EUROPEAN
COMMISSION

Brussels, XXX
[...](2014) XXX

Paper of the Services of DG Competition

of XXX

containing draft Guidelines on environmental and energy aid for 20142020

Table of contents

EN

Introduction

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

(2) Aid may be considered compatible on the basis of Article 107(3)(b) of the Treaty to promote the execution of important projects of common European interest or to remedy a serious disturbance in the economy of a Member State. 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) Article 191 of the Treaty stipulates the objectives of the Union environmental policy and Article 194 of the Treaty lays down the aims of the Union energy policy.

(4) The Europe 2020 strategy[1] focuses on creating the conditions for smart, sustainable and inclusive growth. To this end, a number of headline targets have been set, including targets for climate change and energy sustainability: (i) a 20% reduction in EU greenhouse gas emissions from 1990 levels; (ii) raising the share of EU energy consumption produced from renewable resources to 20%; (iii) a 20% improvement in the EU's energy-efficiency compared to 1990 levels.

(5) The sustainable growth targets are particularly important for these Guidelines. In order to support achieving those targets, the Europe 2020 strategy put forward the "Resource efficient Europe" as one of the seven flagship initiatives[2]. This flagship initiative aims to create a framework for policies to support the shift towards a resource-efficient and low-carbon economy which helps to:

(a) boost economic performance while reducing resource use;

(b) identify and create new opportunities for economic growth and greater innovation and boost the EU's competitiveness;

(c) ensure security of supply of essential resources;

(d) fight against climate change and limit the environmental impacts of resource use.

(6) In this context it should be recalled that the Resource Efficiency Roadmap[3] as well as several Council conclusions call for a phasing out of environmental harmful subsidies[4]. These Guidelines should therefore

---

[1] COM(2010) 2020 final of 3.3.2010.
[2] COM(2011) 21 of 26.1.2011.
[3] COM(2011) 571 final of 20.9.2011.
[4] The European Council Conclusions from 23 May 2013 confirmed the need to phase out environmentally or economically harmful subsidies, including for fossil fuels, to facilitate investments in new and intelligent energy infrastructure.

consider negative impacts of environmental harmful subsidies, while taking into account the need to address trade-offs between different areas and policies as recognised by the flagship initiative. Aid for the extraction of fossil fuels is not included in these Guidelines.

(7) The Roadmap also calls on Member States to address gaps in their performance in delivering the benefits from EU legislation[5]. To avoid that State aid measures lead to environmental harm, in particular Member States must also ensure compliance with EU environmental legislation and carry out an environmental impact assessment when it is required by EU law and ensure all relevant permits.

(8) The Communication "Energy 2020 – A strategy for competitive, sustainable and secure energy"[6], 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) In these Guidelines, the Commission sets out the conditions under which aid for energy and environment may be considered compatible with the internal market on the basis of Article 107(3)(c) of the Treaty.

(10) In the Communication on State aid modernisation[7], 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.

(11) In particular, the Communication called for a common approach in the revision of the different guidelines and frameworks based on strengthening the internal market, promoting more effectiveness in public spending through a better contribution of State aid to the objectives of common interest, greater scrutiny on the incentive effect, on limiting the aid to the minimum, and on avoiding the potential negative effects of the aid on competition and trade. The compatibility conditions set out in these guidelines are based on those common assessment principles.

---

[5] 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 203/30/EC, OJ L 140/16 of 5.6.2009, ("the Renewable Energy Directive") includes for instance requirements concerning sustainability of biofuels and non-discrimination in Article 17(1) - 17(8).

[6] COM(2010) 639 of 10.11.2010.

[7] COM(2012) 209 of 8.5.2012.

1. Scope and definitions

1.1 Scope of application

(12) 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 which are subject to specific Union rules on State aid (transport, coal, agriculture, forestry, and fisheries and aquaculture) unless such specific rules provide otherwise.

(13) For agriculture and fisheries and aquaculture, these Guidelines apply to aid for environmental protection in favour of undertakings active in the processing and marketing of products. For undertakings active in the processing and marketing of fisheries products, if the aid concerns expenses eligible under Council Regulation (EC) No 1198/2006 of 27 July 2006 on the European Fisheries Fund[8] or its successor[9], the maximum aid rate allowed is the higher of the aid rate provided for in these Guidelines and the aid rate laid down in that Regulation. In the field of agricultural primary production and EAFRD co-financed measures, these Guidelines apply only to the extent that the Community guidelines for State aid in the agriculture and forestry sector 2007 to 2013[10] as amended or replaced do not provide any specific rules or where those agricultural and forestry Guidelines expressly refer to the present Guidelines. In the field of fisheries and aquaculture primary production, they apply only where no specific provisions dealing with environmental aid exist.

(14) These Guidelines do not apply to

(a) the design and manufacture of environmentally friendly products, machines or means of transport with a view to operating with fewer natural resources and action taken within plants or other production units with a view to improving safety or hygiene[11];

(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[12].

(d) State aid for research, development and innovation; State aid for research, development and innovation is subject to the rules set out in the Community framework for State aid for research and development and innovation[13].

---

[8] OJ L 223/1, 15.8.2006.

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

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

[11] Environmental aid is generally less distortive and more effective if it is granted to the user of environmentally products for its actual use. In addition, the use of environmental labels is another means to increase demand for environmental friendly products. In this light, the Commission does not include specific rules in the scope of these Guidelines.

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

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

(e) State aid to biodiversity measures. Those measures may fall in the scope of the rules set out for Services of General Economic Interest[14].

(15) Environmental and energy aid may not be awarded to firms in difficulties as defined for the purposes of these Guidelines by the applicable Community guidelines on State aid for rescue and restructuring undertakings in difficulty[15] as amended or replaced.

(16) When assessing aid in favour of an undertaking which is subject to an outstanding recovery order following a previous Commission decision declaring an aid illegal and incompatible with the internal market, the Commission will take account of the amount of aid still to be recovered[16].

1.2 Aid measures covered by the Guidelines

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

- Aid for going beyond Union standards or increasing the level of environmental protection in the absence of Union standards (incl. transport vehicles)
- Aid for early adaptation to future Union standards
- Investment and operating aid for energy from renewable sources
- Aid for environmental studies
- Investment and operating aid for energy-efficiency
- Investment and operating aid for cogeneration installations
- Aid for district heating and cooling
- Aid for resource efficiency and waste management
- Aid the remediation of contaminated sites
- Aid for relocation of undertakings
- Aid in the form of tradable permits
- Aid for CO_2 capture, transport and storage (CCS)[17]
- Operating aid in the form of reductions in or exemptions from environmental taxes
- Operating aid in the form of reductions in funding support for electricity from renewable sources
- Aid for energy infrastructure
- Aid for generation adequacy measures

---

[14] State aid cases with reference numbers: SA.31243 (2012/N) and NN8/2009.

[15] OJ C 244, 1.10.2004, p. 2.

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

[17] This includes individual elements of the Carbon Capture Storage chain.

1.3 Definitions

(18) For the purposes of these Guidelines the following definitions apply.

(a) *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;

(b) *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;

(c) *Union standard* means

(a) a mandatory Union standard setting the levels to be attained in environmental terms by individual undertakings[18], or

(b) the obligation under Directive 2010/75/EU to apply the best available techniques (BAT); For these Guidelines, the minimum required levels as specified for the BAT will be applicable.

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

The following are not considered innovations:

(a) minor changes or improvements;

(b) an increase in production or service capabilities through the addition of manufacturing or logistical systems which are very similar to those already in use;

(c) changes in business practices, workplace organisation or external relations that are based on organisational methods already in use in the undertaking;

(d) changes in management strategy;

(e) mergers and acquisitions;

(f) ceasing to use a process;

(g) simple capital replacement or extension;

(h) changes resulting purely from changes in factor prices, customisation, regular seasonal and other cyclical changes;

(i) trading of new or significantly improved products;

[18] 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.

(e) *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;

(f) *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 the biodegradable fraction of industrial and municipal waste;

(g) *biofuels* means liquid or gaseous fuel for transport produced from biomass;

(h) *bioliquids* means liquid fuel for energy purposes other than for transport, including electricity, and heating and cooling, produced from biomass;

(i) *sustainable biofuels* means a biofuel fulfilling the sustainability criteria set out in Article 17 of Directive (EC) 2009/28 of the European Parliament and the Council on the promotion of the use of energy from renewable sources[19] and any amendment thereof.;

(j) *cooperation mechanisms* means a mechanism which fulfils the conditions of Article 6, 7 or 8 of Directive (EC) 2009/28 of the European Parliament and the Council on the promotion of the use of energy from renewable sources[20];

(k) *energy from renewable energy sources* means energy produced by plants using only renewable energy sources, as well as the share in terms of calorific value of energy produced from renewable energy sources in hybrid plants which also use conventional energy sources. It includes renewable electricity used for filling storage systems, but excludes electricity produced as a result of storage systems;

(l) *cogeneration* or combined heat and power (CHP) means the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;

(m) *high-efficiency cogeneration* means cogeneration which satisfies the definition of high-efficiency cogeneration as set out in Article 2(34) by Directive 2012/27/EU[21];

(n) *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[22];

(o) *environmental tax* means a tax whose specific tax base has a clear negative effect on the environment or which seeks to tax certain activities, goods or services so that the environmental costs may be included in their price and/or so that producers and consumers are oriented towards activities which better respect the environment;

---

19 OJ L 140/16, 5.6.2009.

20 OJ L 140/16, 5.6.2009.

21 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 315/1, 14.11.2012.

22 OJ L 315/1, 14.11.2012.

(p) *EU minimum tax level* means the minimum level of taxation provided for in Union legislation. For energy products and electricity, the Union minimum tax level means the minimum level of taxation laid down in Annex I to Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity[23];

(q) *small and medium-sized enterprises* (hereafter 'SMEs'), undertakings that fulfil the conditions laid down in Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises[24];

(r) *large enterprises and large undertakings* means enterprises which are not within the definition of small and medium-sized enterprises;

(s) *aid* means any measure fulfilling all the criteria laid down in Article 107(1) of the Treaty;

(t) *individual* aid means aid granted either on the basis of a scheme or on an ad hoc basis.

(u) *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;

(v) *operating benefits* means, for the purposes of calculating eligible costs, in particular cost savings or additional ancillary production directly linked to the extra investment for environmental protection and, where applicable, benefits accruing from other support measures whether or not they constitute State aid (operating aid granted for the same eligible costs, feed-in tariffs or other support measures);

(w) *operating costs* means, for the purposes of calculating eligible costs, in particular additional production costs flowing from the extra investment for environmental protection;

(x) *tangible assets* means, for the purposes of calculating eligible costs, investments in land which are strictly necessary in order to meet environmental objectives, investments in buildings, plant and equipment intended to reduce or eliminate pollution and nuisances, and investments to adapt production methods with a view to protecting the environment;

(y) *intangible assets* means, for the purposes of calculating eligible costs, spending on technology transfer through the acquisition of operating licences or of patented and non-patented know-how where the following conditions are complied with:

---

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

[24] OJ L 124/36, 20.5.2003.

(a) the intangible asset concerned must be regarded as a depreciable asset,

(b) it must be purchased on market terms, from an undertaking in which the acquirer has no power of direct or indirect control,

(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;

(z) *internalise costs* means the principle that all costs associated with the protection of the environment should be included in the polluting undertakings' production costs;

(aa) *the "polluter pays principle"* means that the costs of measures to deal with pollution should be borne by the polluter who causes the pollution, unless the person responsible for the pollution cannot be identified or cannot be held liable under Union or national legislation or may not be made to bear the costs of remediation. Pollution in this context is the damage caused by the polluter by directly or indirectly damaging the environment, or by creating conditions leading to such damage[25], to physical surroundings or natural resources;

(bb) *polluter* means someone who directly or indirectly damages the environment or who creates conditions leading to such damage[26];

(cc) *contaminated site* means a site where there is a confirmed presence, caused by man, of dangerous substances of such a level that they pose a significant risk to human health or the environment taking into account current and approved future use of the land.

(dd) *Ad hoc aid* means aid not granted on the basis of an aid scheme.

(ee) *Energy infrastructure* means any physical equipment or facility which is located within the Union or linking the Union and one or more third countries and falling under the following categories:

(i) Concerning electricity:

a. overhead transmission lines of at least 110kV and underground and submarine transmission cables of at least 100kV used for transmission and/or distribution of electricity over long distances as well as locally;

b. concerning in particular electricity highways; any physical equipment designed to allow transport of electricity on the high and extra-high voltage level, in view of connecting large amounts of electricity generation or storage located in one or several Member

[25] 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).

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

States or third countries with large-scale electricity consumption in one or several other Member States;

c. 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;

d. any equipment or installation essential for the systems defined in (a) to (c) to operate safely, securely and efficiently, including protection, monitoring and control systems at all voltage levels and substations; and

e. any equipment or installation, both at transmission and 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.

(ii) Concerning gas:

a. transmission and distribution pipelines for the transport of natural gas and bio gas that form part of a network which mainly contains high-pressure pipelines, excluding high-pressure pipelines used for upstream or local distribution of natural gas;

b. underground storage facilities connected to the above-mentioned high-pressure gas pipelines;

c. gas storage, defined as reception, storage and regasification or decompression facilities for liquefied natural gas (LNG) or compressed natural gas (CNG); and

d. any equipment or installation essential for the system to operate safely, securely and efficiently or to enable bi-directional capacity, including compressor stations.

(iii) Concerning oil:

a. pipelines used to transport crude oil;

b. pumping stations and storage facilities necessary for the operation of crude oil pipelines; and

c. any equipment or installation essential for the system in question to operate properly, securely and efficiently, including protection, monitoring and control systems and reverse-flow devices.

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

(gg) *CCS* means Carbon Capture and Storage and consists of a set of technologies that captures the carbon dioxide (CO_2) emitted from industrial plants based on fossil fuels or biomass, including power plants, transports it to a suitable storage site and injects the CO_2 in suitable underground geological formations for the purpose of permanent storage of CO_2.

(hh) *Generation adequacy* means a level of generated capacity which is deemed to be adequate to meet demand levels in the Member State in any given period, based on the use of a conventional statistical indicator used by organisations recognised by EU institutions as performing an essential role in the creation of a single market in electricity, such as ENTSO-E.

(ii) *Generation operator* is an undertaking which produces electrical power from fuel sources.

(jj) *Capacity mechanism* means a mechanism aimed at ensuring that certain generation adequacy levels are met at the national level.

(kk) *Balancing responsibilities* means responsibility for deviations between generation, consumption and market deals (in all timeframes – market deals include sales and purchases on organised markets or between BRPs) of a BRP within a given imbalance settlement period.

(ll) *Standard balancing responsibilities* means non-discriminatory balancing responsibilities across technologies which do not exempt any generator from those responsibilities.

(mm) *Balance Responsible Party (BRP)* means a market participant or its chosen representative responsible for its imbalances.

(nn) *Imbalances* means deviations between generation, consumption and market deals (in all timeframes – market deals include sales and purchases on organised markets or between BRPs) of a BRP within a given imbalance settlement period.

(oo) *Imbalance Settlement* means a financial settlement mechanism aiming at recovering the costs of balancing applicable to imbalances of BRPs.

(pp) *Imbalance Settlement Period* means time units used for computing BRPs' imbalances.

(qq) *Competitive bidding process means* a bidding process where a sufficient number of undertakings participate and aid shall be granted on the basis of the initial bid submitted by the bidder; the budget related to the bidding process should be a binding constraint in the sense that not all bidders can receive aid.. The competitive process may be sequential (with a cap or reservation price imposed at different stages of the bidding process) to ensure a competitive bidding process which does not lead to overcompensation.

(rr) *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;

2. *Notifiable environmental and energy aid*

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

(a) For measures otherwise covered by a block exemption Regulation, all cases exceeding the thresholds foreseen in that Regulation;

(b) For any other measures where the aid satisfies the following conditions[27]:

i *investment aid*: where the aid amount exceeds EUR [7.5] million for one undertaking;

ii *operating aid for the production of renewable electricity and/or combined production of renewable heat*: when the aid is granted to renewable electricity installations in sites where the resulting renewable electricity generation capacity per site exceeds [125] MW;

iii *operating aid for the production of biofuel*: when the aid is granted to a biofuel production installation in sites where the resulting production exceeds [150 000] t per year

iv *operating aid for cogeneration*: where aid is granted to cogeneration installation with the resulting cogeneration electricity capacity exceeding [200] MW. Aid for the production of heat from cogeneration will be assessed in the context of notification based on electricity capacity.

v *Aid for energy infrastructure*: where the aid amount exceeds EUR [20] million for one undertaking, per investment project

vi *Aid for Carbon Capture and Storage*: where the aid amount exceeds EUR [20] million per investment project.

vii *Aid in the form of capacity mechanisms*: where the aid amount exceeds EUR [7.5] million per project per undertaking.

(20) Tax exemptions and reductions from environmental taxes falling under section 5.6 will not be subject to the conditions for individually notified aid. However, aid granted in the form of fiscal aid not covered by section 5.6 of these Guidelines will be subject to an individual assessment if the thresholds in that point 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 5.6.

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

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

3. Common Assessment Principles

(22) 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.

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

(a) Contribution to a well-defined objective of common interest: a State aid measure aims at an objective of common interest in accordance with Article 107(3) of the Treaty;

(b) Need for State intervention: the State aid measure is targeted towards a situation where aid can bring about a material improvement that the market cannot deliver itself, for example by remedying a well-defined market failure;

(c) Appropriateness of the aid measure: the proposed aid measure is an appropriate policy instrument to address the objective of common interest;

(d) Incentive effect: the aid changes the behaviour of the undertaking(s) concerned in such a way that it engages in additional activity which it would not carry out without the aid or it would carry out in a restricted or different manner;

(e) Proportionality of the aid (aid to the minimum): the aid amount is limited to the minimum needed to incentivise the additional investment or activity in the area concerned:

(f) For an assessment on the basis of Article 107(3) c: Avoidance of major undue negative effects on competition and trade between Member States: the negative effects of aid are sufficiently limited, so that the overall balance of the measure is positive;

(g) Transparency of aid: Member States, the Commission, economic operators, and the public, have easy access to all relevant acts and to pertinent information about the aid awarded thereunder.

(24) The overall balance of certain categories of schemes may further be made subject to a requirement of ex post evaluation as described in section 8. In such cases, the Commission may limit the duration of those schemes (normally to four years or less) with a possibility to re-notify their prolongation afterwards.

(25) Moreover, if a State aid measure or the conditions attached to it (including its financing method when it forms an integral part of it) entail a non-severable violation of EU law, the aid cannot be declared compatible with the internal market[28]. In particular, in the field of energy, any levy that has the aim of

[28] See for instance Case C-156/98 *Germany* v *Commission* [2000] ECR I-6857, paragraph 78 and Case C-333/07 *Régie Networks v Rhone Alpes Bourgogne* [2008] ECR I-10807, paragraphs 94-116. See also, in the field of energy, Joined Cases C-128/03 and C-129/03 *AEM and AEM Torino* [2005] I-2861, paragraphs 38 to 51.

financing a State aid measure needs to comply in particular with Articles 30 and 110 of the Treaty[29].

(26) In assessing the compatibility of any individual aid with the internal market, the Commission will take account of any proceedings concerning infringements to Articles 101 or 102 of the Treaty which may concern the beneficiary of the aid and which may be relevant for its assessment[30].

[29] 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 of 9.2.2010, p. 8, recitals 63 to 65.

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

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

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

(28) In the present section, the Commission clarifies how it will apply on the basis of those principles when assessing aid schemes and, where applicable, lays down specific conditions for individual aid (either provided on the basis of a scheme or ad hoc).

(29) Section 4.1 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 4 derogate from these general compatibility conditions. Accordingly, section 4.1 is in particular applicable to the following measures which are not part of the more specific sections of chapter 4:

(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;

(e) Aid involved in tradable permit schemes.

(30) For aid measures for which there is a specific section in this chapter (4.2 *et seq.*), the Commission will apply the general conditions set out in section 4.1 unless the conditions laid down in the relevant specific section provide otherwise.

4.1 General compatibility provisions

4.1.1 Contribution to a common objective

4.1.1.1. General conditions

(31) The general objective of environmental aid is to increase the level of environmental protection compared to the level that would be achieved absent the aid. The Europe 2020 strategy in particular set targets for sustainable growth to support the shift towards a resource-efficient, competitive low-carbon economy. A low carbon economy with a significant share of variable energy from renewable sources requires a transition of the energy system and in particular considerable investments in networks[31]. The primary objective of aid in the energy sector is to ensure a competitive, sustainable and secure energy system in a well-functioning European energy market[32].

(32) Member States intending to grant environmental or energy aid will have to define precisely the objective pursued and explain the expected contribution of the measure to this objective[33]. For measures co-financed by the European Structural

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

[32] COM(2010)639 final "Energy 2020 Communication"

[33] 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.

and Investments Funds, Member States may base themselves on the reasoning in the relevant Operational Programmes to define the environmental or energy objectives pursued.

4.1.1.2. Additional conditions for individually notifiable aid

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

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

(b) *existing Union standards*: the size of the increase in the level of environmental protection beyond the standard (reduction of pollution that would not be achieved by the standard absent any State aid);

(c) *future Union standards*: the increase in speed of implementing future standard (reduction of pollution starting at an earlier date).

4.1.2 Need for State intervention

4.1.2.1. 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[34], State intervention may improve the efficient functioning of markets. Indeed State aid measures can under certain conditions, correct market failures and thereby contribute to achieving the common objective to the extent that the market on its on fails to deliver an efficient outcome. In order to assess whether State aid is effective to achieve the objective, it is necessary first to diagnose and define the problem to be addressed. State aid should be targeted towards situations where aid can bring a material improvement that the market cannot deliver itself.

(35) To establish guidelines ensuring that aid measures achieve this objective, Member States should identify the market failures hampering an increased level of environmental protection or a well-functioning 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** are most common for environmental aid measures and arise when pollution is not adequately priced, i.e. the firm in question does not face the full cost of pollution. 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

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

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 other market participants than the investor, will lead undertakings to underinvest. Positive externalities may occur for instance in case of investments in eco-innovation[35], new and innovative renewable technologies and innovative demand-response measures or in case of energy infrastructures or capacity mechanisms that benefit many Member States (or a wider number of consumers).

(c) **Asymmetric information** typically arises in markets where there is a discrepancy between the information available to one side of the market (say the supply side) and the information available to the other side of the market (say demand side). This could for instance occur where external financial investors have a lack of information as regards the likely returns and risks of the project. It may also come up in cross border infrastructure where one party to the collaboration 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.

(d) **Coordination failures** may prevent the development of a project or its effective design due to diverging interests and incentives among investors (split incentives), the costs of contracting, uncertainty about the collaborative outcome and network effects (e.g. uninterrupted supply of electricity). They can arise for example in the relation between 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. This 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 precisely to address some of the market failures identified. Examples include sectorial regulation, mandatory pollution standards, pricing mechanisms such as the EU Emissions Trading System (ETS) and carbon taxes. Additional measures including State aid may only be directed at the residual market failure, i.e. the market failure that remains unaddressed by such other policies and measures. It is also important to show how State aid reinforces other policies and measures in place that aim at remedying the same market failure. The case for the necessity of State aid is weaker if it counteracts other policies targeted at the same market failure.

[35] 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.

(37) The Commission will consider a need for aid if the Member State demonstrates that a (residual) market failure remains unaddressed which is effectively targeted by the aid.

4.1.2.2. Additional conditions for individually notifiable aid

(38) Whereas market failures may exist in the aggregate 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 a market failure remains unaddressed for the specific activity supported by the aid and whether the aid is effectively targeted to the market failure.

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

(a) Whether other policy measures already address the market failure sufficiently, in particular the existence of environmental or other Union standards, the EU ETS or environmental taxes.

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

4.1.3 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 if other less distortive policy instruments or other less distortive types of aid instruments allow reaching the same positive contribution to the common objective.

4.1.3.1 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 specifically the case where an efficient, market-based mechanism has been put in place to deal specifically with the problem of externalities. An additional support measure to address the same market failure risks to undermine the efficiency of the market-based mechanism.

(43) Different measures to remedy different market failures may also counteract each other. A measure addressing a generation adequacy problem may support the use of fossil fuels which needs to be balanced with the environmental objective of phasing out environmental harmful subsidies. 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 aid could be held liable under existing EU or national law for the pollution[36].

4.1.3.2. 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 this respect, the Member State is required to demonstrate why other potentially less distortive forms of aid such as for instance repayable advances as compared to direct grants or tax credits as compared to tax reductions or forms of aid that are based on debt or equity instruments (for example, low-interest loans or interest rebates, State guarantees, or an alternative provision of capital on favorable terms) are less appropriate.

(46) The choice of the aid instrument should be in coherence with the market failure that the aid measure aims at addressing. In particular where the actual revenues are uncertain, for instance in case of energy saving measures, a repayable advance may constitute the appropriate instrument.

(47) For operating aid, the Member State must demonstrate that the aid is appropriate to achieve the objective of the scheme for the problems that the aid is intended to address. To demonstrate that the aid is appropriate, the Member State may calculate the aid amount ex ante as a fixed sum covering the expected additional costs over a given period, to incentivise undertakings to contain costs and develop their business in a more efficient manner over time[37].

(48) For the purpose of demonstrating the appropriateness of schemes, the Member State can also rely on results of past evaluations as described in section 7.

4.1.4 Incentive effect

4.1.4.1. 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 increase the functioning of a secure, affordable and sustainable European energy market, which it would not do without the aid. The

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

[37] 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).

aid must not subsidize the costs of an activity that an undertaking would anyhow incur and must not compensate for the normal business risk of an economic activity.

(50) The Commission considers that aid granted to adapt to future Union standards has in principle incentive effect. However, aid does not have an incentive effect where investments bring undertakings into compliance with Union standards already adopted and not yet in force.

(51) As an exception to point (50), aid granted for adaptation to Union standards already adopted but not yet in force will be considered to have incentive effect if the investment is finalised at least one year before the Union standards enter into force.

(52) As an exception to point (50), an incentive effect may exist if aid is granted for:

(a) the acquisition of new transport vehicles for road, railway, inland waterway and maritime transport complying with adopted Union standards, provided that the acquisition occurs before these standards enter into force and that, once mandatory, they do not apply to vehicles already purchased.

(b) retrofitting operations of existing transport vehicles for road, railway, inland waterway and maritime transport, provided that the Union standards were not yet in force at the date of entry into operation of these vehicles and that, once mandatory, they do not apply to these vehicles.

(53) In order not to dissuade Member States from setting mandatory national standards which are more stringent than the corresponding Union standards, the Commission finds in principle a positive contribution to environmental or energy objectives for aid supporting investments that enable the beneficiary to go beyond the applicable Union standards as a result from its activities. 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.

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

(55) Member State must use an application form for aid including at least the applicant's name and size, a description of the project, including its location and start and end dates, the amount of aid needed to carry it out and the eligible costs. In the application form, beneficiaries must explain what would have happened without aid. That alternative project is referred to as the counterfactual. The counterfactual can also include a situation where no additional investment is taking place (e.g. adding a filter to an installation without any Union standard obliging the beneficiary to do so). In addition, large undertakings must submit documentary evidence in support of the counterfactual described in the application form. SMEs are not subject to this additional obligation.

(56) When receiving an application form, the granting authority must carry out a credibility check of the counterfactual and confirm that the aid has the required

incentive effect. A counterfactual is credible if it is genuine and relates to the decision-making factors prevalent at the time of the decision by the beneficiary regarding the investment. The conditions of points (55) and (56) are, however, not necessary where the aid is awarded on the basis of a tender.

4.1.4.2. Additional conditions for individually notifiable aid

(57) For measures subject to individual notification, the Member State must fully demonstrate to the Commission the incentive effect of the aid. It needs to provide clear evidence that the aid effectively impacts on the investment decision so that it changes the behaviour of the beneficiary to increase the level of environmental protection or the functioning of the European energy market. To allow a comprehensive assessment, the Member State must provide not only information concerning the aided project but also a comprehensive description of the counterfactual scenario, in which aid is not awarded to the beneficiary by any Member State. This demonstration is, however, not necessary where the aid is awarded on the basis of a tender.

(58) The advantages of new investments or production methods are normally not limited to their direct environmental effects or effects on the energy market. Such advantages may in particular be production advantages[38] while the risks in particular relate to the uncertainty whether investment will be as productive as expected.

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

(60) In this context the level of profitability can be evaluated by reference to methodologies which are standard practice in the particular industry concerned, and which may include methods to evaluate the net present value of the project (NPV)[39], the internal rate of return (IRR)[40] 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.

(61) Where no specific counterfactual is known, the incentive effect can be assumed when there is a funding gap, i.e. when the investment costs exceed the net present

---

[38] 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.

[39] 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)i.e. 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.

[40] 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.

value (NPV) of the expected operating profits of the investment on the basis of an ex ante business plan.

(62) 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.

(63) 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 (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.

(64) The Commission may find 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.

(65) Where the undertaking is adapting to a national standard going beyond Union standards or adopted in the absence of Union standards, the Commission will verify that the aid beneficiary would have been affected substantially in terms of increased costs and would not have been able to bear the costs associated with the immediate implementation of national standards.

(66) 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.

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

4.1.5 Proportionality of the aid

4.1.5.1. General conditions

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

(69) As a general principle, aid will be considered to be limited to the minimum necessary if the aid corresponds to the (net) extra cost necessary to meet the objective, compared to the counterfactual in the absence of aid. Net extra costs compare the difference in the economic benefits and costs (including the investment and operation) of the aided project with those of the alternative investment project the company would carry out in the absence of aid (the counterfactual scenario).

(70) However, it might be difficult to fully take into account all economic benefits which a company will derive from an additional investment[41]. Therefore, for measures which are not subject to an individual assessment, a simplified method that would focus on calculating the extra investment costs (i.e. not taking into account the operating benefits and costs) may be used. Measures which are not subject to an individual assessment will be deemed proportional if the aid amount does not exceed a given percentage of the eligible costs as defined below. These maximum aid intensities also serve as a cap to the aid given for notifiable measures.

Eligible costs

(71) The eligible costs are the extra investment costs in tangible and/or in intangible assets. They will be calculated as the cost of the investment directly related to the targeted common interest objective and will be established by reference to the counterfactual situation where appropriate. The costs not directly linked to the achievement of the environmental or energy objective shall not be eligible.

(72) The eligible costs are determined as follows:

(a) Where the costs of achieving the common interest objective can be identified in the total investment costs as a separate investment (for instance, because the green element is a readily identifiable "add-on component" to a pre-existing facility), the costs of the separate investment constitute the eligible costs.

(b) In all other cases, the eligible costs are the extra investment costs established by comparing the aided investment with the counterfactual situation in the absence of State aid. The correct counterfactual is the cost of a technically comparable investment[42] that would credibly be realised without aid[43] and which does not achieve the common interest objective or that only attains this objective to a lesser degree.

(73) In Annex 2, examples of the relevant counterfactual scenario or eligible cost calculation are presented which reflect the counterfactual that should be used in similar cases.

(74) For some measures in particular supporting integrated projects (e.g. integrated energy-efficiency measures) or biogas projects, the counterfactual can be difficult to establish. For such projects, the Commission is amenable to consider a proxy for determining the extra costs or alternative calculations (e.g. a funding gap approach) which may include a change in maximum aid intensities to reflect the different eligible cost calculation.

(75) The funding gap approach will be applied for aid to the construction of infrastructure as part of a district heating or cooling project. The rules set out in points (71) - (74) are applicable to the generation part of a district heating project.

---

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

[42] 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).

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

Maximum aid intensities

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

(77) Higher aid intensities may be allowed for some types of aid or if the investment is taking place in an assisted region, but the aid intensity can never exceed 100% of eligible costs.

(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 these increases justified in view of the various handicaps faced by these regions that may also hold back environmental or energy investments.

(b) The aid intensity can be increased by 10 percentage points for medium sized and 20 percentage points for small enterprises. Small and medium-sized enterprises which may be faced, on the one hand, with relatively higher costs to achieve environmental or energy objectives compared to the size of their activity and, on the other hand, with capital market imperfections which restrict them to bear such costs, higher aid intensities may also be warranted, as the risk of serious distortions of competition and trade will be 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. This applies in particular to resource efficiency measures. The aid intensity may be increased by 10 percentage points, provided that following conditions are fulfilled:

i the eco-innovation asset or project must be new or substantially improved compared to the state of the art in its industry in the EU[44];

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[45];

---

[44] 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.

[45] 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 no 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.

iii the innovative character of these assets or projects involves a clear degree of risk, in technological, market or financial terms, which is higher than the risk generally associated with comparable non-innovative assets or projects[46].

(78) Therefore, the Commission will consider aid to be compatible if the eligible costs are correctly calculated and the maximum aid intensities set out in Annex 2 are respected.

(79) Where aid to the beneficiary is granted in a genuinely competitive bidding process on the basis of clear, transparent and non-discriminatory criteria that the aid amount may reach 100% of the eligible cost[47]. 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, thus excluding subsequent negotiations.

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

4.1.5.2. 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[48], does not constitute State aid. Where such Union funding is combined with State aid, only the latter shall be considered for determining whether notification thresholds and maximum aid intensities are respected, provided that the total amount of public funding granted in relation to the same eligible costs must however not exceed the maximum funding rate(s) laid down in the applicable European regulations.

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

---

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

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

[48] For instance support granted on the basis of Commission Decision 2010/670/EU (NER300 funding) and Regulation 2010/1233/EU amending Regulation 2009/663/EC (EEPR funding), Horizon 2020 or COSME.

4.1.5.3. 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. Those maximum aid intensities are used as a cap for individual aid[49].

(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 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 counterfactual, the Commission will verify whether the aid amount exceeds the minimum necessary to render the aided project sufficiently profitable, for instance whether it increases its IRR beyond the 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.

(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 if the aid is proportionate. The Member State must demonstrate the proportionality on the basis of documentation such as that referred to in paragraph (62).

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

4.1.6 Avoidance of undue negative effects on competition and trade

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

(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 (undermining the economic performance of the internal market) and to distributional concerns (affecting 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. This 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 (the greening of the economy). When assessing the potential negative effects of environmental aid, the Commission will take into account the overall environmental effect of the measure when looking at its negative impact on the market position, and thus on the profits, of non-aided firms. In doing so, the Commission will notably consider 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,

[49] 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.

the more important the verification of its effect on competitors' market shares and profits in the market at large.

(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 (e.g. 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 in terms of increasing or maintaining substantial market power on the part 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 displaces 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, certain situations can be identified 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. Those intensities constitute a basic requirement for compatibility, the aim of which is to prevent the use of State aid for projects where the ratio between aid amount and eligible costs is to be deemed very high and particularly likely to be distortive.

(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 EU Member State will not be considered compatible.

4.1.6.1. General conditions

(97) In assessing the negative effects of the aid measure, the Commission will focus its analysis of the distortions on the foreseeable impact 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 it aims 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 distortive effects of the aid by considering the following elements:

(a) *reduction in or compensation of production unit costs*: if the new equipment[50] 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 competition distortion;

(b) *more environmentally friendly production process*: if the beneficiaries obtain a more environmentally friendly production process and if it is common through labelling or image to differentiate the product towards consumers on the basis of the level of environmental protection, it is likely that the beneficiaries can increase their sales. The greater the consumer preference for environmental product characteristics, the greater the potential competition distortion;

(c) *new product*: if the beneficiaries obtain a new or a higher quality product, it is likely that they will increase their sales and possibly gain a 'first mover' advantage. The greater the consumer preference for environmental product characteristics, the greater the competition distortion.

4.1.6.2. Additional conditions for individually notifiable aid

(101) The Member State must ensure that the distortive effects as described above are limited. In addition to the elements specified in section 4.1.6.1, the Commission will take into account and assess for individual aid whether the 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.

(102) The Commission may consider the planned introduction of energy and environmental support schemes, other than the one notified, which directly or

[50] 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.

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

4.1.7 Transparency

(104) Member States must publish on a central website, or on a single website retrieving information from several websites (for example, regional websites), at least the following information on the State aid schemes: the full text of the notified aid scheme and its implementing provisions, the granting authority, the names of the individual beneficiaries the form (the aid instrument) and amount of aid granted to each beneficiary, the type of beneficiary (SME / large undertaking), the region (at NUTS level II) in which the beneficiary is located and the principal economic sector in which the beneficiary has its activities, at NACE group level. These requirements also apply *mutatis mutandis* to ad hoc aid. Such information must be published after the granting decision has been taken, must be kept for at least 10 years and shall be available for the general public without restrictions[51].

[51]OJ L 327, 22.12.2000, p. 1.

4.2 Aid to energy from renewable sources

(105) The EU has set ambitious climate change and energy sustainability targets in particular as part of its EU 2020 strategy. Several EU legislative acts already support the achievement of these targets, such as the EU ETS, the Renewable Energy Directive ("RED") and 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 EU objectives and related national targets.

(106) In particular while the EU ETS and CO_2 taxes internalise the costs of greenhouse gas (GHG) emissions, they may not (yet) fully internalise and State aid can thus be a driver for the achievement of the related, but distinct EU objectives for renewable energy. Unless it has evidence on the contrary, the Commission therefore presumes that a residual market failure remains, which aid for renewable energy can address.

(107) 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.

(108) With regard to aid for the production of hydropower it should be noted that their impact can be twofold. On the one hand, they have a positive impact in terms of low GHG emissions and on the other hand it might also have a negative impact on water systems and biodiversity. Therefore, when granting aid to hydropower Member States are reminded to respect 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[52] and in particular Article 4(7) which lays down criteria in relation to allowing new modifications of bodies of water.

(109) 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 4.1 apply.

(110) For operating aid schemes, the general provision of section 4.1 will be applied as modified by the specific provisions as set in this subsection. For individually notified operating aid, conditions set out in section 4.1 apply, where relevant taking into account the modifications made by this subsection for operating aid schemes.

(111) The Commission will authorise aid schemes for a maximum period of ten years. If maintained, such measure should be re-notified after such period.

(112) Aid will only be considered compatible if it is granted to sustainable forms of renewable energy as defined by the EU legislative framework. Aid to biofuels can therefore only be granted in favour of sustainable biofuels[53]. The Commission

[52] OJ L 327, 22.12.2000, p. 1.

[53] References to biofuels in these Guidelines shall also apply to bioliquids.

will consider that the aid does not increase the level of environmental protection and can therefore not be found compatible if the aid is granted for biofuels which are subject to a supply or blending obligation[54], 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.

(113) The Union has set an overall Union target for the share of renewable energy sources in final energy consumption and translated this into mandatory national targets. The Renewable Energy Directive[55] includes cooperation mechanisms[56] 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 minimise costs for Member States whose sole aim is to achieve the national renewables target laid down in EU 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. As a result, the Commission will not require that schemes are open to other EEA or Energy Community countries if Member States have no cooperation mechanism in place or where the cooperation mechanism prevents the use of a competitive process.

(114) 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. In order to ensure the proportionality of the aid and to limit competition distortions as of 1 January 2017 aid should in principle be granted through a competitive bidding process in which all renewable electricity generators can participate. The Commission might, however, at the request of a Member State derogate from the principle of such tendering if the Member State presents justified concerns about its effects as set out in paragraph (119). For installations which are deemed to be of a size where it cannot be presumed that a bidding process is appropriate specific exceptions are included which leaves the inclusion of such installations optional in paragraph (120).

PES tender 2017

I Operating aid granted to energy from renewable sources

Aid for electricity from renewable energy sources

(115) Aid for electricity from renewable energy sources will be considered compatible if all the conditions set out in this subsection are fulfilled.

(116) In order to incentivise the market integration of electricity from renewable sources, it is important that beneficiaries sell their electricity directly in the

[54] An obligation to supply biofuels on the market needs to be in force, including a penalty regime.
[55] Directive 2009/28/EC.
[56] Cooperation mechanisms ensure that renewable energy produced in one Member State can count to the target of another Member State.

market and are subject to market obligations. The following conditions apply as of 1.1.2015 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 electricity in the market.

(b) Beneficiaries are subject to standard balancing responsibilities, unless no liquid intra-day balancing markets exist.

(c) Aid cannot be granted if market prices are negative[57].

(117) The conditions of point (116) do not apply to installations with an installed electricity capacity of less than 500 kW, except for electricity from wind energy where an installed electricity capacity of 3 MW or 3 generation units applies.

(118) 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 is granted in a genuinely competitive bidding process on the basis of clear, transparent and non-discriminatory criteria. During this transitional period, the bidding process does not have to be open to all generators producing electricity from renewable energy sources on a non-discriminatory basis.

(119) As of 1 January 2017, the following conditions apply for granting aid to new installations generating electricity from renewable energy sources:

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

i Member States demonstrate that only one or a very limited number of projects/sites could be eligible;

ii Member States demonstrate that a competitive bidding process would lead to higher support levels (e.g. to avoid strategic bidding);

iii Member States demonstrate that a competitive bidding process would result in low project realisation rates (avoid underbidding).

(b) All generators producing electricity from renewable energy sources can bid for the aid on a non-discriminatory basis, unless Member States demonstrate that this would lead to a suboptimal result which cannot be addressed in the process design[58] in view in particular:

i The longer-term potential of a given new and innovative technology;

ii The need to achieve diversification;

iii Network constraints and grid stability;

[57] The occurrence of negative prices is a rare event.

[58] In particular, the process design should avoid that cheap technologies receive the clearing price of more expensive technologies.

iv System (integration) costs.

v The effects of supporting biomass on the raw material markets. Member States may exclude or limit electricity generation using biomass from the bidding process without any further justification. No other operating aid may be granted to new installations generating electricity from biomass if excluded from the bidding process.

(120) Aid may be granted without a competitive bidding process as described in point (119) to installations with an installed electricity capacity of less than [1] MW, except for electricity from wind energy where such competitive bidding process is not mandatory for installations with an installed electricity capacity of 6 MW or 6 generation units.

(121) In the absence of a competitive bidding process, the conditions of points (116) and (117) and the conditions for operating aid to energy from renewable energy sources other than electricity as set out in point (124) are applicable.

(122) 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.

(123) 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.

Aid for energy from renewable sources other than electricity.

(124) For energy from renewable sources other than electricity, operating aid will be considered compatible if each of the following conditions are met:

(a) The aid per unit of energy does not exceed the difference between the total levelized costs of producing energy (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 at least every year.

(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.

Aid for existing biomass plants after plant depreciation

(125) Unlike most other renewable sources of energy, biomass requires relatively low investment costs but higher variable operating costs. Higher operating costs may prevent a biomass[59] plant from operating even after depreciation of the installation as the variable operating costs can be higher than the marginal revenues. On the other hand, an existing plant may operate by using fossil fuel instead of biomass as an input source if the use of fossil fuel as an input is more economically advantageous than the use of biomass. To preserve the use of biomass in both cases, the Commission may find aid to be compatible.

(126) The Commission will consider operating aid for biomass[60] after plant depreciation compatible if a Member State demonstrates that the variable operating costs borne by the beneficiary after plant depreciation are still higher than the market price of the energy concerned and provided that all the following conditions are met:

(a) The aid is only granted on the basis of the energy produced from renewable sources.

(b) The measure is designed such that it compensates the difference in variable operating costs borne by the beneficiary and the market price.

(c) A monitoring mechanism is in place to verify whether the variable operating costs borne are still higher than the market price of energy. The monitoring mechanism needs to be based on updated production cost information and take place at least on an annual basis.

(127) The Commission will consider operating aid for biomass after plant depreciation compatible if a Member State demonstrates that the use of fossil fuels as an input is more economically advantageous than the use of biomass and provided that all the following conditions are met:

(a) The aid is only granted on the basis of the energy produced from renewable sources.

(b) The measure is designed to such that it compensates the difference in variable operating costs borne by the beneficiary and the market price.

(c) Credible evidence is provided that without the aid a switch from the use of biomass to fossil fuels would take place.

(d) A monitoring mechanism is in place to verify that the use of fossil fuels is more beneficial than the use of biomass. The monitoring mechanism needs to be based on updated cost information and take place at least on an annual basis.

[59] This includes the production of biogas which has the same characteristics.
[60] This includes sustainable biofuels.

II Aid granted by way of certificates

(128) Member States may grant support for renewable energy sources by using market mechanisms such as green certificates. These market mechanisms[61] 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.

(129) The Commission will consider this aid compatible 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 for individual less deployed technologies in so far as banding is introduced and (iii) does not dissuade renewable energy producers from becoming more competitive.

(130) The Commission considers in particular that no differentiation in support levels through green certificates may be applied unless a Member States demonstrates the need for a differentiation on the basis of the justifications set out in point (119). The conditions set out in point (116) and (117) apply when technically possible. Any investment aid previously received must be deducted from the operating aid.

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

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

(131) The EU has set the objective of saving 20% of the Union's primary energy consumption by 2020. In particular the EU adopted the Energy Efficiency Directive (hereafter: EED) [62] 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 that date.

Common objective

(132) By way of derogation from section 4.1.1, in order to ensure that aid contributes to a higher level of environmental protection, aid for district heating and district cooling and cogeneration of heat and electricity (hereafter: CHP) will only be compatible if granted to high-efficient CHP and energy-efficient district heating and district cooling. For measures co-financed by the European Structural and Investments Funds, Member States may base themselves on the reasoning in the relevant Operational Programmes.

(133) One core principle of EU legislation on waste is the so-called waste hierarchy which prioritises the ways in which waste should be treated[63]. 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 this principle.

(134) To demonstrate the contribution of an individually notified aid to an increased level of environmental protection, the Member State may use, as much as possible in quantifiable terms, a variety of indicators, in particular the 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.

Need for State aid

(135) Energy-efficiency measures target negative externalities as set out in point (35) by creating individual incentives to attain environmental targets for energy-efficiency and for the reduction of greenhouse gas emissions. One particular market failure which may arise in the field of energy-efficiency measures concerns energy-efficiency measures in buildings. When renovation works in buildings are considered, the benefits of energy efficiency measures do typically not accrue with the building owner which generally bears the renovation costs, but with the tenant. The Commission therefore considers that State aid may be needed to promote investments in energy-efficiency in order to meet the targets of the EED.

Incentive effect

---

[62] 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.

[63] 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.

(136) The incentive effect of the aid will be assessed on the basis of the conditions set out in Section 4.1 of these Guidelines.

(137) With respect to the EED, the Commission recalls that this Directive puts an obligation on Member States to achieve targets including in the energy-efficient renovation of buildings and in final energy consumptions.. However, an energy audit is mandatory only for enterprises that are not a SME under the EED. Therefore, State aid can be granted to SMEs for carrying out the energy audit. This is without prejudice to the assessment of the incentive effect of State aid for energy-efficiency measures prescribed by or carried out as a result of the energy audit or those resulting from other tools, such as energy management systems and environmental management systems.

Appropriateness

(138) State aid may be considered an appropriate instrument to finance energy-efficiency measures. 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.

(139) 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.

Proportionality

Investment aid

(140) The eligible costs are determined as the extra investment costs as set out in point (72)). For energy-efficiency measures, the counterfactual can be difficult to establish in particular 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 point (74).

(141) The aid intensities as set out in Annex 1 will apply.

Operating aid for energy-efficiency measures

(142) By way of derogation to section 4.1.5, the Commission will consider operating aid for energy-efficiency to be proportionate only if the following conditions are met:

(a) the aid is limited to compensating for net extra production costs resulting from the investment, taking account of benefits resulting from energy saving[64]. In determining the amount of operating aid, any investment aid granted to the undertaking in question in respect of the new plant must be deducted from production costs.

(b) The operating aid is subject to a limited duration of five years.

Operating aid for high energy efficient CHP

(143) Operating aid for high efficient cogeneration plants may be granted:

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

(a) to undertakings distributing electric power and heat to the public where the costs of producing such electric power or heat exceed its market price.;

(b) for the industrial use of the combined production of electric power and heat where it can be shown that the production cost of one unit of energy using that technique exceeds the market price of one unit of conventional energy.

(144) Operating aid to support the production from new CHP may be granted on the basis of the conditions applying to operating aid for electricity from renewable energy sources as set out in section 4.2.

4.4 Aid for resource efficiency and in particular aid to waste management

4.4.1. Resource Efficiency

(145) 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. It sets out how such growth can be achieved while at the same time reducing resource use and limiting the overall environmental impact.

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

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

(148) 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-innovations bonus as set out in point (77).

4.4.2 Aid to waste management

(149) More specifically, the prevention, re-use and recycling of waste has been identified in the EU's Seventh Environment Action Programme as one of its top priorities. One core principle of EU legislation on waste is the so-called waste hierarchy which prioritises the ways in which waste should be treated[65]. Another key concept is the "polluter pays" principle (PPP), described in point (44), according to which undertakings are made to bear the costs of the environmental harm resulting from their activities.

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

(151) By way of derogation from points (31) *et seq.*, 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;

[65] 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.

(b) the aid does not indirectly relieve the polluters from a burden that should be borne by them under Union law, or from a burden that should be considered a normal company cost for the polluters;

(c) the investment goes beyond the state of the art[66] 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.

(152) Aid which, unlike specified in point (151)(a), is intended for the management of the beneficiary's own waste will be assessed on the basis of the general criteria in section 4.1 applicable to aid for undertakings going beyond Union standards or increasing environmental protection in the absence of Union standards in the sense of point (29)(c).

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

4.5 Aid to Carbon Capture and Storage (CCS)

(153) As recognised by the CCS Directive[67] and the Commission Communication on the future of CCS in Europe[68], carbon capture and storage (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 can 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 and storage is an important barrier to the uptake of CCS, State aid can have a part to play in fostering the development of this technology.

(154) The aid may be provided to support fossil fuel and or biomass power plants or other industrial installations equipped with CO_2 capture, transport and storage facilities, or individual elements of the CCS chain. Both operating and investment aid is permitted.

(155) While the EU has taken several initiatives to address negative externalities, those initiatives may not result in an efficient market outcome. In particular the EU ETS and national CO2 taxes internalise the costs of greenhouse gas (GHG) emissions, which however may not (yet) ensure the achievement of the EU's long term decarbonisation objectives. By way of derogation from section 4.1.2, the Commission therefore presumes that for the time being the aid for CCS addresses a residual market failure, unless it has evidence that such remaining market failure no longer exists.

(156) By way of derogation from section 4.1.1, in order to promote the long term decarbonisation objectives, the Commission considers that the aid contributes to the common objective of environmental protection. By way of derogation from section 4.1.3, and without prejudice in particular to EU regulation in this field, the Commission will presume the appropriateness of aid provided all other conditions are met.

(157) Aid to support CCS projects does not include aid for the CO_2 emitting installation (industrial installations or power plants) as such, but only aid related to additional costs for capture, transport and store the CO_2 emitted. Therefore, by way of derogation from section 4.1.5, it is generally accepted that the counterfactual scenario would consist in a situation where the project is not carried out. In view of this counterfactual scenario, the eligible costs are defined as the funding gap. All revenues, including for instance cost savings from a reduced need for ETS allowances, NER300 and EEPR funding are taken into account[69].

(158) The Commission will assess the distortive effects of the aid on the basis of the criteria laid down in section 4.1.6 taking into account the following positive elements: whether any knowledge sharing arrangements are in place, whether the infrastructure is open to third parties and whether the support to individual elements of the CCS chain has a positive impact on other fossil fuel installations owned by the beneficiary.

---

[67] 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.

[68] COM(2013) 180 final, 27.03.2013

[69] Commission Decision 2010/670/EU (NER300 funding) and Regulation 2010/1233/EU amending Regulation 2009/663/EC (EEPR funding).

4.6 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

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

(159) Environmental taxes are imposed in order to increase the costs of environmentally harmful behaviour, thereby discouraging such behaviour and increasing the level of environmental protection. In principle, environmental taxes should reflect the social costs of emissions, and correspondingly, the amount of tax paid per unit of emission should be the same for all emitting firms. While reductions in or exemptions from environmental taxes may adversely impact on this objective, Member States may deem them necessary in some cases to set generally higher tax levels and avoid that as a result of the environmental taxes in question, firms which are particularly affected by the tax are placed in a difficult competitive situation[70].

(160) Indeed, a generally higher level of environmental taxes may be facilitated by granting a more favourable tax treatment to some undertakings. Accordingly, reductions in or exemptions from environmental taxes[71] (including exemptions environmental taxes and refunds) can at least indirectly contribute to a higher level of environmental protection. However, the overall objective of the environmental tax to environmentally harmful behaviour should not be undermined. The tax reductions should be necessary and based on objective, transparent and non-discriminatory criteria, and the undertakings concerned should make a contribution to increasing environmental protection. One way to do so would be to grant 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

(161) This section will not apply to aid granted in the form of tax reductions to support environmentally friendly investments covered by other sections of these Guidelines such as to support energy from renewable sources or cogeneration of heat and power. Such aid will be assessed under the specific sections of these guidelines for those technologies.

(162) The Commission will authorize aid schemes for maximum periods of [ten] years. After such period a Member State can re-notify the measure if the Member State re-evaluates the appropriateness of the aid measures concerned.

(163) The Commission will consider that tax reductions do not undermine the general objective pursued and contribute at least indirectly to an increased level environmental protection if a Member State demonstrates that (i) the reductions

---

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

[71] 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.

are well targeted to undertakings being mostly affected by a higher tax and (ii) that a higher tax rate is generally applicable.

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

Situation 1: Harmonised environmental taxes

(165) The Commission will consider aid in the form of tax reductions necessary and proportional provided the beneficiaries pay at least the EU minimum tax level set by the relevant applicable Directive and that the choice of beneficiaries is based on objective and transparent criteria, and the aid is granted in principle in the same way for all competitors in the same sector or relevant market[72] if they are in a similar factual situation. 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 intended to be given by the environmental tax

(166) If the beneficiaries pay less than the EU minimum tax level set by the relevant applicable Directive, the aid will be assessed on the basis of the conditions for non-harmonised environmental taxes as set out in points (167) to (171).

Situation 2: Non-harmonised environmental taxes

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

(168) Therefore, if the tax referred to in point (167) is designed in such a way that it is directly linked to the EU ETS allowance price and aims to increase the allowance price, compensation for these higher indirect costs may be considered. The Commission will consider the measure compatible only if

(a) the aid is only granted to sectors and subsectors listed in Annex II of the ETS State Aid Guidelines[73] to compensate for additional indirect cost resulting from the tax.

(b) the aid intensity and maximum aid intensities are calculated as defined in point 27 – 30 of the ETS State Aid Guidelines. The EUA forward price can be replaced by the level of the national tax. Aid should be granted as a lump sum amount that can be paid to the beneficiary in the year in

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

[73] OJ C 158/4, 05.06.2012

which the costs are incurred or in the following year. If the aid is paid in the year in which the costs are incurred an ex post monitoring mechanism needs to be in place to ensure that any over-payment of aid will be repaid before 1 July of the following year.

(169) For all other non-harmonised environmental taxes, in order to demonstrate the necessity and proportionality of the aid, a Member State should clearly define the scope of the tax reductions. For this purpose, a Member State should provide information about the sectors or categories of beneficiaries covered by the tax reduction and on the main beneficiaries in each sector or category concerned taking into account notably the turnover, market shares and the size of the tax base. Member States may decide to grant aid beneficiaries aid in the form of a fixed annual compensation amount (tax refund). This approach continues to expose aid beneficiaries to the price signal intended to be given by the environmental tax, while limiting the anticipated increase in the tax amount payable.

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

(a) the choice of beneficiaries is based on objective and transparent criteria, and the aid is granted in principle in the same way for all competitors in the same sector or relevant market[74] if they are in a similar factual situation;

(b) the environmental tax without the reduction leads to a substantial increase in production costs calculated as a proportion of the gross value added for each sector or category of individual beneficiaries;

(c) the substantial increase in production costs could not be passed on to customers without leading to important sales reductions[75].

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

(a) aid beneficiaries pay at least 20 % of the national environmental tax;

(b) the tax reduction is conditional on the conclusion of agreements between the Member State and the beneficiaries or associations of beneficiaries whereby the beneficiaries or associations of beneficiaries commit themselves to achieve environmental protection objectives which have the same effect as if beneficiaries pay at least 20% of the national tax or if the EU minimum tax level were applied. Such agreements or commitments may relate, among other things, to a reduction in energy

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

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

consumption, a reduction in emissions or any other environmental measure and satisfy the following conditions:

i the substance of the agreements is negotiated by the Member State, specifies the targets and fixes a time schedule for reaching the targets;

ii the Member State ensures independent[76] and timely monitoring of the commitments concluded in those agreements;

iii those agreements are revised periodically in the light of technological and other developments and stipulate effective penalty arrangements applicable if the commitments are not met.

4.6.2. Aid in the form of reductions in funding support for electricity from renewable sources[77]

(172) 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. These 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 prices may be explicit through a specific charge which is levied from electricity consumers on top of the electricity price or indirectly through additional costs faced by electricity suppliers due to obligations to buy renewable energy which are subsequently passed on to their customers, the electricity consumers. A typical example would be the mandatory purchase by electricity suppliers of a certain percentage of renewable energy through green certificates for which the supplier is not compensated.

(173) In principle, 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 reductions may be needed to secure a sufficient financing base for renewable energy support[78]. In order to avoid that undertakings particularly affected by the funding of renewable energy support are put in a difficult competitive situation, Member States may wish to grant partial compensation for additional costs so as to facilitate the overall funding of support to energy from renewable sources. With no compensation to particularly affected undertakings, public acceptance of setting up ambitious renewable energy support measures may be limited. On the other

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

[77] 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[77], 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[77] and the subsequent network codes and guidelines), does not give right to cross-subsidisation of consumers witihn the tarriff regimes.

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

hand, if such compensation is too high or awarded to too many electricity consumers, public acceptance for renewable energy support may be equally hampered.

(174) 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 4.1.7.

(175) 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[79].

(176) The aid should be limited to sectors that are exposed to a risk to their competitive position due to the burden 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 company belongs to the sectors listed in Annex 3[80]. In addition, to account for the fact that certain sectors might be heterogeneous in terms of electro-intensity, a Member State can include companies in its national scheme granting reductions from costs resulting from renewable support if the undertaking has an electro-intensity of at least 25% and belongs to a sector with a trade intensity of at least 4% at EU level, even if it does not belong to a sector listed in Annex 3.

(177) 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 or relevant market[81] if they are in a similar factual situation.

(178) The Commission will consider the aid to be proportionate if the aid beneficiaries pay at least 20 % of the additional costs without reduction.

(179) However, given the important increase of renewable surcharges in recent years, an own contribution of 20% 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 renewable surcharges to be paid at undertaking level at 5% of the gross value

[79] 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.

[80] 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 25% 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.

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

added of the undertaking concerned. For undertakings having an electro-intensity of at least 20%, Member States can limit the overall amount to be paid at 2.5% of the gross value added of the undertaking concerned.

(180) [To avoid an abrupt transition from one surcharge system to another, Member States can phase in the eligibility and proportionality rules set out under section 4.6.2 in accordance with a transition period.]

(181) When Member States decide to adopt the limitations of respectively 5% and 2.5% of gross value added, these limitations must apply to all eligible undertakings.

(182) Member States may take measures to ensure that gross value added data used for the purpose of Section 4.6.2 of these Guidelines cover all the relevant labour costs.

(183) Member States can grant the aid in the form of a reduction from charges or preferably as a lump sum amount 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 in place to ensure that any over-payment of aid will be repaid before 1 July of the following year.

4.7 Aid to energy infrastructure

(184) A modern energy infrastructure is crucial for an integrated energy market 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 importance up to 2020 at about EUR 200 billion[82]. This assessment was based on an evaluation of the infrastructure needed to allow Europe to meet the overarching policy objectives of completing the internal energy market, ensuring security of supply and enabling the integration of renewable sources of energy. Where market operators cannot deliver the infrastructure needed, State aid may be necessary in order to overcome market failures and to ensure that the Union's considerable infrastructure needs are met. This is particularly true for infrastructure projects having a cross-border impact or contributing to regional cohesion.

4.7.1. Objective of common interest

(185) Energy infrastructure is a precondition for a functioning internal market. Aid to energy infrastructure therefore strengthens the internal energy market. It enhances for example system stability, generation adequacy, the integration of different energy sources and energy supply in under-developed networks. By way of derogation from section 4.1.1, the Commission therefore considers that aid to energy infrastructure is beneficial to the internal market and thus fulfils an objective of common interest.

4.7.2 Need for State intervention

(186) 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.

(187) To address such market failures, energy infrastructure is typically subject to tariff and access regulation and to unbundling requirements according to internal energy market legislation ("internal market regulation").[83]

---

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

[83] 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 and repealing Directive 2003/54/EC; Directive 2009/73/EC of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC; 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 and repealing Regulation (EC) No 1228/2003; and Regulation (EC) No 715/2009 of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005.

(188) In terms of financing, a way of overcoming the market failure other than by means of compulsory user tariffs is in principle the granting of State aid. Therefore, for the demonstration of the need of State intervention in the field of energy infrastructure, by way of derogation from section 4.1.2, the principles described in points (189) to (191) apply.

(189) The Commission considers that for Projects of Common Interest as defined on the basis of Regulation 347/2013[84] and for infrastructure investments in assisted regions the market failures in terms of positive externalities and coordination problems are such that tariff financing may not be sufficient and State aid may be granted.

(190) For energy infrastructure projects falling under point (189) and partially exempted from internal market regulation, and for projects not falling under point (189), the Commission will carry out a case-by-case assessment of the need for State aid considering to what extent a market failure leads to a sub-optimal provision of the necessary infrastructure.

(191) For oil infrastructure projects, for electricity storage projects, for gas storage projects, and for projects fully exempted from internal market regulation, in particular third party access and tariff regulation, the Commission presumes that there is no need for State aid. However Member States may grant State aid in exceptional circumstances where duly justified.

4.7.3 Appropriateness

(192) The Commission considers that tariffs[85] are the appropriate primary means to fund energy infrastructure. However, in the case of Projects of Common Interest and in assisted regions, State aid may be considered an appropriate instrument to (partially) finance such infrastructure. In such cases, the 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 to act as a deterrent to investment or to potential customers to use the infrastructure.

4.7.4 Incentive effect

(193) The incentive effect of the aid will be assessed on the basis of the conditions set out in section 4.1 of these Guidelines.

4.7.5 Proportionality

(194) By way of derogation from section 4.1.5, the aid amount must be limited to the minimum needed to achieve the infrastructure objectives sought. For aid to infrastructure, the counterfactual scenario is presumed to be the situation in which the project does not take place. The eligible cost is therefore the funding gap.

---

[84] Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure.

[85] 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.

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

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

4.7.6. Avoidance of negative effects on competition and trade

(197) By way of derogation from section 4.1.6, in view of the existing requirements under the internal market regulation which are aimed at strengthening competition, the Commission will consider that aid for energy infrastructure subject to internal market regulation does not have undue distortive effects.

(198) In the case of infrastructure exempted from, or not subject to, internal market regulation and in the case of gas storage, the Commission will carry out a case-by-case assessment of the potential distortions of competition taking into account for example the degree of third party access to the aided infrastructure, access to alternative infrastructure and the market share of the beneficiary.

4.8 Aid for generation adequacy

(199) 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. This shift raises new challenges for ensuring generation adequacy.

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

(201) As a result, some Member States consider to introduce measures to ensure generation adequacy, typically by granting generators support for the mere availability of generation capacity.[86]

4.8.1 Objective of common interest

(202) Measures to ensure generation adequacy can be designed in a variety of ways, in the form of investment and operating aid, and pursue different objectives. They may for example aim at addressing short-term concerns of 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.

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

(204) Notwithstanding the rules set out in section 4.1.1, 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 in accordance with the internal energy market legislation.

4.8.2 Need for State aid

(205) By way of derogation from section 4.1.2, 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

[86] 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 and in the associated staff working document Generation Adequacy in the internal electricity market - guidance on public interventions.

quantification should be described and its method of calculation should be provided.

(206) The Member State 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, including, for example, the development of market coupling, intraday markets, balancing markets and ancillary services markets and storage of electricity.

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

(a) Assessment of generation adequacy consistent with the currently used standards.[87]

(b) Assessment of the impact of variable generation, including from neighbouring systems.

(c) Assessment of the impact of demand-side participation, including a description of measures to encourage demand side management.[88]

(d) Assessment of the actual or potential existence of interconnectors, including a description of projects under construction and planned.

(e) 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.

4.8.3 Appropriateness

(208) By way of derogation from section 8.1.3, the aid should remunerate solely the service of pure availability (remuneration per MW) provided by the generation operator, and should not include any remuneration for the sale of electricity (remuneration per MWh).

(209) The measure should be open to 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.

---

[87] The ENTSO-E methodology, developed by the European association of Transmission System Operators, in its assessments of EU-level generation adequacy, can be considered an EU standard in this respect.

[88] 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.

(210) The measure should in principle not reward investments in generation from fossil fuel plants unless it can be shown that a less harmful alternative to achieve generation adequacy does not exist.

4.8.4 Incentive effect

(211) The incentive effect of the aid will be assessed on the basis of the conditions set out in section 4.1 of these Guidelines.

4.8.5 Proportionality

(212) By way of derogation from section 4.1.5, the overall amount of aid should be calculated in a way which implies, or results in, beneficiaries earning a rate of return which can be considered reasonable.

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

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

(215) 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.

4.8.6 Avoidance of negative effects

(216) By way of derogation from section 4.1.6, 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 by generators using different technologies and by operators offering measures with equivalent technical performance (e.g. demand side management, interconnectors and storage). Without prejudice to paragraph 212, the restriction on participation can only be justified based on insufficient technical performance required to address the generation adequacy problem. Moreover, the mechanism should be open to potential aggregation of both demand and supply;

(b) The participation by operators from other Member States where such participation is physically possible in particular in the regional context, i.e. 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;

(c) Participation by 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.

(217) 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 predated 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.

4.9 Aid in the form of tradable permit schemes

(218) A specific form of aid can be tradable permit schemes which may 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 individual level of each undertaking, if the allowances granted do not cover the totality of expected needs of the undertaking, the undertaking must either reduce its pollution, thus contributing to the improvement of the level of environmental protection, or buy supplementary allowances on the market, thus paying a compensation for its pollution.

(219) By way of derogation from section 4.1, tradable permit schemes will be considered to be compatible 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 the situation in absence of 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) in particular, new entrants shall not in principle 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.

(220) 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/relevant market 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 important sales reductions. This analysis may be conducted on the basis of estimations of inter alia the product

price elasticity of the sector concerned. These estimations will be made in the relevant geographic market. 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) it is not possible for individual undertakings in the sector 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 (hereafter "EEA") and using it 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 shall benefit from a lower allowance, proportionate to its environmental performance;

5. Evaluation

(221) To further ensure that distortion of competition are limited, the Commission may require that certain schemes are subject to a time limitation (of normally 4 years or less) and to an evaluation.

(222) Evaluations will be carried out for schemes where the potential distortion of competition is particularly high, i.e. that may risk to significantly restrict or distort competition if their implementation is not reviewed in due time.

(223) 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.

(224) The evaluation shall be carried out by an expert independent from the State aid granting authority on the basis of a common methodology[89] and shall be made public. The evaluation shall be submitted to the Commission in due time to allow for the assessment of the possible prolongation of the aid measure and in any case upon expiry of the scheme.

6. Applicability of the Environmental and Energy Aid Guidelines

(225) These Guidelines will enter into force on 1 July 2014 and will replace the Guidelines on State aid for environmental protection published on 1 April 2008[90]. These Guidelines will be applicable until 31 December 2020.

(226) 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 entry into force, 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.

(227) Unlawful environmental aid or energy aid will be assessed in accordance with the rules in force at the date on which the aid was granted in accordance with the Commission notice on the determination of the applicable rules for the assessment of unlawful State aid[91] 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 section 5.7 as from 23 October 2003, such date being the deadline for bringing into force the transposition measures for the first Directive 2001/77/EC.

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

---

[89] Such a common methodology may be provided by the Commission.
[90] OJ C 82/1, 1.4.2008 hereafter.
[91] OJ C 119/22, 22.05.2002

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

Where necessary, existing aid schemes within the meaning of Article 1(b) of Regulation 659/1999 concerning operating aid in support of energy from renewable sources 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[92] them.

However, 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

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

7. Reporting and monitoring

(230) In accordance with Council Regulation (EC) No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 of the EC Treaty and Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Regulation (EC) No 659/1999[93] or any regulations replacing those regulations, Member States must submit annual reports to the Commission

(231) 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.

8. Revision

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

[92] A change is any notifiable change within the meaning of Article 1(c) of Regulation 659/1999.
[93] OJ L 140/1, 30.04.2004

Annex 1 Aid intensities for investment aid as a part of the eligible costs

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

	Small enterprise	Medium-sized enterprise	Large enterprise
Aid for undertakings going beyond Union standards or increasing the level of environmental protection in the absence of Union standards (incl. transport vehicles)	[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 between 1 and 3 years before the entry into force	 [20] % [15]%	 [15] % [10] %	 [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 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]%
To the aid intensities mentioned above may be increased by a bonus of [5]% point in regions covered by Article 107(3)c or by a bonus of [15]% in regions covered by Article 107(3)a Treaty up to a maximum of 100% aid intensity.			

Annex 2 Typical State interventions

(1) The Commission considers typical examples 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 / Eligible costs**[94]
CHP	The investment costs for the additional equipment needed for the installation to operate as a high-efficiency cogeneration installation
Environmental Studies[95]	The eligible costs are the costs of the studies.
Remediation contaminated sites	The costs incurred[96] for the remediation work, less the increase in the value of the land[97].
District heating and cooling	The investment costs for the construction, expansion, refurbishment of one or more generation units which shall be an integral part of the efficient district heating and cooling system.
Waste management[98]	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[99]
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 counterfactual is a conventional power plant with the same capacity in terms of the effective production of energy.
RES heating	The counterfactual is 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	In principle as a counterfactual the refinery should be chosen. However, if the aid is limited to the upgrading of biogas, the counterfactual constitutes the alternative use of these biogas (including burning).
Biofuels and biogas used for transport	In principle as a counterfactual the refinery should be chosen, but the Commission can accept alternative counterfactuals if duly justified.
Making use of industrial by-	If the by-product would go wasted unless reused: the

[94] The Commission may accept alternative counterfactual situations if duly justified by the Member State.

[95] This includes aid for energy-efficiency audits.

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

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

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

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

products	eligible cost is the extra investment necessary to use the by product (for instance heat exchanger in the case of waste heat). If the by-product would need to be disposed: the counterfactual investment is the disposal of the waste.
Aid involved in tradable permit schemes	Proportionality needs to be demonstrated by the absence of over-allocation.

Annex 3 List of eligible sectors under section 4.6.2

NACE	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
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
2351	Manufacture of cement
2352	Manufacture of lime and plaster
2450/2451/ 2452/2453	Casting of iron, steel, light metals and other non-ferrous metals
2611	Manufacture of electronic components