to additional infrastructure which is not needed to operate an installation. In view of this counterfactual scenario, the eligible costs are defined as the funding gap. All revenues, including for instance cost savings from a reduced need for ETS allowances, NER300 funding and EPR funding are taken into account⁽⁷⁵⁾.

(166) The Commission assesses the distortive effects of the aid on the basis of the criteria laid down in Section 3.2.6, taking into account whether any knowledge sharing arrangements are in place, whether the infrastructure is open to third parties and whether the support to individual elements of the CCS chain has a positive impact on other fossil fuel installations owned by the beneficiary.

⁽⁷³⁾ Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (OJ L 140, 5.6.2009, p. 114).

⁽⁷⁴⁾ COM(2013) 180 final 27.3.2013.

⁽⁷⁵⁾ Commission Decision 2010/670/EU (OJ L 290, 6.11.2010 p. 39) (NER300 funding) and Regulation (EC) No 2010/1233/EU amending Regulation (EC) No 2009/663/EC (OJ L 346 30.12.2010 p. 5) (EPR funding).

3.7. Aid in the form of reductions in or exemptions from environmental taxes and in the form of reductions in funding support for electricity from renewable sources

3.7.1. Aid in the form of reductions in or exemptions from environmental taxes

(167) Environmental taxes are imposed in order to increase the costs of environmentally harmful behaviour, thereby discouraging such behaviour and increasing the level of environmental protection. In principle, environmental taxes should reflect the overall costs to society, and correspondingly, the amount of tax paid per unit of emission should be the same for all emitting firms. While reductions in or exemptions from environmental taxes may adversely impact that objective⁽⁷⁶⁾, such an approach may nonetheless be needed where the beneficiaries would otherwise be placed at such a competitive disadvantage that it would not be feasible to introduce the environmental tax in the first place.

(168) Indeed, granting a more favourable tax treatment to some undertakings may facilitate a higher general level of environmental taxes. Accordingly, reductions in or exemptions from environmental taxes⁽⁷⁷⁾, including tax refunds, can at least indirectly contribute to a higher level of environmental protection. However, the overall objective of the environmental tax to discourage environmentally harmful behaviour should not be undermined. The tax reductions should be necessary and based on objective, transparent and non-discriminatory criteria, and the undertakings concerned should make a contribution towards increasing environmental protection. That could be achieved by granting compensation in the form of tax refunds, whereby undertakings are not exempted from the tax as such but receive a fixed annual compensation for the anticipated increase in the tax amount payable

(169) The Commission will authorise aid schemes for maximum periods of 10 years, after which a Member State can re-notify the measure if the Member State re-evaluates the appropriateness of the aid measures concerned.

(170) The Commission will consider that tax reductions do not undermine the general objective pursued and contribute at least indirectly to an increased level of environmental protection, if a Member State demonstrates that (i) the reductions are well targeted to undertakings being mostly affected by a higher tax and (ii) that a higher tax rate is generally applicable than would be the case without the exemption.

(171) For this purpose, the Commission will assess the information provided by Member States. Such information should include, on the one hand, the respective sector(s) or categories of beneficiaries covered by the exemptions or reductions and, on the other hand, the situation of the main beneficiaries in each sector concerned and how the taxation may contribute to environmental protection. 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).

(172) When environmental taxes are harmonised, the Commission can apply a simplified approach to assess the necessity and proportionality of the aid. In the context of Directive 2003/96/EC⁽⁷⁸⁾ ('ETD'), the Commission can apply a simplified approach for tax reductions respecting the Union minimum tax level. For all other environmental taxes, an in depth assessment of the necessity and proportionality of the aid is needed.

Situation 1: Harmonised environmental taxes

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

⁽⁷⁶⁾ In many cases, the firms benefiting from the tax reductions are the ones with the most harmful behaviour targeted by the tax.

⁽⁷⁷⁾ One way to do so would be to grant compensation in the form of tax credits, whereby undertakings are not exempted from the tax but receive a lump sum compensation for it.

⁽⁷⁸⁾ Directive 2003/96/EC restructuring the Community framework for the taxation of energy products and electricity (OJ L 283, 31.10.2003 p. 51) sets such minimum tax levels.

(174) Member States can grant the aid in the form of a reduction of the tax rate or as a fixed annual compensation amount (tax refund), or as a combination of the two. The advantage of the tax refund approach is that undertakings remain exposed to the price signal, which the environmental tax gives. Where used, the amount of the tax refund should be calculated on the basis of historical data, i.e. the level of production, and the consumption or pollution observed for the undertaking in a given base year. The level of the tax refund must not go beyond the Union minimum tax amount that would result for the base year.

(175) If the beneficiaries pay less than the Union minimum tax level set by the relevant applicable Directive, the aid will be assessed on the basis of the conditions for non-harmonised environmental taxes as set out in paragraphs (176) to (178).

Situation 2: Non-harmonised environmental taxes and specific situations of of harmonised taxes

(176) For all other non-harmonised environmental taxes and in the case of harmonised taxes below the Union minimum levels of the ETD (see paragraph (172)) and in order to demonstrate the necessity and proportionality of the aid, a Member State should clearly define the scope of the tax reductions. For that purpose, a Member State should provide information specified in paragraph (171). Member States may decide to grant aid beneficiaries aid in the form of a tax refund, (referred to in paragraph (174)). This approach continues to expose aid beneficiaries to the price signal, which the environmental tax intends to give, while limiting the anticipated increase in the tax amount payable.

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

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

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

- (a) aid beneficiaries pay at least 20 % of the national environmental tax; or
- (b) the tax reduction is conditional on the conclusion of agreements between the Member State and the beneficiaries or associations of beneficiaries whereby the beneficiaries or associations of beneficiaries commit themselves to achieve environmental protection objectives which have the same effect as if beneficiaries pay at least 20 % of the national tax or, in the circumstances foreseen in paragraph (173), if the Union 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. Such agreements must satisfy the following cumulative conditions:
 - (i) the substance of the agreements is negotiated by the Member State, specifies the targets and fixes a time schedule for reaching the targets;
 - (ii) the Member State ensures independent⁽⁷⁹⁾ and timely monitoring of the commitments concluded in the agreements; and
 - (iii) the agreements are revised periodically in the light of technological and other developments and stipulate effective penalty arrangements applicable if the commitments are not met.

(179) In case of a carbon tax levied on energy products used for electricity production, the electricity supplier is liable to pay the tax. Such carbon tax can be designed in a way that supports and is directly linked to the Union ETS allowance price by taxing carbon. However, the electricity price increases if those costs are passed on to the electricity consumer. In that case, the effect of the carbon tax is similar to the effect of ETS allowance costs being passed on and included in the electricity price, indirect emissions costs.

⁽⁷⁹⁾ It is irrelevant for these purposes whether the monitoring is done by a public or a private body.

(180) Therefore, if the tax referred to in paragraph (179) is designed in a way that it is directly linked to the EU ETS allowance price and aims to increase the allowance price, compensation for those higher indirect costs may be considered. The Commission will consider the measure compatible with the internal market only if the following cumulative conditions are met:

- (a) aid is only granted to sectors and subsectors listed in Annex II of the ETS State Aid Guidelines⁽⁸⁰⁾, to compensate for additional indirect cost resulting from the tax;
- (b) the aid intensity and maximum aid intensities are calculated as defined in paragraphs 27 to 30 of the ETS State Aid Guidelines. The ETS allowance forward price can be replaced by the level of the national tax; and
- (c) aid is granted as a lump sum that can be paid to the beneficiary in the year in which the costs are incurred or in the following year. If the aid is paid in the year in which the costs are incurred, an *ex post* monitoring mechanism needs to be put in place to ensure that any over-payment of aid is repaid before 1 July of the following year.

3.7.2. Aid in the form of reductions in the funding of support for energy from renewable sources⁽⁸¹⁾

(181) The funding of support to energy from renewable sources through charges does as such not target a negative externality and accordingly has no direct environmental effect. Those charges are, therefore, fundamentally different from the indirect taxes on electricity set out in paragraph (167) even if they may also result in higher electricity prices. The increase in electricity costs may be explicit through a specific charge which is levied from electricity consumers on top of the electricity price or indirect through additional costs faced by electricity suppliers due to obligations to buy renewable energy which are subsequently passed on to their customers, the electricity consumers. A typical example would be the mandatory purchase by electricity suppliers of a certain percentage of renewable energy through green certificates for which the supplier is not compensated.

(182) In principle and to the extent that the costs of financing renewable energy support are recovered from energy consumers, they should be recovered in a way that does not discriminate between consumers of energy. However, some targeted reductions in these costs may be needed to secure a sufficient financing base for support to energy from renewable sources and hence help reaching the renewable energy targets set at EU level⁽⁸²⁾. On the one hand, in order to avoid that undertakings particularly affected by the financing costs of renewable energy support are put at a significant competitive disadvantage, Member States may wish to grant partial compensation for these additional costs. Without such compensation the financing of renewable support may be unsustainable and public acceptance of setting up ambitious renewable energy support measures may be limited. On the other hand, if such compensation is too high or awarded to too many electricity consumers, the overall funding of support to energy from renewable sources might be threatened as well and the public acceptance for renewable energy support may be equally hampered and distortions of competition and trade may be particularly high.

(183) For the assessment of State aid to compensate for the financing of support to energy from renewable sources, the Commission will only apply the conditions set out in this Section and in Section 3.2.7.

⁽⁸⁰⁾ OJ C 158, 5.6.2012, p. 4.

⁽⁸¹⁾ Internal market legislation (Directive 2009/72/EC of 13 July 2009 concerning common rules for internal market in electricity and repealing Directive 2003/54/EC (OJ L 211, 14.8.2009, p. 55), Regulation (EC) No 714/2009 of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 (OJ L 211, 14.8.2009, p. 15) and the subsequent network codes and guidelines), does not give right to cross-subsidisation of consumers within the tariff regimes.

⁽⁸²⁾ Directive 2009/28/EC of the European Parliament and the Council on the promotion of the use of energy from renewable sources sets binding renewable targets for all Member States. Before that, Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market already set renewable electricity targets that Member States had to strive to reach.

(184) In order to ensure that the aid serves to facilitate the funding of support to energy from renewable sources, Member States will need to demonstrate that the additional costs reflected in higher electricity prices faced by the beneficiaries only result from the support to energy from renewable sources. The additional costs cannot exceed the funding of support to energy from renewable sources⁽⁸³⁾.

(185) The aid should be limited to sectors that are exposed to a risk to their competitive position due to the costs resulting from the funding of support to energy from renewable sources as a function of their electro-intensity and their exposure to international trade. Accordingly, the aid can only be granted if the undertaking belongs to the sectors listed in Annex 3⁽⁸⁴⁾. This list is intended to be used only for eligibility for this particular form of compensation.

(186) In addition, to account for the fact that certain sectors might be heterogeneous in terms of electro-intensity, a Member State can include an undertaking in its national scheme granting reductions from costs resulting from renewable support if the undertaking has an electro-intensity of at least 20%⁽⁸⁵⁾ and belongs to a sector with a trade intensity of at least 4% at Union level, even if it does not belong to a sector listed in Annex 3⁽⁸⁶⁾. For the calculation of the electro-intensity of the undertaking, use is to be made of standard electricity consumption efficiency benchmarks for the industry where available.

(187) Within the eligible sector, Member States need to ensure that the choice of beneficiaries is made on the basis of objective, non-discriminatory and transparent criteria and that the aid is granted in principle in the same way for all competitors in the same sector if they are in a similar factual situation.

(188) The Commission will consider the aid to be proportionate if the aid beneficiaries pay at least 15% of the additional costs without reduction.

(189) However, given the significant increase of renewable surcharges in recent years, an own contribution of 15% of the full renewable surcharge might go beyond what undertakings particularly affected by the burden can bear. Therefore, when needed, Member States have the possibility to further limit the amount of the costs resulting from financing aid to renewable energy to be paid at undertaking level to 4% of the gross value added⁽⁸⁷⁾ of the undertaking concerned. For undertakings having an electro-intensity of at least 20%, Member States can limit the overall amount to be paid to 0,5% of the gross value added of the undertaking concerned.

(190) When Member States decide to adopt the limitations of respectively 4% and 0,5% of gross value added, these limitations must apply to all eligible undertakings.

(191) Member States may take measures to ensure that gross value added data used for the purpose of this Section cover all the relevant labour costs.

⁽⁸³⁾ The most direct way to demonstrate the causal link is by reference to a charge or levy on top of the electricity price, which is dedicated to the funding of energy from renewable sources. An indirect way to demonstrate the additional costs would be to calculate the impact of higher net costs for the electricity suppliers from green certificates and calculate the impact on the electricity price assuming the higher net costs are passed on by the supplier.

⁽⁸⁴⁾ The Commission considers that such risks exist for sectors that are facing a trade intensity of 10% at EU level when the sector electro-intensity reaches 10% at EU level. In addition, a similar risk exists in sectors that face a lower trade exposure but at least 4% and have a much higher electro-intensity of at least 20% or that are economically similar (e.g. on account of substitutability). Equally, sectors having a slightly lower electro-intensity but at least 7% and facing very high trade exposure of at least 80% would face the same risk. The list of eligible sectors was drafted on that basis. Finally, the following sectors have been included because they are economically similar to listed sectors and produce substitutable products (casting of steel, light metals and non-ferrous metals on account of substitutability with casting of iron; recovery of sorted materials on account of substitutability with primary products included in the list).

⁽⁸⁵⁾ Details of how electro-intensity for an undertaking should be calculated are set out at Annex 4.

⁽⁸⁶⁾ This test can be applied as well to undertakings from the service sector.

⁽⁸⁷⁾ Details of how gross value added for an undertaking should be calculated are set out at Annex 4.

(192) Member States can grant the aid in the form of a reduction from charges, or as a fixed annual compensation amount (tax refund), or as a combination of the two⁽⁸⁸⁾. Where the aid is granted in the form of a reduction from charges, an *ex post* monitoring mechanism needs to be put in place to ensure that any over-payment of aid will be repaid before 1 July of the following year. Where the aid is granted in the form of a fixed annual compensation amount, it must be calculated on the basis of historical data, i.e. the observed levels of electricity consumption and the gross value added in a given base year. The amount of compensation shall not exceed the aid amount the undertaking would have received in the base year, applying the parameters set out in this Section.

3.7.3. *Transitional rules for aid granted to reduce the burden related to funding support for energy from renewable sources*

(193) Member States are to apply eligibility and proportionality criteria set out in Section 3.7.2 at the latest by 1 January 2019. Aid granted in respect of a period before that date will be considered compatible if it satisfies the same criteria.

(194) In addition, the Commission considers that all aid granted to reduce the burden related to funding support for electricity from renewable sources in respect of the years preceding 2019 can be declared compatible with the internal market to the extent that it complies with an adjustment plan.

(195) To avoid abrupt disruption for individual undertaking, such adjustment plan shall entail progressive adjustment to the aid levels resulting from the application of the eligibility and proportionality criteria set out in section 3.7.2.

(196) To the extent that aid was granted in respect of a period before the date of application of these Guidelines, the plan shall also provide for a progressive application of the criteria for that period.

(197) To the extent that aid in the form of reduction or exemption from the burden related to funding support for electricity from renewable sources was granted before the date of application of these Guidelines to undertakings that are not eligible under Section 3.7.2, such aid can be declared compatible provided that the adjustment plan foresees a minimum own contribution of 20 % of the additional costs of the surcharge without reduction, to be established progressively and at the latest by 1 January 2019.

(198) The adjustment plan shall take all relevant economic factors linked to the renewable policy into account.

(199) The adjustment plan shall be approved by the Commission.

(200) The adjustment plan shall be notified to the Commission at the latest 12 months after the date of application of these Guidelines.

3.8. **Aid to energy infrastructure**

(201) A modern energy infrastructure is crucial for an integrated energy market, which is key to ensuring energy security in the Union, and to enable the Union to meet its broader climate and energy goals. The Commission has estimated total investment needs in energy infrastructures of European significance until 2020 at about EUR 200 billion⁽⁸⁹⁾. That assessment was based on an evaluation of the infrastructure needed to allow the Union to meet the overarching policy objectives of completing the internal energy market, ensuring security of supply and enabling the integration of renewable sources of energy. Where market operators cannot deliver the infrastructure needed, State aid may be necessary in order to overcome market failures and to ensure that the Union's considerable infrastructure needs are met. This is particularly true for infrastructure projects having a cross-border impact or contributing to regional cohesion. Aid to energy infrastructure should in principle be investment aid, including its modernisation and upgrade.

⁽⁸⁸⁾ The use of fixed annual compensations (tax refunds) has the advantage that exempted firms face the same increase in the marginal cost of electricity (i.e. the same increase in the cost of electricity for every extra MWh consumed), thereby limiting potential distortions of competition within the sector.

⁽⁸⁹⁾ Commission Staff Working Document, Energy infrastructure investment needs and financing requirements, 6.6.2011, SEC(2011)755, p. 2.

3.8.1. *Objective of common interest*

(202) Energy infrastructure is a precondition for a functioning energy market. Aid to energy infrastructure therefore strengthens the internal energy market. It enhances system stability, generation adequacy, integration of different energy sources and energy supply in under-developed networks. The Commission therefore considers that aid to energy infrastructure is beneficial to the internal market and thus contributes to an objective of common interest.

3.8.2. *Need for State intervention*

(203) Energy infrastructure investments are often characterised by market failures. A market failure that may arise in the field of energy infrastructure is related to problems of coordination. Diverging interests among investors, uncertainty about the collaborative outcome and network effects may prevent the development of a project or its effective design. At the same time, energy infrastructure may generate substantial positive externalities, whereby the costs and benefits of the infrastructure may occur asymmetrically among the different market participants and Member States.

(204) To address the market failures referred to in paragraph (203), energy infrastructure is typically subjected to tariff and access regulation and to unbundling requirements according to internal energy market legislation⁽⁹⁰⁾.

(205) In terms of financing, the granting of State aid is a way of overcoming the market failure other than by means of compulsory user tariffs. Therefore, to demonstrate of the need of State aid in the field of energy infrastructure, the principles described in paragraphs (206) and (207) apply.

(206) The Commission considers that for Projects of Common Interest as defined in Regulation (EC) No 347/2013⁽⁹¹⁾, for smart grids, and for infrastructure investments in assisted areas, the market failures in terms of positive externalities and coordination problems are such that financing by means of tariffs may not be sufficient and State aid may be granted.

(207) For energy infrastructure projects falling under paragraph (206) and partially or wholly exempted from internal energy market legislation, and for projects not falling under paragraph (206), the Commission will carry out a case-by-case assessment of the need for State aid. In its assessment, the Commission will consider the following factors: (i) to what extent a market failure leads to a sub-optimal provision of the necessary infrastructure; (ii) to what extent the infrastructure is open to third party access and subject to tariff regulation; and (iii) to what extent the project contributes to the Union's security of energy supply.

(208) For oil infrastructure projects, the Commission presumes that there is no need for State aid. However, Member States may grant State aid in exceptional circumstances where duly justified.

⁽⁹⁰⁾ Internal market regulation in the field of energy in particular includes Directive 2009/72/EC 13 July 2009 concerning common rules for the internal market in electricity (OJ L 211, 14.8.2009, p. 55); Directive 2009/73/EC of 13 July 2009 concerning common rules for the internal market in natural gas (OJ L 211, 14.8.2009, p. 94); Regulation (EC) No 713/2009 of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators; Regulation (EC) No 714/2009 of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity (OJ L 211, 14.8.2009, p. 15); and Regulation (EC) No 715/2009 of 13 July 2009 on conditions for access to the natural gas transmission networks (OJ L 211, 14.8.2009, p. 36).

⁽⁹¹⁾ Regulation (EU) No 347/2013 on Guidelines for trans-European energy infrastructure.

3.8.3. *Appropriateness*

(209) The Commission considers that tariffs⁽⁹²⁾ are the appropriate primary means to fund energy infrastructure. However, in the case of Projects of Common Interest, smart grids and infrastructure investments in assisted areas, State aid may be considered an appropriate instrument to partially or wholly finance that infrastructure. In such cases, market failures often prevent the full implementation of, the 'user pays' principle, on which tariff regulation is based, for example, because the tariff increase to finance new infrastructure investment would be so substantial as to deter investments or potential customers from using the infrastructure.

3.8.4. *Incentive effect*

(210) The incentive effect of the aid will be assessed on the basis of the conditions set out in Section 3.2.4.

3.8.5. *Proportionality*

(211) The aid amount must be limited to the minimum needed to achieve the infrastructure objectives sought. For aid to infrastructure, the counterfactual scenario is presumed to be the situation in which the project would not take place. The eligible cost is therefore the funding gap.

(212) Aid measures in support of infrastructure should not exceed an aid intensity of 100 % of the eligible costs.

(213) The Commission will require Member States to clearly and separately identify any other aid measure, which might impact on the aid measures for infrastructure.

3.8.6. *Avoidance of undue negative effects on competition and trade*

(214) In view of the existing requirements under the internal energy market legislation, which are aimed at strengthening competition, the Commission will consider that aid for energy infrastructure subject to internal market regulation does not have undue distortive effects.

(215) In the case of infrastructure partially or wholly exempted from, or not subject to, internal energy market legislation and in the case of underground gas storage facilities, the Commission will carry out a case-by-case assessment of the potential distortions of competition taking into account, in particular, the degree of third party access to the aided infrastructure, access to alternative infrastructure and the market share of the beneficiary.

3.9. **Aid for generation adequacy**

(216) With the increasing share of renewable energy sources, electricity generation is in many Member States shifting from a system of relatively stable and continuous supply towards a system with more numerous and small-scale supply of variable sources. The shift raises new challenges for ensuring generation adequacy.

(217) Moreover, market and regulatory failures may cause insufficient investment in generation capacity, for example, in a situation where wholesale prices are capped and electricity markets fail to generate sufficient investment incentives.

(218) As a result, some Member States consider the introduction of measures to ensure generation adequacy, typically by granting support to generators for the mere availability of generation capacity⁽⁹³⁾.

⁽⁹²⁾ The regulatory framework enshrined in Commission Directives 2009/72/EC and 2009/73/EC sets out the rationale and the principles underpinning the regulation of access and usage tariffs, which are used by transmission and distribution system operators to fund the investment and the maintenance of such infrastructure.

⁽⁹³⁾ The Commission specifically addressed the issue of generation adequacy in its Communication Delivering the internal market in electricity and making the most of public intervention of 5 November 2013 (C(2013)7243final) and in the associated staff working document Generation Adequacy in the internal electricity market — guidance on public interventions SWD(2013) 438 final of 5 November 2013.

3.9.1. Objective of common interest

(219) Measures for generation adequacy can be designed in a variety of ways, in the form of investment and operating aid (in principle only rewarding the commitment to be available to deliver electricity), and can pursue different objectives. They may for example aim at addressing short-term concerns brought about by the lack of flexible generation capacity to meet sudden swings in variable wind and solar production, or they may define a target for generation adequacy, which Member States may wish to ensure regardless of short-term considerations.

(220) Aid for generation adequacy may contradict the objective of phasing out environmentally harmful subsidies including for fossil fuels. Member States should therefore primarily consider alternative ways of achieving generation adequacy which do not have a negative impact on the objective of phasing out environmentally or economically harmful subsidies, such as facilitating demand side management and increasing interconnection capacity.

(221) The precise objective, at which the measure is aimed, should be clearly defined, including when and where the generation adequacy problem is expected to arise. The identification of a generation adequacy problem should be consistent with the generation adequacy analysis carried out regularly by the European Network of Transmission Operators for electricity in accordance with the internal energy market legislation⁽⁹⁴⁾.

3.9.2. Need for State intervention

(222) The nature and causes of the generation adequacy problem, and therefore of the need for State aid to ensure generation adequacy, should be properly analysed and quantified, for example, in terms of lack of peak-load or seasonal capacity or peak demand in case of failure of the short-term wholesale market to match demand and supply. The unit of measure for quantification should be described and its method of calculation should be provided.

(223) The Member States should clearly demonstrate the reasons why the market cannot be expected to deliver adequate capacity in the absence of intervention, by taking account of on-going market and technology developments⁽⁹⁵⁾.

(224) In its assessment, the Commission will take account, among others and when applicable, of the following elements to be provided by the Member State:

- (a) assessment of the impact of variable generation, including that originating from neighbouring systems;
- (b) assessment of the impact of demand-side participation, including a description of measures to encourage demand side management⁽⁹⁶⁾;
- (c) assessment of the actual or potential existence of interconnectors, including a description of projects under construction and planned;
- (d) assessment of any other element which might cause or exacerbate the generation adequacy problem, such as regulatory or market failures, including for example caps on wholesale prices.

3.9.3. Appropriateness

(225) The aid should remunerate solely the service of pure availability provided by the generator, that is to say, the commitment of being available to deliver electricity and the corresponding compensation for it, for example, in terms of remuneration per MW of capacity being made available. The aid should not include any remuneration for the sale of electricity, that is to say, remuneration per MWh sold.

⁽⁹⁴⁾ Regulation (EC) No 714/2009 of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity, in particular Article 8 on tasks of the ENTSO for electricity (OJ L 211 14.8.2009, p. 15) In particular, the methodology developed by ENTSO-E, the European Association of Transmission System Operators, for its assessments of EU-level generation adequacy can provide a valid reference.

⁽⁹⁵⁾ Such developments can include, for example, the development of market coupling, intraday markets, balancing markets and ancillary services markets and storage of electricity.

⁽⁹⁶⁾ The Commission will also take account of plans related to the roll out of smart meters in accordance with Annex I of Directive 2009/72/EC as well as to the requirements under the Energy Efficiency Directive.

(226) The measure should be open and provide adequate incentives to both existing and future generators and to operators using substitutable technologies, such as demand-side response or storage solutions. The aid should therefore be delivered through a mechanism which allows for potentially different lead times, corresponding to the time needed to realise new investments by new generators using different technologies. The measure should also take into account to what extent interconnection capacity could remedy any possible problem of generation adequacy.

3.9.4. *Incentive effect*

(227) The incentive effect of the aid will be assessed on the basis of the conditions set out in Section 3.2.4 of these Guidelines.

3.9.5. *Proportionality*

(228) The calculation of the overall amount of aid should result in beneficiaries earning a rate of return, which can be considered reasonable.

(229) A competitive bidding process on the basis of clear, transparent and non-discriminatory criteria, effectively targeting the defined objective, will be considered as leading to reasonable rates of return under normal circumstances.

(230) The measure should have built-in mechanisms to ensure that windfall profits cannot arise.

(231) The measure should be constructed so as to ensure that the price paid for availability automatically tends to zero when the level of capacity supplied is expected to be adequate to meet the level of capacity demanded.

3.9.6. *Avoidance of undue negative effects on competition and trade*

(232) The measure should be designed in a way so as to make it possible for any capacity which can effectively contribute to addressing the generation adequacy problem to participate in the measure, in particular, taking into account the following factors:

- (a) the participation of generators using different technologies and of operators offering measures with equivalent technical performance, for example, demand side management, interconnectors and storage. Without prejudice to the paragraph (228), restriction on participation can only be justified on the basis of insufficient technical performance required to address the generation adequacy problem. Moreover, the generation adequacy measure should be open to potential aggregation of both demand and supply;
- (b) the participation of operators from other Member States where such participation is physically possible in particular in the regional context, that is to say, where the capacity can be physically provided to the Member State implementing the measure and the obligations set out in the measure can be enforced⁽⁹⁷⁾;
- (c) participation of a sufficient number of generators to establish a competitive price for the capacity;
- (d) avoidance of negative effects on the internal market, for example due to export restrictions, wholesale price caps, bidding restrictions or other measures undermining the operation of market coupling, including intra-day and balancing markets.

(233) The measure should:

- (a) not reduce incentives to invest in interconnection capacity;
- (b) not undermine market coupling, including balancing markets;
- (c) not undermine investment decisions on generation which preceded the measure or decisions by operators regarding the balancing or ancillary services market;
- (d) not unduly strengthen market dominance;
- (e) give preference to low-carbon generators in case of equivalent technical and economic parameters.

⁽⁹⁷⁾ Schemes should be adjusted in the event that common arrangements are adopted to facilitate cross-border participation in such schemes.

3.10. Aid in the form of tradable permit schemes

(234) Tradable permit schemes can be set up to reduce emissions from pollutants, for instance to reduce NO_x emissions⁽⁹⁸⁾. They can involve State aid, in particular 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 level of each individual undertaking, if the allowances granted do not cover the totality of expected needs of the undertaking, the undertaking must either reduce its pollution, therefore contributing to the improvement of the level of environmental protection, or buy supplementary allowances on the market, therefore paying a compensation for its pollution.

(235) Tradable permit schemes are considered to be compatible with the internal market if the following cumulative conditions are met:

- (a) the tradable permit schemes must be set up in such a way as to achieve environmental objectives beyond those intended to be achieved on the basis of Union standards that are mandatory for the undertakings concerned;
- (b) the allocation must be carried out in a transparent way, based on objective criteria and on data sources of the highest quality available, and the total amount of tradable permits or allowances granted to each undertaking for a price below their market value must not be higher than its expected needs as estimated for a situation without the trading scheme;
- (c) the allocation methodology must not favour certain undertakings or certain sectors, unless this is justified by the environmental logic of the scheme itself or where such rules are necessary for consistency with other environmental policies;
- (d) new entrants are not in principle to receive permits or allowances on more favourable conditions than existing undertakings operating on the same markets. Granting higher allocations to existing installations compared to new entrants should not result in creating undue barriers to entry.

(236) The Commission will assess the necessity and the proportionality of State aid involved in a tradable permit scheme according to the following criteria:

- (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 if they are in a similar factual situation;
- (b) full auctioning must lead to a substantial increase in production costs for each sector or category of individual beneficiaries;
- (c) the substantial increase in production costs cannot be passed on to customers without leading to significant sales reductions. The analysis may be conducted on the basis of estimates of the product price elasticity of the sector concerned, among other factors. To evaluate whether the cost increase from the tradable permit scheme cannot be passed on to customers, estimates of lost sales as well as their impact on the profitability of the company may be used;
- (d) individual undertakings in the sector should not have the possibility to reduce emission levels in order to make the price of the certificates bearable. Irreducible consumption may be demonstrated by providing the emission levels derived from best performing technique in the European Economic Area ('EEA') and using them as a benchmark. Any undertaking reaching the best performing technique can benefit at most from an allowance corresponding to the increase in production cost from the tradable permit scheme using the best performing technique, and which cannot be passed on to customers. Any undertaking having a worse environmental performance benefits from a lower allowance, proportionate to its environmental performance.

3.11. Aid for the relocation of undertakings

(237) The aim of investment aid for the relocation of undertakings is to create individual incentives to reduce negative externalities by relocating undertakings that create major pollution to areas where such pollution will have a less damaging effect, which will reduce external costs. The aid may therefore be justified if the relocation is made for environmental reasons, but it should be avoided that aid is granted for relocation for any other purpose.

⁽⁹⁸⁾ Case C-279/08 P, *Commission vs the Netherlands* [2011] ECR I-7671.

(238) Investment aid for the relocation of undertakings to new sites for environmental protection reasons is considered compatible with the internal market if the conditions laid down in Sections 3.2.4 and 3.2.7 and the following cumulative conditions are met:

- (a) the change of location must be dictated by environmental protection or prevention grounds and must have been ordered by administrative or judicial decision of a competent public authority or agreed between the undertaking and the competent public authority;
- (b) the undertaking must comply with the strictest environmental standards applicable in the new region where it is located.

(239) The beneficiary can be:

- (a) an undertaking established in an urban area or in a special area of conservation designated under Directive 92/43/EEC⁽⁹⁹⁾ which lawfully carries out (that is to say, it complies with all legal requirements including all environmental standards applicable to it) an activity that creates major pollution and which, on account of its location, must move from its place of establishment to a more suitable area; or
- (b) an establishment or installation falling within the scope of Directive 2012/18/EU⁽¹⁰⁰⁾ ('the Seveso III Directive').

(240) In order to determine the amount of eligible costs in the case of relocation aid, the Commission will take into account, in particular:

- (a) the following benefits:
 - (i) the yield from the sale or renting of the plant or land abandoned;
 - (ii) the compensation paid in the event of expropriation;
 - (iii) any other gains connected with the transfer of the plant, notably gains resulting from an improvement, on the occasion of the transfer, in the technology used and accounting gains associated with better use of the plant;
 - (iv) investments relating to any capacity increase;
- (b) the following costs:
 - (i) the costs connected with the purchase of land or the construction or purchase of new plant of the same capacity as the plant abandoned;
 - (ii) any penalties imposed on the undertaking for having terminated the contract for the renting of land or buildings, where the change of location is carried out in order to comply with an administrative or judicial decision.

(241) The aid intensities are laid down in Annex 1.

4. EVALUATION

(242) To further ensure that distortion of competition is limited, the Commission may require that certain aid schemes are subject to a time limitation (of normally 4 years or less) and to the evaluation referred to in paragraph (28). Evaluations will be carried out for schemes where the potential distortion of competition is particularly high, that is to say, that may risk to significantly restrict or distort competition if their implementation is not reviewed in due time.

(243) 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. The evaluation must be carried out by an expert independent from the aid granting authority on the basis of a common methodology provided by the Commission. It must be made public. The Member State must notify, together with the aid scheme, a draft evaluation plan, which will be an integral part of the Commission's assessment of the scheme.

⁽⁹⁹⁾ Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206 22.7.1992, p. 7); Directive as last amended by Directive 2013/17/EU (OJ L 158, 10.6.2013, p. 193).

⁽¹⁰⁰⁾ Directive 2012/18/EU of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (OJ L 197, 24.7.2010, p. 1).

(244) In the case of aid schemes excluded from the scope of the General Block Exemption Regulation exclusively by reason of their large budget, the Commission will assess compatibility of the aid scheme, with the exception of the evaluation plan, on the basis of the criteria defined in that Regulation instead of these Guidelines.

(245) The evaluation must be submitted to the Commission in due time to allow for the assessment of the possible prolongation of the aid scheme and in any case upon its expiry. The precise scope and modalities of each evaluation will be defined in the decision approving the aid scheme. Any subsequent aid measure with a similar objective (including any alteration of schemes referred in paragraph (244)) must take into account the results of the evaluation.

5. APPLICATION

(246) These Guidelines will be applied from 1 July 2014 and replace the Guidelines on State aid for environmental protection published on 1 April 2008⁽¹⁰¹⁾. They will be applicable until 31 December 2020.

(247) The Commission will apply these Guidelines to all notified aid measures in respect of which it is called upon to take a decision after their applicability, even where the projects were notified prior to that date. However, individual aid granted under approved aid schemes and notified to the Commission pursuant to an obligation to notify such aid individually will be assessed under the Guidelines that apply to the approved aid scheme on which the individual aid is based.

(248) Unlawful environmental aid or energy aid will be assessed in accordance with the rules in force on 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 aid⁽¹⁰²⁾ with the following exception:

Unlawful aid in the form of reductions in funding support for energy from renewable sources will be assessed in accordance with the provisions of Sections 3.7.2 and 3.7.3.

As from 1 January 2011, the adjustment plan foreseen in paragraph (194) shall also foresee a progressive application of the criteria of section 3.7.2 and of the own contribution foreseen in paragraph (197). Prior to that date, the Commission considers that all aid granted in the form of reductions in funding support for electricity from renewable sources can be declared compatible with the internal market⁽¹⁰³⁾.

(249) Individual aid granted under an unlawful aid scheme will be assessed under the Guidelines that apply to the unlawful aid scheme at the time the individual aid was granted. If the beneficiary of such individual aid has received confirmation from a Member State that it will benefit from operating aid in support of energy from renewable sources and cogeneration under an unlawful scheme for a predetermined period, such aid can be granted for the entire period under the conditions laid down in the scheme at the time of the confirmation to the extent that the aid is compatible with the rules applying at the time of the confirmation.

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

Member States should amend, where necessary, such schemes in order to bring them into line with these Guidelines no later than 1 January 2016, with the following exceptions:

⁽¹⁰¹⁾ OJ C 82, 1.4.2008, p. 1.

⁽¹⁰²⁾ OJ C 119, 22.5.2002, p.22.

⁽¹⁰³⁾ The Commission considers that such aid does not adversely affect trading conditions to an extent contrary to the common interest for the following reasons. By 5 December 2010, the Member States had to bring into force the laws, regulations and administrative provisions necessary to comply with the RED, which introduces legally binding targets for consumption of renewable energy. On the other hand, the total costs for the support of the production of electricity from renewable sources remained rather limited until the year 2010, so that the level of charges remained relatively low. Therefore, the amount of aid granted to undertakings in the form of reductions in funding support for electricity from renewable sources remained limited at the level of the individual beneficiary. Furthermore, any aid granted from December 2008 until December 2010 that does not exceed 500 000 EUR per undertaking is likely to be compatible on the basis of the Communication from the Commission — Temporary Community framework for State aid measures to support access to finance in the current financial and economic crisis (OJ C 83, 7.4.2009, p. 1) as amended.

Where necessary, existing aid schemes within the meaning of Article 1(b) of Council Regulation (EC) No 659/1999⁽¹⁰⁴⁾ concerning operating aid in support of energy from renewable sources and cogeneration only need to be adapted to these Guidelines when Member States prolong their existing schemes, have to re-notify them after expiry of the 10 years-period or after expiry of the validity of the Commission decision or change⁽¹⁰⁵⁾ them.

Whenever a beneficiary has received confirmation from a Member State that it will benefit from State aid under such a scheme for a predetermined period, such aid can be granted under the entire period under the conditions laid down in the scheme at the time of the confirmation

(251) Member States are invited to give their explicit unconditional agreement to the 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.

6. REPORTING AND MONITORING

(252) In accordance with Council Regulation (EC) No 659/1999 and Commission Regulation (EC) No 794/2004⁽¹⁰⁶⁾ and their subsequent amendments, Member States must submit annual reports to the Commission.

(253) 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.

7. REVISION

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

⁽¹⁰⁴⁾ Council Regulation (EC) No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 of the EC Treaty (OJ L 83, 27.3.1999, p. 1).

⁽¹⁰⁵⁾ A change is any notifiable change within the meaning of Article 1(c) of Regulation (EC) No 659/1999.

⁽¹⁰⁶⁾ Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Regulation (EC) No 659/1999 (OJ L 140, 30.4.2004, p. 1).

ANNEX 1

Aid intensities for investment aid as a part of the eligible costs

(1) The following aid intensities are applied for environmental aid measures:

	Small enterprise	Medium-sized enterprise	Large enterprise
Aid for undertakings going beyond Union standards or increasing the level of environmental protection in the absence of Union standards (aid for the acquisition of new transport vehicles)	60 % 70 % if eco-innovation, 100 % if bidding process	50 % 60 % if eco-innovation, 100 % if bidding process	40 % 50 % if eco-innovation 100 % if bidding process
Aid for environmental studies	70 %	60 %	50 %
Aid for early adaptation to future Union standards			
more than 3 years	20 %	15 %	10 %
between 1 and 3 years before the entry into force of the standards	15 %	10 %	5 %
Aid for waste management	55 %	45 %	35 %
Aid for renewable energies Aid for cogeneration installations	65 %, 100 % if bidding process	55 %, 100 % if bidding process	45 %, 100 % if bidding process
Aid for energy-efficiency	50 %, 100 % if bidding process	40 %, [100] % if bidding process	30 %, 100 % if bidding process
Aid for district heating and cooling using conventional energy	65 %, 100 % if bidding process	55 %, 100 % if bidding process	45 % 100 % if bidding process
Aid the remediation of contaminated sites	100 %	100 %	100 %
Aid for relocation of undertakings	70 %	60 %	50 %
Aid in the form of tradable permits	100 %	100 %	100 %
Aid for energy infrastructure District heating infrastructure	100 %	100 %	100 %
Aid for CCS	100 %	100 %	100 %

The aid intensities mentioned in this table may be increased by a bonus of 5 % points in regions covered by Article 107(3)(c) or by a bonus of 15 % points in regions covered by Article 107(3)(a) of the Treaty up to a maximum of 100 % aid intensity.

ANNEX 2

Typical State interventions

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

Aid category	Counterfactual scenario/Eligible costs ⁽¹⁾
CHP	The counterfactual is a conventional electricity or heating production system with the same capacity in terms of the effective production of energy.
Environmental Studies ⁽²⁾	The eligible costs are the costs of the studies.
Remediation of contaminated sites	The costs incurred ⁽³⁾ for the remediation work, less the increase in the value of the land ⁽⁴⁾ .
District heating and cooling production plants	The investment costs for the construction, expansion, refurbishment of one or more generation units which are an integral part of the efficient district heating and cooling system.
Waste management ⁽⁵⁾	The extra investment compared to the cost of conventional production not involving waste management with the same capacity investment.
Aid for going beyond Union standards	The extra investment costs consist of the additional investment costs necessary to go beyond the level of environmental protection required by the Union standards ⁽⁶⁾ .
Absence of Union or national standards	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.
RES electricity production	The extra investment cost compared to the cost of a conventional power plant with the same capacity in terms of the effective production of energy.
RES heating	The extra investment cost compared to the cost of a conventional heating system with the same capacity in terms of the effective production of energy.
Biogas production which is upgraded to a level of natural gas	If the aid is limited to the upgrading of biogas, the counterfactual constitutes the alternative use of these biogas (including burning).
Biofuels and biogas used for transport	In principle the extra investment cost compared to that of a normal refinery should be chosen, but the Commission can accept alternative counterfactuals if duly justified.

Aid category	Counterfactual scenario/Eligible costs ⁽¹⁾
Making use of industrial by-products	If the by-product would go wasted unless reused: the eligible cost is the extra investment necessary to use the by product, for instance a heat exchanger in the case of waste heat. If the by-product would need to be disposed: the counterfactual investment is the disposal of the waste.
Aid involved in tradable permit schemes	Proportionality needs to be demonstrated by the absence of over-allocation.

⁽¹⁾ The Commission may accept alternative counterfactual scenarios if duly justified by the Member State.

⁽²⁾ This includes aid for energy-efficiency audits.

⁽³⁾ The environmental damage to be repaired has to cover damage to the quality of the soil or of surface water or groundwater. All expenditure incurred by an undertaking for the remediation of 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.

⁽⁴⁾ Evaluations of the increase in value of the land resulting from the remediation have to be carried out by an independent expert.

⁽⁵⁾ This concerns waste management of other undertakings and includes re-utilisation, recycling and recovery activities.

⁽⁶⁾ The cost of investments needed to reach the level of protection required by the Union standards is not eligible and need to be deducted.

ANNEX 3

List ⁽¹⁾ of eligible sectors ⁽²⁾ under Section 3.7.2

NACE code	Description
510	Mining of hard coal
729	Mining of other non-ferrous metal ores
811	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate
891	Mining of chemical and fertiliser minerals
893	Extraction of salt
899	Other mining and quarrying n.e.c.
1032	Manufacture of fruit and vegetable juice
1039	Other processing and preserving of fruit and vegetables
1041	Manufacture of oils and fats
1062	Manufacture of starches and starch products
1104	Manufacture of other non-distilled fermented beverages
1106	Manufacture of malt
1310	Preparation and spinning of textile fibres
1320	Weaving of textiles
1394	Manufacture of cordage, rope, twine and netting
1395	Manufacture of non-wovens and articles made from non-wovens, except apparel
1411	Manufacture of leather clothes
1610	Sawmilling and planing of wood
1621	Manufacture of veneer sheets and wood-based panels
1711	Manufacture of pulp
1712	Manufacture of paper and paperboard
1722	Manufacture of household and sanitary goods and of toilet requisites
1920	Manufacture of refined petroleum products
2012	Manufacture of dyes and pigments
2013	Manufacture of other inorganic basic chemicals
2014	Manufacture of other organic basic chemicals
2015	Manufacture of fertilisers and nitrogen compounds
2016	Manufacture of plastics in primary forms
2017	Manufacture of synthetic rubber in primary forms
2060	Manufacture of man-made fibres
2110	Manufacture of basic pharmaceutical products

⁽¹⁾ The Commission may carry out a review of the list in Annex 3 on the basis of the criteria contained in footnote 89, provided that the Commission is presented with evidence that the data on which the Annex is based has changed significantly.

⁽²⁾ This list, and the criteria it is based on does not represent, and is not relevant, for the Commission's future position on the risk of carbon leakage as regards ETS for the work in the context of elaborating carbon leakage rules in the 2030 climate and energy policy framework.

NACE code	Description
2221	Manufacture of plastic plates, sheets, tubes and profiles
2222	Manufacture of plastic packing goods
2311	Manufacture of flat glass
2312	Shaping and processing of flat glass
2313	Manufacture of hollow glass
2314	Manufacture of glass fibres
2319	Manufacture and processing of other glass, including technical glassware
2320	Manufacture of refractory products
2331	Manufacture of ceramic tiles and flags
2342	Manufacture of ceramic sanitary fixtures
2343	Manufacture of ceramic insulators and insulating fittings
2349	Manufacture of other ceramic products
2399	Manufacture of other non-metallic mineral products n.e.c.
2410	Manufacture of basic iron and steel and of ferro-alloys
2420	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
2431	Cold drawing of bars
2432	Cold rolling of narrow strip
2434	Cold drawing of wire
2441	Precious metals production
2442	Aluminium production
2443	Lead, zinc and tin production
2444	Copper production
2445	Other non-ferrous metal production
2446	Processing of nuclear fuel
2720	Manufacture of batteries and accumulators
3299	Other manufacturing n.e.c.
2011	Manufacture of industrial gases
2332	Manufacture of bricks, tiles and construction products, in baked clay
2351	Manufacture of cement
2352	Manufacture of lime and plaster
2451/2452/ 2453/2454	Casting of iron, steel, light metals and other non-ferrous metals
2611	Manufacture of electronic components
2680	Manufacture of magnetic and optical media
3832	Recovery of sorted materials

ANNEX 4

Calculation of gross value added and electro-intensity at the level of the undertaking under section 3.7.2

- (1) For the purposes of Section 3.7.2, gross value added (GVA) for the undertaking means the gross value added at factor costs, which is GVA at market prices less any indirect taxes plus any subsidies. Value added at factor cost can be calculated from turnover, plus capitalised production, plus other operating income, plus or minus changes in stocks, minus purchases of goods and services⁽¹⁾, minus other taxes on products that are linked to turnover but not deductible, minus duties and taxes linked to production. Alternatively, it can be calculated from gross operating surplus by adding personnel costs. Income and expenditure classified as financial or extraordinary in company accounts is excluded from value added. Value added at factor costs is calculated at gross level, as value adjustments (such as depreciation) are not subtracted⁽²⁾.
- (2) For the purposes of applying Section 3.7.2, the arithmetic mean over the most recent 3 years⁽³⁾ for which GVA data is available shall be used.
- (3) For the purposes of Section 3.7.2, the electro-intensity of an undertaking shall be defined as:
- (a) The undertaking's electricity costs (as calculated according to paragraph (4) below); divided by
- (b) The undertaking's GVA (as calculated according to paragraphs (1) and (2) above).
- (4) An undertaking's electricity costs shall be defined as:
- (a) The undertaking's electricity consumption; multiplied by
- (b) The assumed electricity price.
- (5) For the calculation of the electricity consumption of the undertaking, use is to be made of electricity consumption efficiency benchmarks for the industry where available. If not available, the arithmetic mean over the most recent 3 years⁽⁴⁾ for which data is available shall be used.
- (6) For the purposes of subparagraph (4)(b), above, the assumed electricity price shall mean the average retail electricity price applying in the Member State to undertakings with a similar level of electricity consumption in the most recent year for which data is available.
- (7) For the purposes of subparagraph (4)(b), above, the assumed electricity price can include the full cost of funding support for electricity from renewable sources that would be passed on to the undertaking in the absence of reductions.

⁽¹⁾ For avoidance of doubt, 'goods and services' shall not include personnel costs.

⁽²⁾ Code 12 15 0 within the legal framework established by Council Regulation (EC, Euratom) No 58/97 of 20 December 1996 concerning structural business statistics.

⁽³⁾ In the case of undertakings in existence for less than one year, projected data can be used in the first year of operation. However, Member States should carry out an *ex-post* assessment at the end of the first year of operation ('Year 1') to verify the eligibility status of the undertaking and the cost limits (as a percentage of GVA) applying to it under paragraph 189 in Section 3.7.2. Following this *ex-post* assessment, Member States should compensate companies or recover compensation given, as appropriate. For Year 2, data from Year 1 should be used. For Year 3, the arithmetic mean of data for Years 1 and 2 should be used. From Year 4 onwards, the arithmetic mean of data for the previous 3 years should be used.

⁽⁴⁾ See previous footnote.

ANNEX 5

Mining and manufacturing sectors not included on the list of Annex 3 having an extra-EU trade intensity of at least 4%

NACE code	Description
610	Extraction of crude petroleum
620	Extraction of natural gas
710	Mining of iron ores
812	Operation of gravel and sand pits; mining of clays and kaolin
1011	Processing and preserving of meat
1012	Processing and preserving of poultry meat
1013	Production of meat and poultry meat products
1020	Processing and preserving of fish, crustaceans and molluscs
1031	Processing and preserving of potatoes
1042	Manufacture of margarine and similar edible fats
1051	Operation of dairies and cheese making
1061	Manufacture of grain mill products
1072	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes
1073	Manufacture of macaroni, noodles, couscous and similar farinaceous products
1081	Manufacture of sugar
1082	Manufacture of cocoa, chocolate and sugar confectionery
1083	Processing of tea and coffee
1084	Manufacture of condiments and seasonings
1085	Manufacture of prepared meals and dishes
1086	Manufacture of homogenised food preparations and dietetic food
1089	Manufacture of other food products n.e.c.
1091	Manufacture of prepared feeds for farm animals
1092	Manufacture of prepared pet foods
1101	Distilling, rectifying and blending of spirits
1102	Manufacture of wine from grape
1103	Manufacture of cider and other fruit wines
1105	Manufacture of beer
1107	Manufacture of soft drinks; production of mineral waters and other bottled waters
1200	Manufacture of tobacco products
1391	Manufacture of knitted and crocheted fabrics
1392	Manufacture of made-up textile articles, except apparel
1393	Manufacture of carpets and rugs

NACE code	Description
1396	Manufacture of other technical and industrial textiles
1399	Manufacture of other textiles n.e.c.
1412	Manufacture of workwear
1413	Manufacture of other outerwear
1414	Manufacture of underwear
1419	Manufacture of other wearing apparel and accessories
1420	Manufacture of articles of fur
1431	Manufacture of knitted and crocheted hosiery
1439	Manufacture of other knitted and crocheted apparel
1511	Tanning and dressing of leather; dressing and dyeing of fur
1512	Manufacture of luggage, handbags and the like, saddlery and harness
1520	Manufacture of footwear
1622	Manufacture of assembled parquet floors
1623	Manufacture of other builders' carpentry and joinery
1624	Manufacture of wooden containers
1629	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials
1721	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard
1723	Manufacture of paper stationery
1724	Manufacture of wallpaper
1729	Manufacture of other articles of paper and paperboard
1813	Pre-press and pre-media services
1910	Manufacture of coke oven products
2020	Manufacture of pesticides and other agrochemical products
2030	Manufacture of paints, varnishes and similar coatings, printing ink and mastics
2041	Manufacture of soap and detergents, cleaning and polishing preparations
2042	Manufacture of perfumes and toilet preparations
2051	Manufacture of explosives
2052	Manufacture of glues
2053	Manufacture of essential oils
2059	Manufacture of other chemical products n.e.c.
2120	Manufacture of pharmaceutical preparations
2211	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres
2219	Manufacture of other rubber products
2223	Manufacture of builders' ware of plastic

NACE code	Description
2229	Manufacture of other plastic products
2341	Manufacture of ceramic household and ornamental articles
2344	Manufacture of other technical ceramic products
2362	Manufacture of plaster products for construction purposes
2365	Manufacture of fibre cement
2369	Manufacture of other articles of concrete, plaster and cement
2370	Cutting, shaping and finishing of stone
2391	Production of abrasive products
2433	Cold forming or folding
2511	Manufacture of metal structures and parts of structures
2512	Manufacture of doors and windows of metal
2521	Manufacture of central heating radiators and boilers
2529	Manufacture of other tanks, reservoirs and containers of metal
2530	Manufacture of steam generators, except central heating hot water boilers
2540	Manufacture of weapons and ammunition
2571	Manufacture of cutlery
2572	Manufacture of locks and hinges
2573	Manufacture of tools
2591	Manufacture of steel drums and similar containers
2592	Manufacture of light metal packaging
2593	Manufacture of wire products, chain and springs
2594	Manufacture of fasteners and screw machine products
2599	Manufacture of other fabricated metal products n.e.c.
2612	Manufacture of loaded electronic boards
2620	Manufacture of computers and peripheral equipment
2630	Manufacture of communication equipment
2640	Manufacture of consumer electronics
2651	Manufacture of instruments and appliances for measuring, testing and navigation
2652	Manufacture of watches and clocks
2660	Manufacture of irradiation, electromedical and electrotherapeutic equipment
2670	Manufacture of optical instruments and photographic equipment
2680	Manufacture of magnetic and optical media
2711	Manufacture of electric motors, generators and transformers
2712	Manufacture of electricity distribution and control apparatus
2731	Manufacture of fibre optic cables
2732	Manufacture of other electronic and electric wires and cables

NACE code	Description
2733	Manufacture of wiring devices
2740	Manufacture of electric lighting equipment
2751	Manufacture of electric domestic appliances
2752	Manufacture of non-electric domestic appliances
2790	Manufacture of other electrical equipment
2811	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
2812	Manufacture of fluid power equipment
2813	Manufacture of other pumps and compressors
2814	Manufacture of other taps and valves
2815	Manufacture of bearings, gears, gearing and driving elements
2821	Manufacture of ovens, furnaces and furnace burners
2822	Manufacture of lifting and handling equipment
2823	Manufacture of office machinery and equipment (except computers and peripheral equipment)
2824	Manufacture of power-driven hand tools
2825	Manufacture of non-domestic cooling and ventilation equipment
2829	Manufacture of other general-purpose machinery n.e.c.
2830	Manufacture of agricultural and forestry machinery
2841	Manufacture of metal forming machinery
2849	Manufacture of other machine tools
2891	Manufacture of machinery for metallurgy
2892	Manufacture of machinery for mining, quarrying and construction
2893	Manufacture of machinery for food, beverage and tobacco processing
2894	Manufacture of machinery for textile, apparel and leather production
2895	Manufacture of machinery for paper and paperboard production
2896	Manufacture of plastic and rubber machinery
2899	Manufacture of other special-purpose machinery n.e.c.
2910	Manufacture of motor vehicles
2920	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
2931	Manufacture of electrical and electronic equipment for motor vehicles
2932	Manufacture of other parts and accessories for motor vehicles
3011	Building of ships and floating structures
3012	Building of pleasure and sporting boats
3020	Manufacture of railway locomotives and rolling stock
3030	Manufacture of air and spacecraft and related machinery
3040	Manufacture of military fighting vehicles

NACE code	Description
3091	Manufacture of motorcycles
3092	Manufacture of bicycles and invalid carriages
3099	Manufacture of other transport equipment n.e.c.
3101	Manufacture of office and shop furniture
3102	Manufacture of kitchen furniture
3103	Manufacture of mattresses
3109	Manufacture of other furniture
3211	Striking of coins
3212	Manufacture of jewellery and related articles
3213	Manufacture of imitation jewellery and related articles
3220	Manufacture of musical instruments
3230	Manufacture of sports goods
3240	Manufacture of games and toys
3250	Manufacture of medical and dental instruments and supplies
3291	Manufacture of brooms and brushes