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Guidelines on State aid for environmental protection and energy for 2014-2020

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Executive Summary Sheet

Impact assessment of the Guidelines on State aid for environmental protection and energy for 2014-2020

A. Need for action

Why? What is the problem being addressed?

Granting State aid is in principle incompatible with the internal market. The EU Treaty provides however for exemptions. The objective of State aid control is to ensure that government interventions do not unduly distort competition and trade inside the EU. State aid control is an exclusive competence of the Commission. The Environmental Aid Guidelines (EAG) provide the compatibility criteria for environmental aid. Member States can also grant environmental aid under the General Block Exemption Regulation (GBER). This Regulation allows Member States to grant aid without the need to notify the measure in advance. The scope of GBER is limited to measures with limited effects on competition. The EAG 2008-2014 will expire at the end of 2014. On the basis of the problems identified in achieving the 2020 energy & climate targets and the state aid policy objectives laid down in the State Aid Modernisation (SAM) strategy, this review addresses the following four, largely independent, problems:

- State aid rules for support schemes to electricity from renewable energy sources (RES-e) do not prevent cost-inefficiencies and undue market distortions.
- Financing the support to electricity from renewable energy sources may lead to higher retail energy prices, which may increase pressure on Member States to exempt certain undertakings from the costs of financing renewable energy
- Insufficient level of generation adequacy
- The scope and criteria in EAG and GBER: Unnecessary ex-ante scrutiny of certain measures with little impact on competition and diverging criteria across State aid rules

What is this initiative expected to achieve?

The general objective of the review is to help achieving the Union's environmental and energy policy objectives while ensuring an effective and efficient State aid control. The review aims specifically to:

- Assist in achieving the 2020 renewable energy targets while minimising the distortive effects of support schemes.
- Minimise distortions to competition and trade resulting from the financing of support schemes to renewable energy sources, while limiting negative impacts on the competitiveness of EU firms.
- Contribute to ensuring the required generation adequacy level of the Union's energy system while minimising competition distortions.
- Focus on the measures with the largest potential to cause competition distortions. Streamline, clarify and align the rules with the common assessment principles agreed in the SAM Strategy

What is the value added of action at the EU level?

The EU Treaty gives the exclusive competence for assessing the compatibility of state aid to the Commission.

B. Solutions

What legislative and non-legislative policy options have been considered? Is there a preferred choice or not? Why?

Without the compatibility criteria laid down in the Guidelines, the Commission would have to assess aid notifications on a case-by-case basis in direct application of Article 107(3)(b) and (c) of the EU Treaty. This situation would not provide the necessary legal certainty or predictability, and the absence of rules could lead to subsidy races between Member States that would damage trade and competition within the internal market. It is therefore proposed to issue Guidelines before the existing ones expire in 2014. The options for the scope and the compatibility criteria are structured into the four policy areas presented below.

1. Support schemes to promote electricity from renewable energy sources
2. Exemptions and reductions from RES financing
3. Aid to measures to ensure generation adequacy
4. Aligning and streamlining the rules

The options in each policy area weigh the achievement of environmental and energy objectives against the objective of minimising competition distortions. The options in the first policy area propose varying degrees of promoting the cost-efficiency of supporting schemes and the minimisation of their distortive effects on competition. Options in the second policy area analyse different methodologies and thresholds to identify and compensate the sectors whose competitiveness would be particularly affected

by an increase in RES charges in electricity prices. Options in the third policy area propose different degrees of tightening the compatibility criteria for generation adequacy measures. Options in the last policy area examine different degrees of simplification.

Who supports which option?

In the Policy area 1, Member States, RES-e producers and environmental organisations favour the least competitive options or request sufficient flexibility to opt out. Stakeholders representing the conventional industry favour the most competitive options.
In Policy area 2, Member States and industrial stakeholders largely favour the options proposing electricity intensity as an eligibility criteria as well as flexible approaches to determine the proportionality of the aid.
In Policy area 3, several stakeholders favour the baseline arguing that there is insufficient case practice to establish rules. Conventional electricity producers favour the competitive options but are against criteria different than price (e.g. environmental).
In Policy area 4, most stakeholders favoured the option that increases the scope of GBER and that aligns the compatibility criteria across state aid rules

C. Impacts of the preferred option

What are the benefits of the preferred option (if any, otherwise main ones)?

Policy area 1: The main benefit is overall cost reductions and therefore the main beneficiaries are energy consumers.
Policy area 2: The main benefit is to prevent relocation of industrial sectors sensitive to additional charges in electricity prices
Policy area 3: The main benefit is to ensure the adequacy of generation at the lowest cost and minimising the distortion of investment price signals in the electricity market.
Policy area 4: The main benefit is the simplification of the rules. Member States will grant aid faster and therefore will be positive to the beneficiaries of the aid.

What are the costs of the preferred option (if any, otherwise main ones)?

Member States will enjoy large discretion to design the measures. If well designed, the costs of for instance setting competitive bidding processes will be outweighed by the cost savings through lower levels of support.

How will businesses, SMEs and micro-enterprises be affected?

Policy area 1: SMEs will be largely unaffected as small installations are exempted. Large RES-e producers will focus on cost-efficient technologies. The flexibility of the preferred option will also allow promoting immature technologies.
Policy area 2: The preferred option will lead to the exemptions of RES charges to large energy consumers. In turn other consumers (SMEs or micro enterprises) may need to cover the difference unless Member States choose other means of financing RES.
Policy area 3: The measure will benefit electricity producers, demand-side management (DSM) providers and infrastructure operators. Except for DSM providers, those operators tend to be large companies.
Policy area 4: Faster granting of aid will benefit all undertakings

Will there be significant impacts on national budgets and administrations?

The preferred options in areas 1, 3 and 4 should lead to less budgetary constraints than in the baseline. The preferred option in area 2 may however result in increased public expenditure as the exemptions of charges will need to be covered through other funding sources.

D. Follow up

When will the policy be reviewed?

DG Competition will carry out a mid-term review of the EEAG in the first half of 2017 to assess the effects of the EEAG and determine if adjustments are required. DG Competition will also conduct an ex-post evaluation of the EEAG for their revision for the period after 2020. Both tasks will involve consultations of Member States and other interested parties.

1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Organisation and timing

The Environmental Aid Guidelines[1] (EAG) will expire on 31 December 2014. The European Commission formally started the review of EAG on 31 July 2012. The review also comprises the environmental section of the General Block Exemption Regulation[2]. The main steps of the review were as follows:

- A public consultation in the form of a questionnaire from 31 July 2012 to 23 October 2012;
- A paper published 20 March 2013 outlining the main areas for reflection, open for comments until 30 April 2013;
- A workshop with Member States and stakeholders held on 12 April 2012;
- A public consultation on the revised Guidelines between 18 December 2013 and 14 February 2014;
- A second meeting with Member States on 10 February 2014.

The Directorate-General for Competition has led the initiative. Other Commission services were involved in the preparation of this report through an Impact Assessment Steering Group (IASG) composed of representatives of 18 services[3], which was set up in July 2012. Meetings were held on 19 July 2012, 21 March 2013, 26 June 2013 and 13 February 2014.

1.2. Consultation and expertise

The review of the EAG and GBER has been subject to four public consultations.

Annex 2 includes a detailed analysis of the responses received. A summary of the results is provided next.

First public consultation (July - October 2012)

67 responses were received from sixteen Member States and one EEA central government. Four regional authorities and one competition authority also replied. In addition, 59 non-governmental respondents replied, (the majority from representatives from the energy producers and industrial consumers, and a minority from environmental associations).

Most respondents noted that the Environmental Aid Guidelines are still addressing the most important market failures hindering environmental protection and in particular the achievement of EU 2020 objectives.

[1] Community guidelines on State aid for environmental protection. OJ C 082, 01.04.2008 p. 1-33

[2] Commission Regulation (EC) No 800/2008 of 6 August 2008, OJ L 214, 9.8.2008, p. 3-47

[3] DG Climate Action, DG Economic and Financial Affairs, DG Enterprise and Industry, DG Internal Market, DG Health and Consumer Affairs, DG Mobility and Transport, DG Energy, DG Education and Culture, DG Agriculture and Rural Development, DG Environment, DG Employment, Social Affairs and Equal Opportunities, DG Regional and Urban Policy, DG Taxation and Customs Union, DG Trade, DG Maritime Affairs and Fisheries, Joint Research Centre, the Legal Service and the Secretariat-General.

Respondents considered the overall principles of the Guidelines sound: respect to the 'polluter pays' principle and offsetting limited to the additional costs relevant to the environmental measure. They acknowledged that the Guidelines have facilitated the introduction of measures positive for environmental protection.

However, several Member States considered some of the rules are overly complex, in particular the definition of an alternative investment, the eligible expenditure, and the conditions to demonstrate the incentive effect and the necessity of aid. They asked for more guidance and examples.

Second public consultation (Consultation paper and workshop: March - April 2013)

The consultation paper outlined the main areas the Commission was reflecting on, namely, (i) how to come to a harmonisation and simplification of rules, (ii) whether to include ex-ante rules on aid to energy infrastructure, (iii) how to assess aid for system stability and generation adequacy, (iv) how renewable support can be effective and cost efficient and least distortive and (v) whether to include new rules on tax exemptions for financing of support to Renewable Energy Sources (RES).

91 responses were received. In general the consultation paper was seen positively as tackling the right issues. Respondents welcomed the simplification and clarifications of the Guidelines and GBER rules, in particular for the identification of the eligible costs.

On 12 April a workshop was held to discuss the consultation paper. Member States and stakeholders having provided comments in the first public consultation were invited. Over a 100 participants attended. Experts analysed existing renewable energy support schemes. This included an overview on success of EU support schemes and case studies of Member States support schemes.

Both the discussions in the workshop and the replies to the consultation on the issues paper showed wide agreement on the need to better integrate RES into the energy market and make systems more efficient and reduce distortions. There was also broad consensus on continuing support for emerging technologies. The views diverged on what to change. Opinions were split in particular on technology neutrality and on cross border openings of support to RES.

Regarding infrastructure, several respondents to the consultation warned against undermining the energy Regulations and saw very little scope for aid. At the workshop there were presentations on aid to energy infrastructure which confirmed that such aid is not likely to distort competition. However, they also showed that the need for aid might be limited.

Opinions regarding exemptions from environmental taxes, particularly with reference to energy intensive users, were divided. As for capacity mechanisms, respondents gave priority to completing the internal market so that it sends the right price signals; if capacity mechanisms are to be introduced, they should be closely reviewed to avoid market distortions.

Third public consultation (18 December 2013 - 14 February 2014)

The Commission received almost 5000 replies to the third public consultation. The purpose of the consultation was to gather feedback on the revised draft Environmental and Energy Aid

Guidelines (EEAG). A detailed summary is enclosed in Annex 2. The points raised during the consultation are reflected in the different sections of this report.

Consultation on the review of the General Block Exemption Regulation

The first public consultation did not include the environmental provisions.

In the second consultation (March – June 2013) and third public consultation (December 2013 – February 2014) respondents welcomed the inclusion of new energy and environmental categories. Among other specific comments, respondents asked for clarifications on certain definitions or the calculation of eligible costs and requested higher aid intensity thresholds or the removal of certain capacity limits (for instance for high-efficiency cogeneration plants). Regarding aid for the promotion of renewable energy sources, the introduction of a balancing requirement was welcome, but a number of questions were raised regarding competitive bidding processes. The summary of the responses is provided in Annex 2. The responses are available on Europa's website[4]..

1.3. Response to the opinion of the Impact Assessment Board

The Impact Assessment Board (IAB) discussed the draft Impact Assessment report on 12 March 2014 and issued its opinion on 17 March 2014. The draft report was revised to take into account the IAB recommendations. In particular:

- The problem definition section includes additional evidence to back up the reported problems and their magnitude.

- The projected evolution of the problem has been further developed and takes particular account of the ongoing regulatory changes in Member States.

- The intervention logic is presented in a table to clarify the link between problems, objectives and options. The report also clarifies that that the problems –and therefore the associated options and impacts- addressed in the Impact Assessment are largely independent from each. This has simplified the readability of the report.

- Additional text was added to describe in the greater level of detail the policy options. The report also includes further explanations for the design of the options, in particular those related to exemptions from financing renewable energy sources.

- The report attempts to improve the overview of the relevant impacts and in particular to better identify the stakeholders that may benefit from the different proposed options. The choice of impact assessment indicators in chapter 6 is now fully in line with the impacts assessed in chapter 5.

- The contributions from the public consultations have been better integrated throughout the text, notably in the sections problem definition, options, impacts and comparison of the options.

[4] http://ec.europa.eu/competition/consultations/2013_consolidated_gber/index_en.html

2. PROBLEM DEFINITION

2.1. Context

2.1.1. The State aid control policy

A measure constitutes State aid when it fulfils four cumulative criteria: i) it is granted by a Member State or through State resources in any form whatsoever; ii) it distorts or threatens to distort competition; iii) it favours certain undertakings or the production of certain goods and iv) affects trade between Member States.

The granting of State aid is in principle incompatible with the internal market. The Treaty on the Functioning of the European Union ("the Treaty") provides however for some exceptions to the general rule. The application of exemptions to the general prohibition of State aid rests exclusively with the Commission, which possesses strong investigative and decision-making powers. The objective of State aid control is therefore to ensure that government interventions do not unduly distort competition and trade inside the EU. By developing the fundamental rules through a series of acts[5] that provide for a number of exemptions, the Commission applies a system of rules under which State aid is monitored and assessed in the European Union. This framework is regularly reviewed to improve its efficiency and to respond to the call of the European Council for less but better targeted State aid in order to boost the European economy.

The Commission has adopted horizontal and sectoral Guidelines[6] on the interpretation of Article 107 of the Treaty and more generally of State aid rules. The Guidelines codify the approach that will be taken by the Commission in assessing State aid cases.

The Commission adopted on 8 May 2012 a Communication setting out an ambitious strategy for the modernisation of EU state aid control[7] (SAM). Its three objectives are as follows:

- to foster sustainable, smart and inclusive growth in a competitive internal market;
- to focus the Commission's ex ante scrutiny on cases with the biggest impact on the internal market whilst strengthening the Member States cooperation in State aid enforcement;
- to streamline the rules and provide for faster decisions.

The SAM proposes several initiatives to achieve these objectives. The reviews of the de minimis Regulation[8] and of the Global Block Exemption Regulation (GBER)[9] aim at focusing enforcement on cases with the biggest impact. The revision of the enabling Regulation[10] (which empowers the Commission to *inter alia* specify aid compatibility rules for certain categories) and the development of an interpretative note on the notion of State aid should help streamlining rules and should lead to faster decisions. Finally the Commission plans to harmonise in the review of the horizontal and sectorial Guidelines, common compatibility

[5] http://ec.europa.eu/competition/state_aid/legislation/legislation.html
[6] http://ec.europa.eu/competition/state_aid/legislation/horizontal.html and http://ec.europa.eu/competition/state_aid/legislation/specific_rules.html
[7] COM (2012) 209 final
[8] OJ L 379, 28.12.2006, p. 5-10
[9] OJ L 214, 9.8.2008, p. 3-47
[10] OJ L204, 31.07.2013, p. 11 amending OJ L 142, 14.05.1998, p. 1-4

criteria ("common assessment principles"). The first set of Guidelines to make use of common compatibility criteria are the recently adopted Regional Aid Guidelines (RAG)[11].

The Environmental Aid Guidelines (EAG) provide criteria to assess whether State aid measures for environmental protection can be declared compatible with the internal market. First, Member States have to demonstrate that State aid brings environmental benefits. Second, that it is an appropriate instrument, i.e. that the market alone would not have allowed to reach this environmental objective, and that other, less distortive measures such as regulation would not have been as appropriate as State aid; State aid should thus be necessary and proportionate. Third, it should demonstrate that the positive effects of the aid outweigh its negative effects in terms of distortion of competition. The scope of the existing EAG is limited to thirteen categories. The list of categories and principles of the Guidelines are listed and described in Annex 3.

Besides the horizontal and sectorial Guidelines, Member States can also grant aid under the General Block Exemption Regulation (GBER). This Regulation allows Member States to grant aid without the need to notify the measure in advance. Measures are not subjected to an *ex-ante* compatibility assessment by the Commission. The compatibility criteria build from those established in the Guidelines although with stricter aid intensity thresholds to account for the fact that the Commission does not examine ex-ante these measures. The scope of the existing GBER is provided in Annex 3.

Annex 4 shows the breakdown of environmental and energy State aid granted by Member States since 2008. EUR 71 billion were granted between 2008 and 2012, of which 57 billion as non-block exempted State aid (such as under the 2008 EAG) and 14 billion as block exempted State aid. Looking under the 2008 EAG specifically, EUR 10 billion were granted, 8 of which as aid to renewable energy sources (RES) or Combined Heat and Power (CHP). Other categories such as standards (less than EUR 500 million) or decontamination (less than EUR 200 million) represent a smaller share of State aid granted under the 2008 EAG. Most aid was granted in the form of operating aid to renewable energy sources (including aid for the production of biofuels) and to combined heat and power. Germany was the Member States that granted the largest amount of environmental aid (EUR 25 billion) followed by Sweden (EUR 13 billion) and the United Kingdom (EUR 7 billion).

2.1.2. The energy, climate and environmental policy context and the role of State aid

The Europe 2020[12] strategy focuses on creating the conditions for smart, sustainable and inclusive growth. The strategy has five ambitious goals in the areas of employment, innovation, education, poverty reduction and climate/energy. To measure progress in meeting the Europe 2020 goals, headline targets have been agreed for the whole EU. The targets for climate change and energy sustainability are known as the "20-20-20" targets:

- emission target: a 20% reduction in EU greenhouse gas emissions from 1990 levels;
- RES target: raising the share of EU energy consumption produced from renewable resources to 20%;

[11] OJ C209, 23.07.2013, p. 1–45
[12] COM(2010) 2020 final of 3.3.2010

- efficiency target: a 20% improvement in the EU's energy efficiency.

These targets represent an integrated approach to climate and energy policy that aims to combat climate change, increase the EU's energy security and strengthen its competitiveness. The EU has in place a comprehensive regulatory and policy framework to meet these objectives. In particular, the emission and RES targets are legally binding and translate into national annual targets per Member State until 2020. Failure to reach the national binding targets by a Member State might result in infringement measures initiated by the Commission.

The Commission carried out an analysis of the results of the 2020 energy and climate targets in the Impact Assessment of the new EU framework on climate and energy for 2030[13]:

- 20% Greenhouse gas emissions' reduction target: The EU reached a 17% reduction of greenhouse gases (GHG) in 2011 as compared to 1990 and is on track to meet and even exceed the 2020 objective of 20% GHG reduction as compared to 1990;

- 20% RES target: The share of renewable energy reached 12.7% in 2011 as compared to 8.5% in 2005. The EU28 Member States have met on aggregate their interim target for 2011 and 2012. However several Member States must now adopt significant additional efforts if the EU is to meet its 2020 renewable target;

- 20% efficiency target: Despite this target is not legally binding, progress has been made. The EU primary energy consumption peaked in 2005-2006 and has been decreasing since 2007. However, the EU is likely to miss its 2020 target; according to the EU Reference Scenario, energy savings will not exceed 17% in 2020.

Energy investments undertaken today will still be in use up to and beyond 2030. Investors therefore need already today certainty over the energy and climate framework. Apart from setting long-term goals with its 2050 Roadmap[14], the Commission proposed on 22 January 2014 the main pillars of the new EU framework on climate and energy for 2030[15]. The main features of the proposed 2030 framework are as follows:

- An EU-wide 40% binding target of GHG emission reductions as compared to 1990. The proposal also features a reform of the EU ETS, including a market stability reserve as of 2021, which will automatically adjust the number of allowances to be auctioned thus providing stability;

- An EU-wide 27% binding target for RES, which would however not be translated into targets per MS;

- The energy efficiency target will be considered later on, with the review of the Energy Efficiency Directive;

- Other elements such as key indicators (e.g. energy price differentials with the major trading partners of the EU) to prepare for a potential policy response if necessary, in order to ensure a competitive, secure and affordable energy. The proposal also features

[13] Impact assessment accompanying the Communication A policy framework for climate and energy in the period from 2020 up to 2030
[14] European Commission (2011): "Energy Roadmap 2050", COM(2011)885.
[15] http://ec.europa.eu/energy/2030_en.htm

a new governance system with reviewed national plans by Member States for a competitive, secure and affordable energy.

The 2020 objectives and the 2030 proposal establish the framework that should allow Member States and the EU to reach the climate and energy targets mostly through regulatory measures and market-based mechanisms[16]. By way of exception, State aid may be justified when the regulatory and market mechanisms leave specific market failures. For this reason, and as explained in the previous subsection, State aid can only be declared compatible where the polluter pays principle cannot be respected through less distortive interventions.

In addition to these three targets, the flagship initiative for a resource-efficient Europe is a key policy document in the context of Europe 2020 strategy. 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.

2.2. Which are the problems to address in the review of the EAG?

As long as market and regulatory failures persist, Member States are likely to continue using State aid to meet the Union's environmental, energy and climate policies. The Commission, which has exclusive competences in State aid control, should however ensure an effective and efficient State aid control framework. To increase the transparency and legal certainty the Commission has for several decades adopted and applied Guidelines with the Commission's interpretation of the exemptions provided in Article 107(3) to the general prohibition to grant State aid. The main problems stemming from the application of the 2008 EAG, the results of the public consultations and the review of the 2020 energy and climate framework are listed and described in subsections 2.2.1 to 2.2.4.

Prior to the description of the problems addressed in this review, it has to be noted that several respondents to the public consultation indicated that the review should address the problems perceived to be linked to the support of biofuels. In particular a) cost-inefficiencies, b) sustainability of conventional biofuels, and c) distortion of competition in upstream markets using the same feedstock. In the period between 2008 and 2012 Member States granted under the EAG EUR 9.1 billion to support biofuels under 21 schemes (18 tax rebate and 3 direct grant schemes). Annex 10 presents an examination of the problems related to the support to biofuels. The result of the analysis shows that there is either insufficient evidence to back up the problem (e.g. cost-inefficiencies) or the issues raised stem from supporting policies and are better addressed through regulation (e.g. sustainability of biofuels).

[16] Such as the EU's Emission Trading Scheme (ETS)

2.2.1. *The existing State aid rules for support schemes to electricity from renewable energy sources (RES-e) do not prevent cost-inefficiencies and undue market distortions*

The deployment of RES-e technologies has shown remarkable growth over the recent years, partly due to the support schemes in place throughout Member States to meet their mandatory RES targets. The share of RES-e in the overall electricity sector grew by 5.1 percentage points from 2008 to 2011, when it reached 21.8%[17]. According to the Commission's 2050 Energy Roadmap[18] the share of renewable energies will continue to increase and the Impact Assessment of the 2030 framework[19] reported that the Union is on track to achieve the 2020 targets.

The following table gives an overview of the importance of various technologies in the overall RES-e portfolio.

Table 1: Share of technologies in Renewables Gross Electricity Generation 2011 in TWh. Source: European Commission[20]

TWh	Renewables	Hydro	Wind	Biomass and Renewable Waste	Solar	Geothermal	Tide, Wave and Ocean
EU-27	699.5	335.2	179	132.6	46.3	5.9	0.5
Share - %	100	48	26	19	7	1	0

Only those support schemes that meet all the criteria laid down in section 2.1.1 may constitute State aid[21]. Figure 16 in Annex 4 shows that the largest amount of aid under the EAG categories was granted to renewable energy sources (excluding biofuels)[22]: EUR 10 billion between 2008 and 2012. Approximately 80% of this amount was granted as operating aid.

The main support mechanisms to RES-e are as follows:

- Feed-in tariffs (FIT) are a price-based instrument, according to which generators are paid a fixed price at a guaranteed level, irrespective of the wholesale electricity price;

- Feed-in premia (FIP) also are a price-based instrument where generators receive a premium payment in addition to the wholesale electricity price. There are different designs such as floating premia and fixed premia;

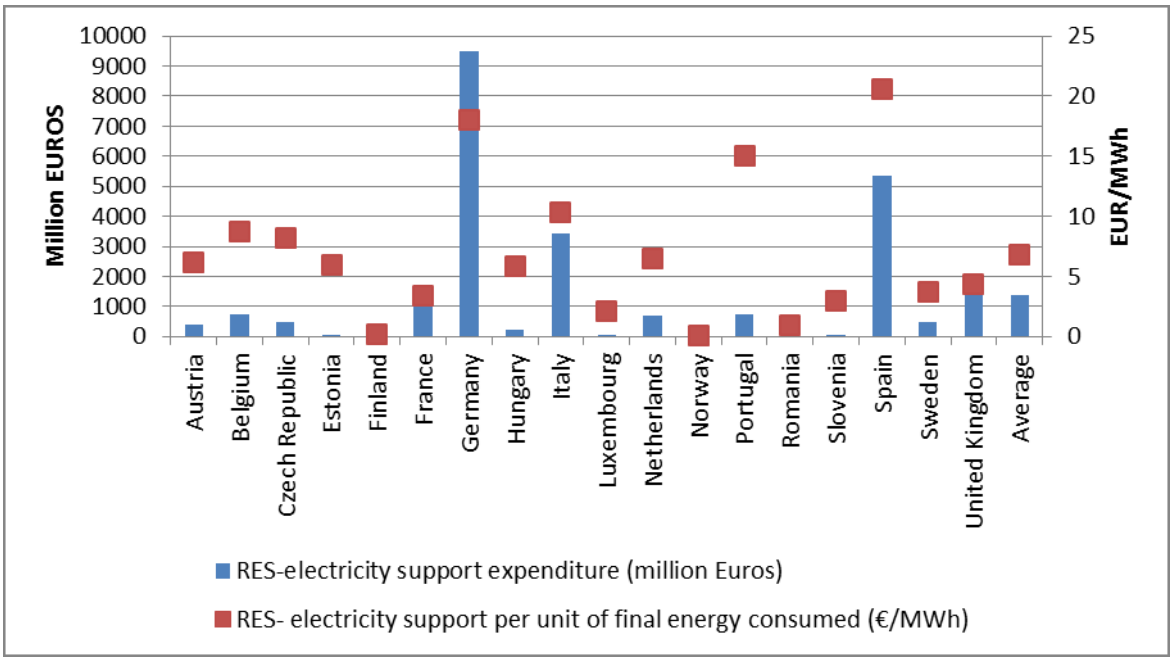
- Green certificates (GC) are a volume-based instrument. GC are tradable and can be sold by RES-e producers separately from the electricity.

[17] Source: Eurostat.
[18] European Commission (2011): "Energy Roadmap 2050", COM(2011)885.
[19] Impact assessment accompanying the Communication A policy framework for climate and energy in the period from 2020 up to 2030, http://ec.europa.eu/energy/doc/2030/20140122_impact_assessment.pdf
[20] European Commission (2012)"EU energy in figures – Statistical Pocket Book 2012", http://ec.europa.eu/energy/publications/doc/2012_energy_figures.pdf .
[21] The Commission intends to issue a "Notice on the notion of state aid". The public consultation is available on http://ec.europa.eu/competition/consultations/2014_state_aid_notion/index_en.html
[22] The State Aid granted to the production of energy from RES overall was EUR 19 billion, of which EUR 9.1 billion for the production of biofuels.

a) cost-inefficiency of administratively established support schemes

Figure 1 below shows that many Member States spend large amounts on support schemes for RES-e, both cumulatively as well as per MWh. For this reason, cost-efficiency should be considered an important parameter. The figure also shows that the unitary support levels vary largely across Member States.

Figure 1: RES-e support in Europe in million euros and per unit of energy consumed. Source: CEER, June 2013.



Costs of many renewable energy technologies have been decreasing rapidly in recent years. Figure 2 below gives an overview of the expected cost reductions of various technologies. Figure 3 shows on the other hand the spread of support levels across technologies.

Figure 2: RES-e cost developments in Europe for different technologies. Source: JRC-SETIS analysis. SWD(2013)158..

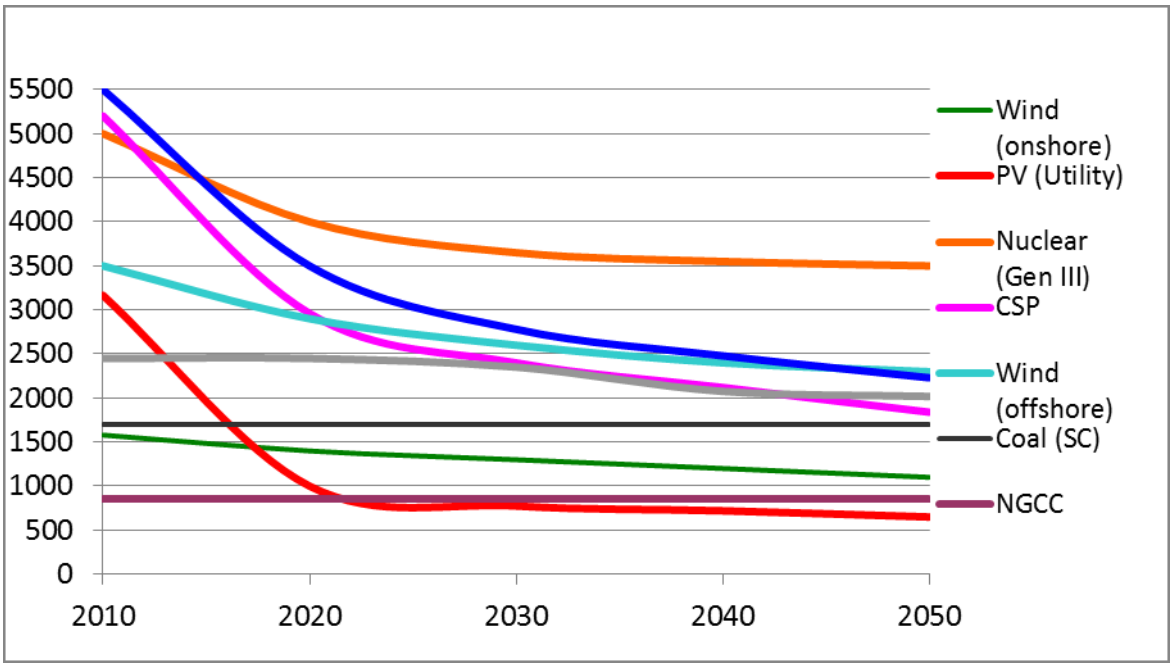
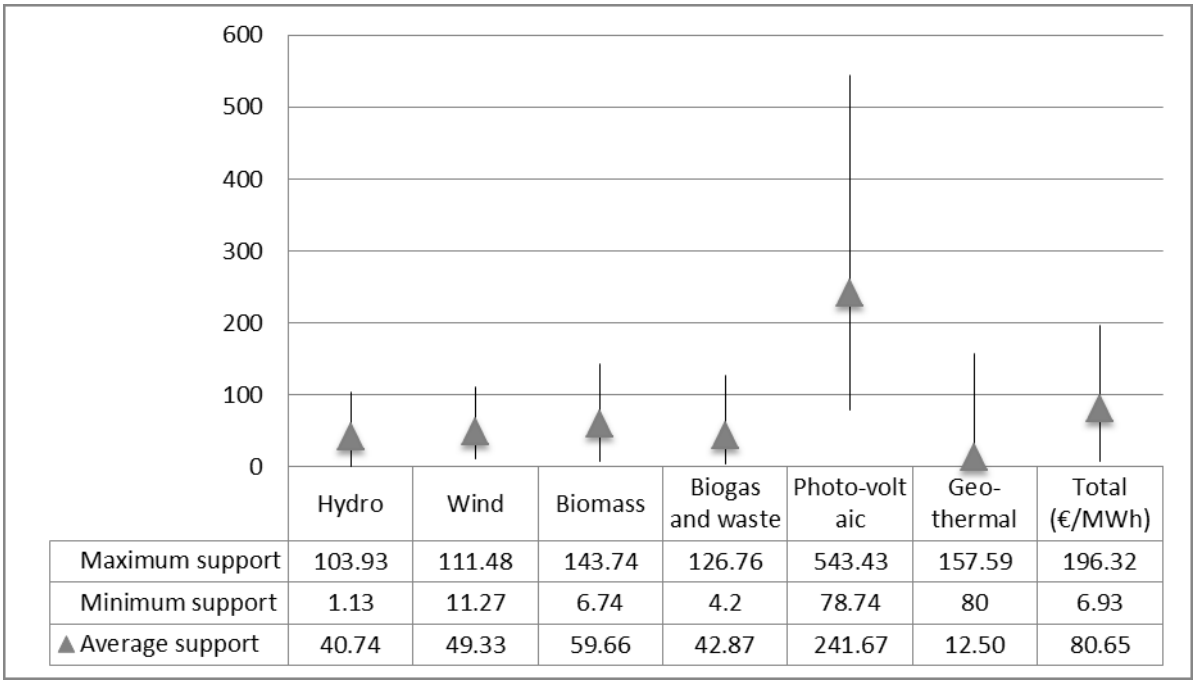


Figure 3: RES Support levels by technology in Europe. Source: CEER, June 2013.



	Hydro	Wind	Biomass	Biogas and waste	Photo-voltaic	Geo-thermal	Total (€/MWh)
Maximum support	103.93	111.48	143.74	126.76	543.43	157.59	196.32
Minimum support	1.13	11.27	6.74	4.2	78.74	80	6.93
▲ Average support	40.74	49.33	59.66	42.87	241.67	12.50	80.65

Today Member States mainly employ administratively established FITs or FIPs. However these administratively established support levels does not ensure cost-efficiency due to the information asymmetries between the regulator establishing the support level and the producers that benefit. Depending on the resulting level of support there is a risk of under or

over deployment. In the following, three case studies that resulted in over deployment are presented:

Germany supports renewable energy generation via the Renewable Energy Act (Erneuerbare Energien Gesetz – EEG). Until 2012, this scheme was solely based on an administratively set FIT with priority access to the grid.[23] The evaluation report presented by the German government to the Parliament during the discussions of the Renewable Energy Act for 2011 recommended the increase in cost efficiency to limit the financial burden on households and industry. In this regard, it was acknowledged that there had been undesirable developments in the past. For instance in 2010 more than 80% of the EUR 23.7 billion invested in renewable energy was allocated to solar photovoltaic (PV) installations. In addition, the average remuneration to RES-e went up from 8.5 ct/kWh in 2000 to 15.5 ct/kWh in 2010, while system prices for solar PV decreased by around 66% during the last 6 years.[24] Addressing the reported cost-inefficiencies appears to have motivated the amendment of the Renewable Energy Act as of January 2012, in particular to reduce the excess support to solar PV.[25]

The Dutch "Environmental Quality of Electricity Production" (MEP)[26] subsidy scheme was introduced on 1 July 2003 as a technology-specific premium on top of the wholesale electricity price.[27] MEP subsidies were *i)* not linked to actual electricity market prices but based on administratively-set future estimates, *ii)* fixed for up to 10 years. In total, it was estimated that until December 2006 about EUR 1.4 billion was paid in subsidies to RES-e producers under the MEP scheme.[28] CE Delft concluded in a report commissioned for the Dutch Court of Auditors[29] that the MEP scheme had led to significant cost-inefficiencies, in particular in the aid to onshore wind producers. Onshore wind received an amount of EUR 430.8 million between 2003 and 2006 whereas CE Delft calculated that EUR 220 million would have sufficed, that is 49 percent lower. In the CE Delft's baseline scenario, this effectively represented an excess of EUR 0.033/kWh in 2003, EUR 0.029/kWh in 2004, and even EUR 0.047/kWh in 2005. The Ministry of Economic Affairs considered that the costs of the scheme were becoming too high and expected the country's goal of 9% RES-e production by 2010 to be achieved. It thus decided not to grant further aid to new applications in August 2006, effectively ending the MEP scheme.[30] Nevertheless, the subsidy obligations of the MEP scheme to existing installation continued to have a significant impact on expenditure in the following years. In particular, it was found in 2009 that the remaining estimated obligatory

[23] International Energy Agency (2013), available at: http://www.iea.org/policiesandmeasures/pams/germany/name,22369,en.php, http://www.iea.org/policiesandmeasures/pams/germany/name,25107,en.php.

[24] DIW (2014): Discussion Paper "Comparison of Feed-in Tariffs and Tenders to Remunerate Solar Power Generation", http://www.diw.de/documents/publikationen/73/diw_01.c.437464.de/dp1363.pdf.

[25] Erfahrungsbericht 2011 zum Erneuerbare-Energien-Gesetz (EEG-Erfahrungsbericht): http://www.erneuerbare-energien.de/fileadmin/ee-import/files/pdfs/allgemein/application/pdf/eeg_erfahrungsbericht_2011_bf.pdf

[26] "Milieukwaliteit van de Elektriciteitsproductie" (MEP) in Dutch.

[27] International Energy Agency (2013). available at http://www.iea.org/policiesandmeasures/pams/netherlands/name,21635,en.php (accessed on March 18 2014)

[28] Mulder, M., M.H. Korteland, and M.J. Blom (2007): Overwinsten bij de subsidieregeling Milieukwaliteit Elektriciteitsproductie (MEP) – Een analyse van omvang en achtergrond. CE Delft, The Hague.

[29] "Algemene Rekenkamer" in Dutch.

[30] EnerQ b.v. (2006): Jaarverslag 2005. Arnhem, The Netherlands.

payments amounted to EUR 8.4 billion[31], which was three times the estimated remaining expenditure for the MEP predicted in 2008.[32]

In Spain the amendment of an administratively established FIT in 2007 led to an increase of PV installed capacity from 695 MW at the end of 2007 to 3,116 MW by September 2008,[33] well above the official target at that time.

In several cases, Member States attempted to address the over-deployment and budgetary impact caused by the cost-inefficiencies with retroactive changes as shown in the table below.

Table 2: Support scheme changes, retroactive changes and Moratoria throughout the EU[34]

MS	'05	'06	'07	'08	'09	'10	'11	'12	Retrospective Change	Moratorium	Change planned
AT		x				x					
BE					x						yes
BG									2012	2011	
CY		x									
CZ		x							2011		yes
DK					x						
EE	x			x							yes
FI									2012		
FR		x				x				2010	yes
DE					x		x				yes
HU	x										
GR		x							2012	2012	
IE											
IT	x	x	x	x	x		x		2012		
LT											
LU				x	x						
LV		x			x	x					
MT					x	x					
NL							x				
PL											yes
PT	x		x		x	x					
RO					x		x				
ES			x	x		x			2010, 2013	2012	
SE							x				
SI					x						
SK						x					
UK					x						
Total	4	7	3	4	11	7	5				

The Commission published on 5 November 2013 a Communication on State intervention in the energy sector.[35] Among other things, the document identified the following requirements

[31] Economic Affairs (2009): "Interim Auditraport betreffende Begroting XIII Ministerie van Economische Zaken en Fonds Economische Structuurversterking over de eerste negen maanden van het jaar 2009", The Hague, the Netherlands.

[32] Economic Affairs (2007): "Vaststelling an de begrotingsstaten van het Ministerie van Economische Zaken (XIII) voor het jaar 2008", Tweede Kamer, vergaderjaar 2007-2008, 31 200 XIII, nr. 2, The Hague.

[33] Elsevier Renewable and Sustainable Energy Reviews 16 (2012): "Support for solar PV deployment in Spain: Some policy lessons", Del Rio et al.

[34] Based on SWD (2013) 439 final and Keep On Track (2013): "Policy Paper on retrospective changes to RES legislations and national moratoria".

for the design of support schemes: Introduction of competitive elements in support schemes by determining support levels through bidding processes and fostering competition between technologies while allowing for the development of a variety of technologies.

The only condition that the 2008 EAG impose on the level of operating aid to renewable energy sources is to limit the compensation so as to allow the beneficiary a normal rate of return. Therefore, the existing compatibility criteria do not ensure that support schemes to electricity from renewable energy sources promote cost-efficiency.

b) No incentive for market responsiveness

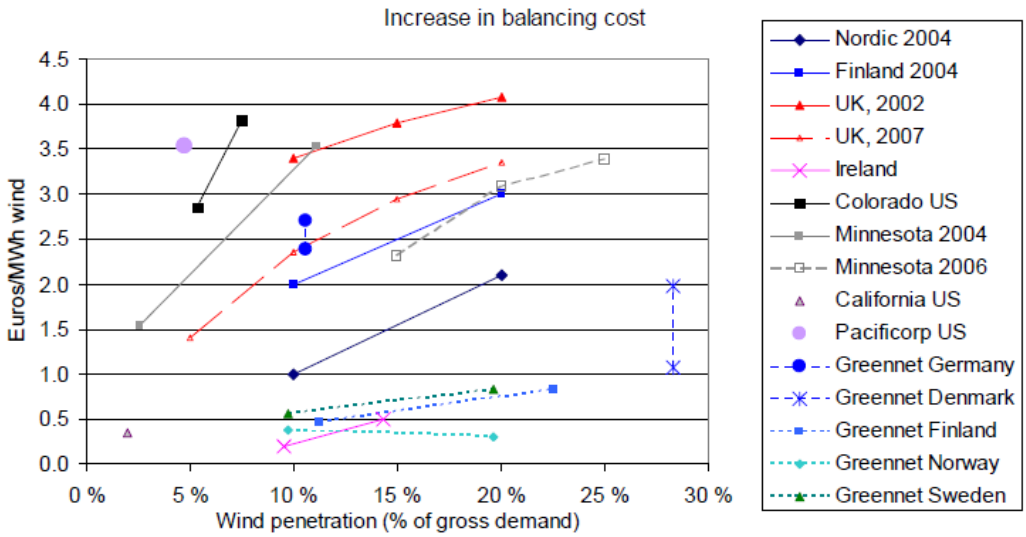
If the compensation is granted in the form of a FIT (instead of a FIP), RES-e producers have no exposure to market signals and the wholesale electricity price. This means that there are limited incentives to consider in the design of the RES-e facility issues such as or matching production with demand even if it leads for instance to negative energy prices in the wholesale electricity market. This link between support schemes and negative prices was examined in a recent position paper of the European Energy Exchange (EEX) and EPEX SPOT of February 2014 on the further development of support schemes for renewable energy in Germany. Both exchanges underline that especially with regard to FIT and when renewable energy sets the market price, severe distortions are experienced as the bids are not based on marginal costs, but on the level of the remuneration, i.e. the FIT. They outline that in the future with higher shares of renewable energy in the overall electricity generation, these instances of distorted price setting will increase.[36]

Electricity supply and demand must be kept however balanced at all times. All market players are usually subject to rules to take responsibility for imbalances in their programme. However several Member States exempt RES-e producers from balancing obligations. The cost of imbalances to the system can be substantial, in particular in markets with high penetration of non-dispatchable technologies. Most studies have mainly focused on wind energy. The International Energy Agency (IEA) reviewed between 2006 and 2008 available studies on balancing costs for varying degrees of wind penetration. The results are summarized in Figure 4, which shows that balancing costs tend to increase with the share of wind energy in the energy mix.

[35] European Commission (2013): C(2013) 7243 final: "Delivering the internal electricity market and making the most of public intervention", http://ec.europa.eu/energy/gas_electricity/doc/com_2013_public_intervention_en.pdf.

[36] EEX and EPEX Spot (2014): Positionspapier "Weiterentwicklung der Fördermechanismen für Erneuerbare Energien in Deutschland", http://www.eex.com/blob/68116/ebf261a24176da3a44f28bb6fecd7ca2/20140205--eex-epex-spot-positionspapier-weiterentwicklung-ee-foerdermechanismen-de-final-pdf-data.pdf.

Figure 4: Wind energy penetration and resulting balancing costs. Source: IEA, 2006-2008.



Where the electricity market design includes suitable features (for example gate closure near real time) RES-e producers can participate in balancing, thus giving them an incentive to avoid imbalances whose costs are otherwise distributed among all players. Around sixteen Member States have already introduced such obligations for producers of RES-e with eight Member States requiring full balancing responsibilities.

In its 2013 guidance paper[37] the Commission recommended to increase market exposure of renewable energy producers through a change to systems including self-marketing (such as FIP), exposing RES producers to balancing responsibility, where appropriate, and applying cost-reflective and coherent charging regimes for grid access for all producers.

As highlighted in the third public consultation, several stakeholders, among them RES-e producers, viewed the introduction of balancing obligations generally positive. Some stated that this would minimise the volume of imbalances within Europe and reduce the associated costs to end consumers. As to the mandatory introduction of FIP, some stakeholders, in particular from industry, welcome a shift from FITs towards the less distortive FIP.

2.2.2. *Financing the support to electricity from renewable energy sources may lead to higher retail energy prices, which may increase pressure on Member States to exempt certain undertakings from the costs of financing renewable energy – Outside the scope of the 2008 EAG*

Several Member States have implemented, or are planning to implement, reductions on RES support expenditure for large and/or electricity-intensive consumers. The main State Aid concern is that the firms enjoying such reductions obtain a selective advantage which improves their competitive position vis-à-vis other firms, potentially distorting trade between Member States. In addition, schemes may introduce distortions within a Member State when

[37] European Commission (2013): C(2013) 7243 final, "Delivering the internal electricity market and making the most of public intervention", http://ec.europa.eu/energy/gas_electricity/doc/com_2013_public_intervention_en.pdf.

there is differential treatment of companies within given sectors (e.g. large firms receiving support, while smaller firms do not).[38]

The existing EAG do not however include compatibility criteria on measures aimed at compensating undertakings for the costs of financing renewable energy policies. The absence of clear compatibility criteria reduces the legal certainty for Member States and potential beneficiaries. The Commission opened on 18 December 2013 the formal investigation procedure into the support for energy-intensive companies benefitting from a reduced renewables surcharge in Germany[39].

A recent report drafted by DG ECFIN[40] estimates that in the period 1995-2009 the manufacturing sector in the EU27 experienced an average annual increase in real energy prices of 6.1%. Over the 2008-2011 period, average electricity taxes and levies in the EU have risen by 43% and 67% in households and industrial customers respectively, whereas the equivalent changes in average energy and supply costs were 3% and -2% and in network cost 17% and 21%. The largest percentage increase among the components of end-user electricity prices was observed in taxes and levies (Figure 5). Member States have in place support schemes to meet mandatory RES targets. The financing of RES support expenditure (see Figure 1 above) is, in most cases, financed through the possible pass down of supplier's costs to end users[41] which may partly explain why retail prices in the household and industrial consumer segments have risen more than wholesale prices.

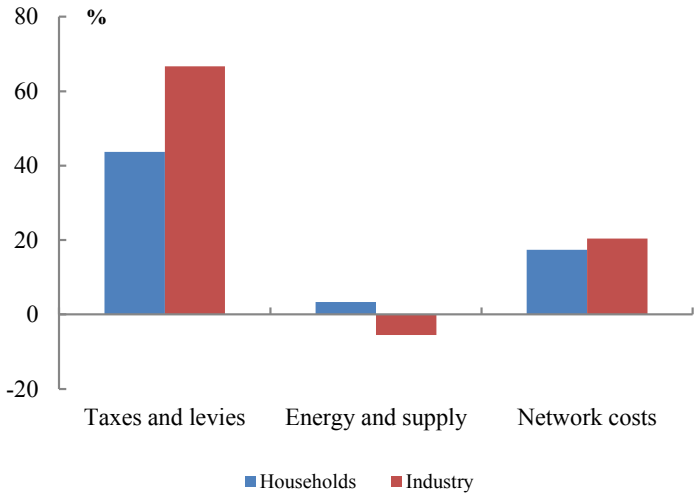
Figure 5: EU average change per electricity tariff component between 2008 and 2011

[38] Another potential concern with exemptions from charges on energy consumption is that this may distort a price signal intended to be given by the charge. However, RES financing charges do not necessarily aim to provide price signals for electricity consumption. Instead, they usually aim to finance RES expenditure.

[39] SA.33995

[40] SWD(2014), Energy Economic Developments in Europe, DG ECFIN, Table I.1.1.

[41] CEER(2012), Status Review of Renewable and Energy Efficiency Support Schemes in Europe, revised version 25 June 2013, page 11.



(1) The Consumption bands used were DC for Households (2500 kWh < Consumption < 5000 kWh) and IC for Industry (500 MWh < Consumption < 2000 MWh), wholesale prices are average spot prices from different European exchanges and pools.
Source: Eurostat.

The ETS Directive acknowledges the risk of carbon leakage[42] and provides for special and temporary measures for certain undertakings including aid to compensate for increases in electricity prices resulting from the inclusion of the costs of greenhouse gas emissions due to the EU ETS (commonly referred to as 'indirect emission costs')[43]. The ETS Guidelines[44] include the compatibility criteria under which certain undertakings may be compensated.

Similar competitiveness issues may arise in the case of financing support to RES. As a result of electricity price increases, certain industrial sectors may relocate their production outside the EU.

2.2.3. Insufficient level of generation adequacy – Outside the scope of the 2008 EAG

The 2008 EAG are contributing to achieve the 2020 climate and energy targets, in particular through State aid to renewable energy sources and energy saving measures. This contribution is through a single objective: improving the level of environmental protection. The 2008 EAG do not however consider other energy and climate policy objectives such as ensuring security of supply and maintaining competitive prices.

The objectives of common interest stemmed from the Union's energy policy as laid down in Article 194 TFEU, which states that *"[i]n the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to: (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the*

[42] Carbon leakage is defined as the risk that firms may relocate industrial output outside of regions with a cap on carbon emissions, such as the EU, when the energy price difference with other regions reaches a certain level. This relocation of industrial output has the potential to lead to a net increase in global emissions.
[43] The ETS also includes support to companies for their direct emission costs, in the form of free ETS allowances granted to the eligible sectors deemed to be at carbon leakage risk.
[44] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012XC0605(01)&from=EN

Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks".

The Impact Assessment Report for the 2030 energy & climate Framework identified two problems stemming from the integration of energy & climate objectives: insufficient investment in electricity generation and in energy infrastructure. Some of the underlying causes are market failures that could be addressed by State aid measures. In the area of energy infrastructure, the Commission adopted between 2008 and July 2013 15 no objections Decisions under Article 107(3)(c) of the TFEU. The problem of State aid in the field of energy infrastructure is merely an issue of codification; that is transposing the principles established in case practice into compatibility criteria. The issue of codification is addressed in section 2.2.4.

As for electricity generation adequacy, in the Communication "Delivering the internal electricity market and making the most of public intervention"[45] the Commission acknowledged that increased electricity production from variable sources in the EU, the need to finance the upgrading of today's aging electricity generation system and volatility on primary energy markets create uncertainties for generators with regard to their expected revenues. When investors expect to be able to recover their outlays based on (expected) future electricity prices and demand, they will construct generation capacity to meet demand for electricity at all times. The document acknowledges that market failures may prevent ensuring generation adequacy which could lead to the inadequate functioning of the internal energy market. Regulated retail prices and wholesale price caps mean that new investments are less likely to be profitable; that is, the "missing money" problem[46]. That situation is aggravated by the fact that demand response services are not yet widely available. In addition, the economic and financial crisis has increased uncertainties over future demand and has weakened the financial position of many companies. However, the document recommends that Member States put in place generation adequacy measures only after checking that they will not jeopardise the benefits which the Internal Energy Market offers.

The study[47] commissioned by Cowi et al. for the European Commission in June 2013 shows that 14 EU countries are likely to have a reserve margin below 15% in 2020 if no new investment in dispatchable plants[48] takes place. By 2030 all MS except three could experience reserve margins below 15%. The calculations show that the need for new infrastructure may be particularly acute in the decade 2020s. However, a number of countries could be in a critical capacity adequacy situation even before 2020 in case the market fails to deliver the required investment. The study identified that the largest investment requirements are in Eastern Europe followed by Central-Western Europe and the Nordic-Baltic region. As a result, concerns about the adequacy of generation capacity have led some Member States to consider public intervention, such as support schemes for investments in new electricity

[45] C(2013) 7243 final. 5 November 2013

[46] The "missing money" problem refers to the revenue reduction due to intervention in peak prices. In essence it means that constraints are put on energy prices in most energy markets, not allowing them to rise up to the value of lost load (being the price at which consumers would no longer be willing to pay for energy), so that it is hard for generators to be able to recoup the cost of their investment. Cf. Capacity mechanisms in individual markets within the IEM. Cowi et al. June 2013, pp. 22-25. http://ec.europa.eu/energy/gas_electricity/consultations/doc/20130207_generation_adequacy_study.pdf

[47] Capacity mechanisms in individual markets within the IEM. Cowi et al. June 2013. http://ec.europa.eu/energy/gas_electricity/consultations/doc/20130207_generation_adequacy_study.pdf

[48] Base load plants, CCGT plants, peak units and CHP, dispatchable RES plants. Cowi et al, 2013

generation capacity or for remunerating existing plants to remain operational. During the second round of public consultations, stakeholders were invited to provide their views on the necessity of capacity mechanisms. All respondents agreed that the market should in principle ensure security of supply and that capacity mechanisms should be introduced only if a capacity shortage has been identified. Some respondents argued that capacity remuneration mechanisms were necessary, whereas two respondents did not see any evidence for the need.[49]

The few measures assessed under State aid rules in the field of "security of supply" addressed only indirectly the generation adequacy-issue[50] or were found not to constitute State aid[51]. However, if generation adequacy measures are found to constitute State aid, the Commission will need to assess them under State aid control rules. As the existing Guidelines do not include compatibility criteria for such measures, the Commission may need to assess these measures directly under Article 107(3) of the TFEU.

During the third round of public consultations, a number of respondents commented on the capacity remuneration assessment criteria provided for in the draft Guidelines. Only 2 out of 14 responding public authorities considered it too early or misplaced to put in place State aid rules in this field[52] whereas another considered that the adequacy question should be dealt with under Energy Regulation rather than State Aid rules. Some industry respondents (5 out of 29 respondents) considered that aid to generation adequacy should not be considered state aid at all (whatever the design), in particular as there is growing evidence that markets should be redesigned to encompass capacity remuneration in the longer term. The second round of public consultations revealed a general consensus that if capacity mechanisms were to be introduced, there would be a need to review them closely to avoid market distortions.

A number of studies in this field[53] conclude that the design of Capacity remuneration Mechanisms (CRM's) is key to limit their distortion of the Internal Energy Market (IEM), in particular ensuring that they directly solve the underlying market failures.[54]

A number of potential issues stemming from poorly designed CRM's have been identified in particular by the European Commission in the Staff Working Paper "Generation Adequacy in the internal electricity market - guidance on public Interventions"[55]. The most important are explained below:

A. Measures risk not being cost-effective

This may for instance be the case when the need for the introduction of a CRM is poorly evaluated or when the choice of technologies to provide the capacity is established administratively.

[49] See Annex 2
[50] N 178/2010 - Spain
[51] E.g. N 475/2003 – Ireland
[52] Respondents claimed that it is policy field under development and that it is yet unclear clear what could constitute state aid in this field
[53] Cf. for instance Capacity mechanisms in individual markets within the IEM. Cowi et al. June 2013, DG ENER Staff Working Document: SWD(2013) 438 final. 5 November 2013, CREG Study (F)121011-CDC-1182, 11 October 2012.
[54] Cf. DG ENER Commission Staff working document – Generation adequacy in the electricity market – guidance on public interventions, 5 November 2013, p. 28
[55] SWD(2013) 438 final. 5 November 2013

In that respect, about one fifth of the industry respondents to the third public consultation welcome aid to generation adequacy only as a last resort. In particular, at least four respondents proposed that priority should be given to tackling market and regulatory failures: regulatory intervention in the form of wholesale price caps and regulated retail prices. Furthermore Member States and industry largely agree that CRM's should be open to all technologies, including demand side management, storage and interconnectors.

The table below shows a list of some of existing CRMs in the EU. The figures reveal significant differences in the amount of support per unit of installed capacity. Although local specificities may play a role, the differences may indicate varying degrees in cost-efficiency.

Table 3 Annual capacity cost of existing mechanisms

		Annual cost of capacity remuneration			
	Market design	Total cost Mill. €	Per gross electricity gen. €/MWh	Per committed capacity €/MW/year	Committed capacity MW
Greece	Capacity payment	451	9.18[56]	41,030[57]	11,008[58]
Ireland	Capacity payment	529	14.9	78,000	6,778
Italy	Capacity payment	100 – 160	0.5	-	-
Spain	Capacity payment	758	2.7	30,506	24,847
Sweden	Strategic reserve	12	0.1	6,981	1,726
Finland	Strategic reserve	19	0.3	31,216	600

Source: Cowi et al.[59]

B. potential conflict with the decarbonisation objectives

Without environmental criteria CRM may result in the lock-in of fossil fuel generation. In the third public consultation industry respondents noted that capacity mechanisms should pursue one goal only: security of supply. These respondents argued that the reduction of CO_2 emissions is already addressed by other instruments such as the European Emissions Trading scheme (ETS).

Member States seemed less concerned with requirements aimed at aligning CMR's with environmental policies, whereas the majority of environmental organisations would either like

[56] http://www.admie.gr/fileadmin/groups/EDRETH/Monthly_Energy_Reports/energy_201212_GR.pdf
[57] http://www.admie.gr/fileadmin/groups/EDRETH/CAM/Data_CAM_2012-2013_v1.pdf
[58] http://www.admie.gr/fileadmin/groups/EDRETH/CAM/UCAP_12_13.pdf
[59] Capacity mechanisms in individual markets within the IEM. Cowi et al. June 2013, table 4, p. 42-43. http://ec.europa.eu/energy/gas_electricity/consultations/doc/20130207_generation_adequacy_study.pdf

to see flexibility for MS to apply carbon emissions ceilings or to introduce exceptions to the technology-neutrality principle to allow for a differentiated treatment between coal and gas.

C. excluding cross-border capacity may distort the Internal Energy Market

Cowi et al.[60] suggest that national capacity mechanisms are prone to distort cross-border trade in two main ways:

i. by causing over-capacity: regulators are likely to overestimate the necessary domestic capacity reserve margin and to underestimate the contribution from cross-border trade;

ii. by distorting allocation of investments: investments are likely to shift to markets with capacity reserve mechanisms, thereby increasing total costs and distorting cross-border trade.

In particular, if mechanisms are only open to domestic capacity, they are likely to distort investment signals by steering new investments away from neighbouring markets. This may result in negative impacts on regional security of supply.

For the reasons mentioned above, the Commission has identified a number of design features that should be considered by Member States when developing a CRM, in order to limit or overcome potential adverse effects of the CRM. These have, to varying degrees, been taken into account in the different options for the eventual compatibility of CRM's.

2.2.4. The scope and criteria in EAG and GBER: Unnecessary ex-ante scrutiny of certain measures with little impact on competition and diverging criteria across State aid rules

a) Long or unnecessary ex-ante scrutiny of certain measures under EAG

Measures falling under the scope of the Guidelines force Member States to obtain clearance from the Commission before granting State Aid. The time required for the compatibility assessment depends on the quality of the submission and the complexity of the issues at stake. If the notification submitted by the Member State is incomplete, unclear or the issues are too complex, the Commission may require several rounds of requests for additional information from the Member State. The number of requests affects the time necessary for the Commission's assessment: the larger the number of requests, the longer the period between the notification and the Decision by the Commission. It also puts additional burden on the Member State, who needs to submit further information. As for the beneficiary, the length of the procedure may cause not just reduce the investors' confidence but also delay the start of the project.

Annex 4 shows that most of the expenditure between 2008 and 2012 was granted under a small number of cases. The analysis of a sample of the 5 largest and smaller cases in terms of expenditure[61] showed that the number of requests for further information is often not linked to

[60] Capacity mechanisms in individual markets within the IEM. Cowi et al. June 2013. http://ec.europa.eu/energy/gas_electricity/consultations/doc/20130207_generation_adequacy_study.pdf

[61] Large cases: Aid Granted above 550 million euros. Small cases: Aid granted below 35 million euros

the size of the case[62]. It can be concluded that the resources and time spent in analysing small cases prevents the Commission from focusing on the most significant cases that have the potential to cause the most distortive effects on competition. It also reduces the ability of Member States to put aid into effect faster, which results in legal uncertainty of the potential beneficiaries of the aid.

While the measures included in the scope of the EAG need to be notified, measures falling under the scope of GBER can be put into effect without an ex-ante assessment by the Commission. As regards the GBER calculation methods, in the first public consultation some Member States noted that the simplified calculation method and investment aid approach of the GBER facilitated the national procedure to grant exempted aid.

b) Diverging scopes and criteria in EAG and GBER

The environmental section of GBER is not in line with the scope of EAG

The scopes of EAG and GBER are not aligned. GBER only covers some of the aid measures allowed under EAG. In the public consultations several Member States requested to extend the scope of the GBER, for instance to operating aid for renewable energy and cogeneration, energy savings in buildings and district heating.

Furthermore the scope of EAG may also change as a result of this review. Addressing problems 2 and 3 could result in two new categories. In addition, since 2008 the Commission has also gained case practice under the Treaty in several environmental and energy fields that could be codified into compatibility criteria to increase the legal certainty and transparency of the Commission's assessment framework. Details are provided in Annex 7.

Diverging compatibility assessment criteria in EAG and GBER

Sectorial and horizontal State aid Guidelines adopted in the period 2007-2012 used a compatibility assessment framework based on the balancing test (see Annex 3). The implementation of the balancing test varied however across Guidelines. The SAM strategy aims at a wider standardisation of the implementation of the balancing test, namely the adoption of common principles. The existing EAG already build from these common principles but there are divergences in several areas such as the definition of eligible costs, required proof on the incentive effect, etc. In the first public consultation, some respondents commented on the difficulties they encountered in the application of the guidelines, in particular the definition of the alternative investment ("counterfactual") and the calculation of the eligible costs. As a result, EAG (and also GBER) provisions have sometimes been perceived as complex.

2.3. Likely evolution of the problem if the existing EAG are maintained without modifications

The baseline scenario is to extend –without changes- the existing Environmental Aid Guidelines; that is maintaining the existing scope of 13 categories and the compatibility

[62] The Commission required in total 8 requests for information for the sampled small cases and 5 requests for the large cases

criteria. The problems reported in section 2.2 would therefore continue the trend experienced in the last years.

Evolution of Problem #1:

The existing rules do not guarantee that the support mechanisms are cost-efficient or that they do not introduce undue distortions.

Unless Member States design stricter measures than the conditions in the existing EAG, maintaining the rules unchanged would allow the distortive effects of support schemes described in section 2.2.1 to continue. However, as displayed in Table 2, there are frequent changes of support schemes throughout Member States and the most notable development is the move towards remuneration mechanisms based on FIP. Several Member States are currently modifying their support schemes as evidenced by the notification and pre-notifications[63] from 12 Member States currently under assessment by the Commission.

In addition, 16 Member States already apply balancing obligations to RES-e producers with 8 Member States making full balancing obligatory.[64] This reduces the risk of competition distortions. It is uncertain if other Member States would follow, would do so timely and with the necessary design elements to deal with the identified problems across the European Union.

The use of competitive bidding is for instance not often taken into account by Member States in the design of future support schemes. Therefore, even though new design elements for administratively established tariffs are being introduced by Member States, cost-efficiencies are likely to persist in the future.

Evolution of Problem #2

The impacts of a lack of compatibility criteria for exemptions from RES surcharges are difficult to predict.

We expect the pressure on consumers to finance RES support schemes to continue.[65] In order to avoid risks to the competitive position of their firms, Member States may be tempted (or feel compelled) to reduce the contribution of their (large) domestic firms, leading to a subsidy race in the form of granting exemptions to large electricity consumers, in the absence of specific state aid rules. Member States sometimes justify putting in place discounts for electricity intensive users (EIU) by pointing at other Member States also having such a system in place.[66] The subsidy race may erode the financing base for renewable energy support,

[63] Information on the prenotifications and notifications is confidential.

[64] European Commission (2013): "European Commission guidance for the design of renewables support schemes", SWD(2013) 439 final.

[65] Member States need not finance RES via a surcharge on the electricity price, and indeed not all Member States do so - for example, Finland, Luxembourg and the Netherlands (see CEER 2012). However, they may view such surcharges as the most appropriate way of raising finance. For example, even if theories of optimal taxation suggest there may be less distortive ways of raising revenues for RES expenditure than through surcharges on the electricity price, equity considerations (e.g. burden of providing the good is best borne by all those benefitting from it) may also be relevant.

[66] For example , in its consultation on , the UK notes that, without intervention, costs faced by UK EIUs may be "much higher" than other Member States that exempt EIIs from the cost of renewable energy support schemes, (notably Belgium (Flanders), Denmark, Germany, Republic of Ireland, Norway and Sweden). See para. 25 of

resulting in a need for Member states to increase the charge faced by other users. Ultimately, this may undermine the ability and desire to have ambitious RES targets in the first place.

The subsidy race will in practice be limited, since the Commission would assess such exemption schemes directly under the Treaty. There is a possibility that, viewed in isolation on a case-by-case basis, individual Member State schemes to aid EIUs may be found incompatible even if they are targeted at addressing genuine international competitiveness concerns. While the uncertainty faced by Member States and industry is difficult to quantify, it may lead to an increase in the cost of capital faced by industry, putting at risk investment and economic growth. The impact might be expected to be greatest for those sectors with the highest electricity cost intensity ("electricity-intensity"): the extent of exemptions from RES surcharges will have the biggest impact for companies in such sectors. This could itself lead to a direct loss in competitiveness compared to companies outside the EU.

In their responses to the consultation, some stakeholders welcomed the introduction of a clearer framework for assessing measures that reduce the share of RES financing costs borne by certain firms. One Member State explicitly mentioned the need to ensure a sufficient financing base for RES expenditure (in the context of ensuring clear criteria that aid is necessary).

Evolution of Problem #3

Maintaining as the sole objective of EAG, the environmental objective would cause legal uncertainty over measures that stem from the integration of energy & climate policy objectives. In particular, compatibility criteria for State aid to assess the mechanisms that Member States are developing to tackle their generation adequacy problems. The absence of specific rules results in legal uncertainty for Member States and potential beneficiaries.

In the baseline Member States have seemingly large discretion to determine the design of the mechanism to address generation adequacy problems. Member States may not always consider the effect of their measures on neighbouring Member States. As a result the baseline risks going counter to further integration of the Internal Energy Market.

Evolution of Problem #4

Nno changes in the Guidelines would lead to diverging compatibility criteria across horizontal and sectorial State aid Guidelines. The Commission and Member States would also keep allocating similar level of resources to large and small cases.

2.4. Stakeholders affected by the problem and how

State aid control affects several players. The first group are Member States, which have the exclusive competence in considering the use of its resources to grant State aid. The second group are the undertakings which benefit from the aid directly and indirectly (e.g. producers of electricity from renewable energy sources). Beneficiaries enjoy as a result of the aid an economic gain that they would have not obtained under market conditions. The third group

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210724/bis-13-974-electricity-market-reform-consultation-eligibility-for-an-exemption-from-the-costs-of-contracts-for-difference.pdf.

are the competitors of the beneficiaries which are potentially negatively affected. The last group are the consumers or taxpayers, who ultimately bear the costs of financing State aid.

2.5. Analysis of subsidiarity

EU State aid control is the exclusive competence of the Commission according to Articles 107 and 108 TFEU. As a result the Commission has exclusive competence for defining the conditions under which state aid may be considered to be compatible with the internal market.

In the absence of new rules, the Commission would have to assess the notifications of energy and environmental aid on a case-by-case basis in direct application of the TFEU (Article 107(3)(b) and (c)). This scenario would undermine the legal certainty and predictability that EAG have provided to date.

In this respect, EU action is necessary to ensure uniform conditions for the granting of environmental State aid (that is, a 'do nothing' approach is not conceivable). The existence of a General Block Exemption Regulation would not limit the possibility of MS to notify environmental aid. In addition, it is not an appropriate instrument to cater for competition concerns linked to large amounts of aid. Other policy instruments than regulation at EU level (e.g. self-regulation, open method of coordination, market-based instruments, etc.) would not be effective as external rules controlled by a third party (the Commission) are needed to ensure transparent and equal treatment in the relations between aid granting authorities and aid beneficiaries. Therefore, rules on environmental and energy aid must be put in place for the period 2014-20 and Guidelines have proven to be an appropriate tool to address the use at stake and achieve the desired objectives.

3. OBJECTIVES

3.1. General policy objectives

The general objective of the review is to contribute achieving the Union's environmental and energy policy objectives while ensuring an effective and efficient State aid control.

3.2. Specific and operational objectives

The identified four problems are largely independent from each other. Next the specific and operational objectives for each of the problems identified.

Problem number	Specific objectives	Operational objectives
1.	• Assist achieving the 2020 renewable energy targets while minimising the distortive effects of support schemes.	• Reduce the support per unit of energy produced. • Increase the volume of renewable electricity participating directly in the market and in balancing markets.
2.	• Minimise distortions to competition and trade resulting from the financing of support schemes to renewable energy sources, while limiting negative impacts on the competitiveness of EU firms.	• Reduce the incidence of firms relocating due to competitiveness issues.

Problem number	Specific objectives	Operational objectives
3.	• Contribute to ensuring the required generation adequacy level of the Union's energy system while minimising competition distortions.	• Increase reserve capacity margins.
4.	• Focus on the measures with the largest potential to cause competition distortions. • Streamline, clarify and align the rules with the common assessment principles agreed for all State aid rules.	• Increase the share of aid granted under GBER at the expense of aid granted under EEAG. • Reduce the time required to assess notifications.

4. POLICY OPTIONS

The first possibility would be not to take action when the existing Environmental Aid Guidelines expire in 2014. This would result in the absence of general compatibility rules codified in Guidelines. The Commission would exercise State aid control directly under the provisions of the Treaty and would enjoy large discretion to interpret the provisions of Article 107(3). It would in turn reduce transparency and the legal certainty for Member States. This is not an option wished by stakeholders. Therefore it will not be considered and we only consider below which revised Guidelines to adopt.

As for the choice of instrument, the Commission would issue the Guidelines as "Information from European Union Institutions, Bodies, Offices and Agencies". The Commission has recently used this instrument for the Guidelines on regional State aid for 2014-2020" and is planned to be used for the upcoming review of other horizontal and sectorial State Aid Guidelines.

This chapter is structured into four largely independent policy areas. Options are considered in each policy area.

4.1. Support schemes to electricity from renewable energy sources

The options introduce varying degrees of market integration and cost efficiency requirements.

All options relate to Member States' support schemes only after expiry of the transition period stipulated in the EEAG and not to aid already granted to individual beneficiaries, therefore not involving retroactive changes.

Options presented in this chapter are only applicable to large RES-e installations. Small installations have limited potential to meet the requirements spelled out in the options other than the baseline or may result in high transaction costs. For the purpose of this report small RES-e installations are those with installed capacities below 1 MWe except for wind energy where the installed capacity threshold is set at 3 MWe.

4.1.1. Baseline: Maintain the existing criteria

The existing rules establish that operating aid for electricity from renewable energy sources (RES-e) can cover up the difference between production costs[67] and the market price.

[67] This may also include depreciation costs and a reasonable rate of return.

Technology / *Requirement*	**Large RES-e installations**
Competitive bidding among technologies	No
Support linked to the market price	No
Balancing responsibilities	No

4.1.2. Introduction of minimum market response requirements

This option aims at limiting market distortions by introducing two features:

- Obligation on RES-e installations to sell the electricity on the market. Beneficiaries will therefore receive aid indexed to market prices. This is the case for tradable certificates or feed-in premia (FIP). Member States have flexibility with respect to the design of the instrument. This option also allows for corrective measures in administratively established tariffs, such as corridor solutions or automatic digression of FIP levels.

- RES-e producers are subject to the same balancing responsibilities as other electricity generators to the extent that the market design allows it. Balancing responsibilities means responsibility for deviations from the scheduled generation plan.

The following table summarises the option:

Technology / *Requirement*	**Large RES-e installations**
Competitive bidding among technologies	No
Support linked to the market price	Yes
Balancing responsibilities	Yes

4.1.3. Introduction of strong competition requirements

This option includes the requirements of option 4.1.2 in order to limit market distortions.

The option introduces an additional feature to achieve higher cost efficiency of the support schemes: not allowing the support to be established administratively. Instead, it proposes granting the support through a genuine competitive bidding process on the basis of clear, transparent and non-discriminatory criteria.

This option is explored with and without flexibility provisions. The flexibility requirements were requested by a large number of respondents to the third public consultation both from Member States and industry.

Sub-option 4.1.3 (a): It includes the flexibility package to cater for duly justified exemptions:

- Aid does not need to be granted based on a competitive process if a Member State demonstrates the existence of only few eligible sites/projects, the emergence of higher

support levels (for example in cases of strategic bidding) and/or the risk of low project realisation rates.[68]

- Exceptions from the openness to all RES-e technologies can be made if it is demonstrated that this would yield a suboptimal result. In particular, this would comprise long-term potential of new/innovative technologies, source diversification, network constraints/grid stability, and/or system integration costs.

- In 2015-2016 Member States only need to implement a pilot bidding process for a part of the RES-e capacity. As of 2017, aid should be granted only based on competitive bidding unless a Member State meets the two former conditions.

Sub-option 4.1.3 (b): This option does not include the flexibility sub-options.

The table below summarises the features of the two sub-options.

Technology / *Requirement*	**Large RES-e installations Option 4.1.3.a**	**Large RES-e installations Option 4.1.3.b**
Competitive bidding amongst technologies	Yes	Yes
Flexibility package	Yes	No
Support linked to the market price	Yes	Yes
Balancing responsibilities	Yes	Yes

4.2. Exemptions/ reductions from RES financing

4.2.1. Do not include compatibility criteria

This is the baseline scenario.

4.2.2. Use the approach of the ETS Guidelines

The Commission acknowledged in the ETS Guidelines that certain sectors are at risk of relocation outside the EU due to carbon leakage and issued a list of eligible sectors. Acknowledging similar competitiveness risks posed by RES financing on certain EU sectors, this option proposes using the same sector list established in the ETS Guidelines in 2012[69] to assess measures involving exemptions/ reductions from RES financing:

Necessity: aid to an electricity-intensive company is deemed necessary if its sector or sub-sector is in the list established in Annex III of the ETS guidelines.

Proportionality: State aid to beneficiaries within these sectors would be deemed compatible if they pay at least 20% of the average RES financing cost per MWh.

[68] Member States are free in their choice of requirements for participation in the competitive process to ensure the implementation of projects.

[69] DG CLIMA Guidance Document The Monitoring and Reporting Regulation – General guidance for installations, http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf

4.2.3. Use adjusted ETS Guidelines criteria

This option proposes using the principles established in the ETS Guidelines in 2012[70] to establish eligibility for aid, but adopting slightly different criteria to establish the necessity of aid. The necessity criteria are a) electricity costs as a share of GVA ("electricity-intensity") at an EU level and b) trade intensity at an EU level with third countries[71]. The data sources, assumptions and rationale for the design criteria are described in Annex 5.

Necessity: Aid to an electricity-intensive sector is deemed necessary when sectors are facing a trade intensity of 10% at EU level and when the sector electricity-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 electricity-intensity of at least 25% or that are economically similar (e.g. on account of substitutability). Equally, sectors having a slightly lower electricity-intensity but at least 7% and facing very high trade exposure of at least 80% would face the same risk. This combination of parameters were chosen as it is broadly analogous to the quantitative criteria used (in part) to set the list of sectors deemed to be at risk of carbon leakage in the ETS Guidelines.

The list of sectors resulting from the necessity criteria listed above is given in Annex 6. The sector "Casting of Iron" (NACE code 2451) is eligible on the combination of criteria above. In order not to distort competition between sectors which are economically very similar, three metals casting sectors are added to this option.

Proportionality: State aid to beneficiaries within these sectors would be deemed compatible if they pay at least 20% of the average RES financing cost per MWh.

4.2.4. Use adjusted ETS Guidelines criteria, with additional company-specific eligibility criteria

Necessity: Same as in option 4.2.3 above, but it also allows Member States to exempt an individual company provided it has an electricity-intensity[72] of at least 25% and belongs to a sector with a trade intensity of at least 4% at EU level. This option is proposed as a way of accounting for the fact that certain sectors might be heterogeneous in terms of electricity-intensity.

Proportionality: Same as in option 4.2.3

[70] DG CLIMA Guidance Document The Monitoring and Reporting Regulation – General guidance for installations, http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf

[71] Trade intensity (TI): "the ratio between the total value of exports to third countries plus the value of imports from third countries and the total market size for the Community (annual turnover plus total imports from third countries)". Analytically,
TI=(X+M)/(M+Y)
where X represents "total value of exports to third countries"; M the "value of imports from third countries" and Y "annual turnover (i.e. GVA)."

[72] [Measured using average retail electricity prices paid by industry

4.2.5. Use adjusted ETS Guidelines criteria, with additional company-specific eligibility criteria, and caps on the amount of surcharges payable by undertakings

Necessity: Same as in option 4.2.4 above

Proportionality: Same as in options 4.2.3 and 4.2.4, but also gives Member States the possibility to further limit the amount of renewable surcharges to be paid at undertaking level at 5% of the gross value added of the undertaking concerned. For undertakings having an electricity-intensity of at least 20%, Member States would be able to limit the overall amount to be paid at 2.5% of the gross value added of the undertaking concerned. This option is proposed as a way of ensuring that a 20% share of the full renewable surcharge does not go beyond what undertakings particularly affected by the burden can bear, and acts as a backstop against extreme impacts on international competitiveness. Annex 5 explains the rationale for the design of the cap.

4.3. Aid to measures to ensure generation adequacy

4.3.1. Do not include compatibility criteria

This is the baseline scenario. The compatibility of measures would be assessed under the SGEI framework or ultimately directly under the Treaty.

4.3.2. Introduce compatibility criteria – minimum competition requirements

This option attempts to provide a framework for compatibility analysis leaving a great margin of appreciation to Member States regarding the design of the appropriate capacity remuneration mechanism.

In this option, the only criterion that would be tested against predetermined conditions, in addition to those set forth by the Treaty, would be the proportionality criterion. In that way, the Commission would assess whether the capacity remuneration mechanisms do not result in compensation levels above what it is necessary (no overcompensation).

In testing the other criteria set forth by the Treaty, such as the necessity of the measure, the Guidance Paper issued by the Commission in late 2013 would serve as a reference tool. Specific attention would be paid to alternatives available to Member States to avoid the use of CRM (e.g. increase of interconnection capacity) and to the duration of the measure (limited in time, tied to correction of market failure, etc.).

4.3.3. Introduce compatibility criteria – strong competition requirements

This option proposes developing compatibility rules stemming from the Guidance paper. In particular the option transposes the checklist in the Staff Working Paper into compatibility criteria. The proposed criteria place the burden of proof on Member States to demonstrate the existence of a market failure as well as the necessity and the choice of State aid as the best way to solve the alleged generation adequacy problem. In this option, Member States would have less discretion in determining the appropriate tool(s) for addressing their generation adequacy problems as more elements of the possible mechanisms would be prescribed in the Guidelines.

In this option, CRM's would be tested against the following criteria:

- objective of common interest: the precise objective that the measure aims to tackle should be clearly defined. It should not contradict Union environmental policies, such as the decarbonisation targets and the phasing out of fossil fuels, in the sense that MS should primarily consider alternative ways of achieving generation adequacy.

- necessity: the Commission will take into account alternatives, such as demand-side management, existence and plans for additional interconnectors, etc.

- appropriateness: the measure should remunerate solely the service of pure availability, not the generation of electricity (meaning that signals for generation should come from the wholesale market), should provide adequate incentives to both existing and future generators and operators and should in principle avoid rewarding investment in generation from fossil fuels to a maximum extent[73];

- incentive effect;

- proportionality: the measure must be designed in such way that beneficiaries earn a rate of return which can be considered reasonable, without overcompensation;

- avoidance of negative effects: the measure should for instance be technology-neutral (with some exceptions, as non-price requirements would be allowed for), open to the participation of operators from other Member States, avoid counterproductive effects (further deteriorating the capacity need), avoid reducing incentives to invest in interconnection capacity and avoid unduly strengthening market dominance.

4.4. Aligning and streamlining

4.4.1. Maintain the scope and compatibility criteria of the Guidelines and GBER

This option is the baseline scenario. It proposes to keep the Common Assessment Principles (CAPs) in the Guidelines unchanged and the scope of GBER unchanged.

4.4.2. Align the existing compatibility criteria of the Guidelines with the common assessment principles in the SAM strategy. Include new categories in the Guidelines on which there is already enough case practice.

This option proposes several technical adjustments to the EAG to address the concerns raised by the stakeholders about the complexity of the guidelines. Annex 8 gives a detailed account of the changes. In summary, this option proposes to:

[73] This last aspect was heavily criticised in the third public consultation round by industry respondents (twelve out of twenty-nine are at least concerned with this "priority treatment"), in most cases arguing that capacity mechanism should pursue one goal only: security of supply. In the view of these respondents, other instruments are available to reduce CO_2 emissions, such as the European Emissions Trading scheme. They add that this "priority treatment" would furthermore conflict with the principle of technology neutrality and argue that this may not lead to the most cost effective outcomes (at least 4 out of 29 respondents consider this to be the overarching aim of state aid policy in the field of generation adequacy).

- Align the current compatibility criteria with the Common Assessment Principles proposed in the SAM strategy.

- Simplify the calculations of eligible costs. The possibility to carry out this simplification was already presented by the Commission in the issues paper published in spring 2013 and was favourably welcomed by Member States and other stakeholders alike.

- Codify case practice by including in the Guidelines new aid measures and criteria for their assessment that result from the case experience accumulated since the adoption of the current guidelines in 2008.

- Include minor adaptations stemming from sectoral policy updates.

4.4.3. Include in the scope of GBER additional categories concerning investment and operating aid

Following the requests made by stakeholders, this option proposes to include in GBER new categories. It also seeks aligning the scope of GBER and EAG. In addition, this option intends to meet the objective to focus resources on analysing measures with the largest potential to cause competition distortions by including less distortive ones in the scope of the Regulation. This option would apply to the following types of aid:

- investment aid to remediation of contaminated sites;

- investment aid to energy efficient district heating and cooling including the network;

- operating aid to renewable energy sources;

- promotion of energy from renewable sources in small scale installations;

- extension of the possibility to grant aid for early adaptation to future standards to large undertakings (currently only possible for SMEs); and

- investment aid for waste recycling and re-utilisation.

This option also proposes adding "investment aid to energy efficiency projects in buildings" and "investment aid for energy infrastructure" in line with the case practice[74].

Annex 9 provides an overview of the relation between the proposed new GBER conditions and EAG.

5. ANALYSIS OF IMPACTS

In the Sections below, all relevant impacts for the options in each policy area are presented, against the baseline scenario that is, retaining the current approach.

[74] For investment aid to energy efficiency projects in buildings, see SA.34405, SA.35040, SA. 34660, SA.32835, SA. 32147. For energy infrastructure, see footnote [153].

5.1. Impacts of the options under the Policy area "Support schemes to electricity from renewable energy sources"

Option 4.1.1: Baseline

The impacts of options 4.1.2 and 4.1.3 are measured against the baseline.

5.1.1. Economic Impacts

It has not been possible to give an overall quantification due to varying conditions in Member States. However, whenever available, literature analysing relevant past experience has been taken into account. In addition, the case of the Netherlands has been used as a case study, as this Member State introduced in 2011 a support scheme based on competitive bidding: The SDE+ Scheme is a bidding process open to all renewable energy technologies.[75] In the following, the economic impacts on the most relevant stakeholder groups are described.

Impact on RES-e producers

Compared to the baseline, option 4.1.2 introduces balancing responsibilities and the mandatory use of market-indexed support schemes, such as FIP, for all RES-e technologies.

Currently, RES-e producers are subject to full or partial balancing responsibilities in 16 Member States, eight of which make full balancing requirements mandatory.[76] An overview of studies on balancing costs for wind gives estimates of the European Wind Integration Study on costs of managing the variability of wind ranging from EUR 2.1 to EUR 2.6 per MWh. Other studies quantified them lower, at between EUR 1 and EUR 2 per MWh for Denmark with a 28% market share of wind, while for Germany, with a wind penetration of around 10%, costs amount to about EUR 2.5 per MWh.[77] These costs amount to approximately 5% of 6% of the wholesale value of the electricity produced.

FIP include a higher degree of compatibility with electricity markets by promoting the active participation of renewable electricity generation in wholesale markets, providing exposure for example to price signals. FIP has also the potential to reward performance, as the income of producers is linked to the market price (as described, for example in Couture et al., 2010)[78]. As a result, these market responsiveness measures will in the medium term improve the **market integration** of RES-e producers. As a result of option 4.1.2, the costs of balancing will fall on the RES-e generator, increasing its exposure to the market, instead of socialising costs. RES-e generators (together with the relevant Balancing Responsible Parties) will have incentives to develop ancillary markets to cope with increasing load variability.[79] This has also been confirmed by an OECD study setting out that FIP exposing RES-e generators to

[75] Internationally, there are more countries, who already have experience with competitive bidding schemes, for example Brazil.

[76] European Commission (2013): "European Commission guidance for the design of renewables support schemes", SWD(2013) 439 final.

[77] NREL (2012): "Integrating Variable Renewable Energy in Electric Power Markets: Best Practices from International Experience", http://www.nrel.gov/docs/fy12osti/53732.pdf .

[78] Couture et al. (2010): "A policy maker guide to Feed in Tariffs" NREL Technical Report NREL/TP-6A2-44849.

[79] The cost of system integration of variable RES-e can for example be reduced by increased size of balancing areas, gate closure time closer to delivery and improved forecasts.

balancing renders advantages in terms of minimising system costs as compared to simple FIT.[80]

On the other hand, a survey conducted by the IEA indicated that in general moving from FIT to FIP increases the perceived investment **risk for RES-e producers**.[81] This is likely to put upward pressure on the rate of return requirements and the subsequent cost of capital. Taken together, these factors can lead to an increase in RES project costs. In a review of European support schemes[82], rates applied in the Czech Republic and Spain – where RES-e producers could choose between FIT and FIP – were compared. The study showed that the FIP option required the payment of an additional EUR 0.01 - 0.03 per kWh compared to FIT to compensate for the increased risk. Irrespective of the potentially higher costs, it appears that Member States are currently phasing out FIT schemes and introducing FIP schemes, as mentioned above. In addition, the impact of FIP depends on its design, with floating FIPs not necessarily increasing risks.[83]

In the second Public Consultation, around 25% of respondents argued that support systems that respond to market dynamics should be preferred. The most cited examples were tradable certificates and feed-in premia. Three associations of energy providers and suppliers called for the extension of market obligations, such as balancing, to all technologies, but also noted that this might require an adjustment of the support levels in order to cover the new resulting costs. In the third Public Consultation, environmental associations and Member States also noted the risk of additional costs of FIP due to higher investment risk. Ireland highlighted in particular the merits of its FIT scheme. However, only few Member States commented on this topic. Regulators were generally more favourable, but requested flexibility in the design of FIP, such as floating or fixed FIPs. The majority of replies on this issue came from industry and industry associations. Many of them proposed a transition towards FIP, but stressed the importance to exempt small installations and new technologies. They stated that FIP are more appropriate with maturing technologies.[84] The main advantages cited were the optimization of the cost/revenue ratio thanks to market exposure and to encourage technology development. Disadvantages listed by opponents were in line with those previously presented, in particular lower investor certainty and higher investment costs. In addition, some respondents argued that there is no evidence of market distortions caused by FIT.

Competitive bidding, as required in the options 4.1.3 a) and b), could potentially have a large impact on RES-e producers as it could possibly alter the **mix of technologies** deployed. Overall allocations of the Dutch SDE+ 2011 scheme to various technologies are displayed in the table below.

[80] OECD (2012): "Nuclear Energy and Renewables – System Effects in Low-carbon Electricity Systems", http://www.oecd-nea.org/ndd/pubs/2012/7056-system-effects.pdf

[81] IEA (2011): "Deploying Renewables. Best and Future Policy Practice", ISBN: 9789264124912.

[82] Ragwitz et al. (2007). "Assessment and Optimization of Renewable Energy Support Schemes in the European Electricity Market: OPTRES project (IEE) Final Report, http://ec.europa.eu/energy/renewables/studies/doc/renewables/2007_02_optres.pdf

[83] Energy Economics Group, Fraunhofer ISI (2008): "Evaluation of different feed-in tariff design options – Best practice paper for the International Feed-In Cooperation", http://www.renewwisconsin.org/policy/ARTS/MISC%20Docs/best_practice_paper_2nd_edition_final.pdf.

[84] This is also mentioned in some responses from Member States.

Table 4: SDE+ 2011 allocations by technology. Source: Presentation of Annual Report 2012 by Dutch Ministry of Economic Affairs.

Technology	Number of accepted applications	Allocated budget (EUR million)
Green gas	25	932
Green gas hub	4	68
Onshore wind	12	198
Solar PV	623	33
Hydro power	0	0
Biomass - electricity	18	243.5
Landfill gas/biogas from water treatment installations (biomass electricity)	1	0.2
Total	**683**	**1 474.7**

For technologies with established value chains, not having a dedicated support scheme and fixed deployed volumes might increase business uncertainty. Unlike the situation discussed for Option 4.1.2, balancing obligations might affect the supported portfolio of technologies as they now compete against each other and higher costs accruing to non-dispatchable technologies might disadvantage those. However, the exemption for small installations and the fact that as previously mentioned balancing obligations are already applied in most Member States[85] might limit this effect.

Competitive bidding across technologies as proposed in option 4.1.3.b could hamper the **deployment of immature RES-e technologies**. The flexibility provisions included in Option 4.1.3.a would mitigate this negative impact as Member States could support immature technologies with dedicated support schemes. Moreover, the progressive phase-in of this sub-option would give RES-e technologies the time to prepare for the changes.

The obligation to grant aid with a competitive bidding process is viewed negatively by seven Member States and a large majority of RES-e producers and non-profit organisations. Two Member States and a few industry stakeholders however agree. A large majority of stakeholders also requested introducing flexibility to influence the technology mix as included in option 4.1.3.a.

Small installations are only subject to the baseline option as they may be poorly suited to meet more demanding requirements. The **threshold for small installations** will impact technologies in different ways. In the PV sector, for example, installations tend to be relatively small (in the range of few tens to few hundreds kW) in the residential and commercial sector. Installations on large industrial rooftops may reach installed capacity of

[85] European Commission (2013): "European Commission guidance for the design of renewables support schemes", SWD(2013) 439 final.

several hundred kW. Ground mounted, utility scale installations normally exceed 1 MW and usually have lower production costs than the small scale facilities. Utility-scale PV plants account for approximately a quarter of the total European PV Market. Onshore wind farms have installed capacities higher than several tens of MWs with small installations representing a very small market share. Mini-Hydropower plants have installed capacities below 1 MW. Biomass electricity is normally produced in relatively large plants. Biomass CHP plants dominate the market producing approximately two thirds of the electricity output from biomass[86]. It is estimated that approximately 65% of the CHP plants in Europe have rated capacities of more than 1 MW.[87] The remaining third of biomass electricity is produced in larger plants (e.g. co-firing plants). Several technologies –such as solar PV- are scalable to a good extent. Plant size and market segmentation are likely to be influenced by policy design, as much as by technology constraints. Notable exceptions to scalability/modularity includes offshore wind power where economies of scale are important to bring down costs.

Impact on energy users (household, commercial and industry consumers)

As already set out in the previous section, the features in option 4.1.2 may lead to opposing effects. On the one hand, they might increase the perceived risk and therefore investment cost of RES-e producers, therefore requiring a higher price as compared to the baseline. On the other hand, the option improves the market responsiveness of RES-e producers, making them receptive to price signals and rewarding performance. In addition, a minimization of total system cost is expected. Due to the opposite directions of these impacts, it is difficult to establish or quantify the net effect.

In option 4.1.3 all technologies will compete in bidding rounds.[88] At the outset, it should be stated that support schemes based on competitive bidding can always do at least as well as those based on administratively set remuneration if only the tariff/premium rate calculated in this regard is used as a starting point (maximum reserve price). However, well designed competitive bidding support schemes can lead to lower support levels, thus promoting improvements in cost-efficiency.

In this regard, the Dutch SDE+ scheme shows[89] substantial cost savings. According to the Dutch government, under the previous administratively established and technology-specific support levels, EUR 1.5 billion instead of EUR 2.5 billion would have sufficed to deploy the same amount of renewable energy. The savings could have therefore been of up to EUR 1 billion or 40% of the total support costs.[90] It should again be noted that the Dutch scheme includes all technologies in the competitive bidding, incentivising all technologies to compete. This example gives an idea of the magnitude of the savings that could possibly be achieved by a competitive bidding scheme. Another example is Brazil, where the cost of wind power was

[86] EurObserv'er (2012): "The state of renewable energies in Europe".
[87] According to industry estimates of the Biomass Cogeneration Network.
[88] Small installations are exempted from these requirements, as the baseline scenario would continue to apply to them.
[89] Tweede Kamer (2011-2012): Stimulering duurzame energieproductie, Brief van de minister van Economische Zaken, Landbouw en Innovatie, 31 239, nr. 125.
[90] In 2012, RES projects that would otherwise have required a budget of EUR 4 billion under non-competitive terms, were supported with a budget of EUR 1.7 billion. That is, cost savings of EUR 2.3 billion or more than 50% were achieved. (Ronald Roosdorp, 2013, Renewable energy in the Netherlands, Dutch Ministry of Economic Affairs, Agriculture & Innovation, http://ec.europa.eu/competition/state_aid/modernisation/roosdorp_en.pdf).

halved since the introduction of auctions, even though it has to be noted that also other favourable circumstances played a role.[91]

The cost-efficiency gains are principally due to the ability to reveal price information. This means that due to the information asymmetry between RES-e generators and the regulator, the latter does not have all the relevant information to determine a tariff/premium in line with industry costs. A bidding process, if appropriately designed, should lead RES-e generators to bid at the lowest rate,[92] therefore revealing to the regulator information about the cost structure in the industry. This is shown by the Dutch case where the vast majority of applications (85%) in the first bidding phase came from technologies expected to require support higher than the offered subsidy level. Even solar PV projects, which were initially estimated to have substantially higher subsidy needs, successfully participated. In addition, as a result of the high number of applications in the first year, the Dutch regulator decreased in the second year the support from EUR 0.09 per kWh to EUR 0.07 per kWh for the first round of bidding, therefore further reducing the expenditure on RES support.

The requirements in option 4.1.3.b focus on **static efficiency**, encouraging the deployment of those RES-e technologies that currently display the lowest cost. **Dynamic efficiency**, that is the promotion of continuous technical improvements with a longer-term perspective, is not taken into account.[93] Option 4.1.3.a combines both approaches, introducing competitive bidding, but through the second aspect of the flexibility package allowing exceptions for technologies with long-term potential and for diversification, spurring further innovation.[94] In addition, the latter option allows further experience with tenders through pilots in a transitional phase, before requiring a full application of the requirements. The advantages of the latter approach were also mentioned by many respondents to the public consultation.

Lower costs of support to RES-e translate into a lower burden on Member States' budgets or on financing mechanisms in place, in turn passing through at least a part of these savings to energy users.

5.1.2. Environmental Impacts

All four options should allow reaching the European Union objectives of **20% renewable energy target** by 2020. They are therefore fully consistent with policies currently in force. Actual deployment of renewable energy generation will depend more on the continuity and predictability of the national support framework than on the design features of support schemes. With the adequate implementation of the national aid schemes, the environmental impact of the four options should be comparable.

Option 4.1.2 proposes provisions (balancing obligations and direct marketing) that are already tested in several Member States. There is little risk that this Option will hamper reaching the 2020 targets.

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[91] Policy Exchange (2013): "Going, going, gone – The role of auctions and competition in renewable electricity support", http://www.policyexchange.org.uk/images/publications/going%20going%20gone.pdf .

[92] As already stated, this may include an envisaged rate of return.

[93] Resch et al. (2013): "Coordination or Harmonisation? Feasible Pathways for a European RES strategy beyond 2020".

[94] It has been estimated that cost-effectiveness is best promoted by one auction open to all technologies (Policy Exchange (2013): "Going, going, gone – The role of auctions and competition in renewable electricity support", http://www.policyexchange.org.uk/images/publications/going%20going%20gone.pdf .)

On the other hand, the competitive bidding introduced in Option 4.1.3 may hamper reaching the targets if it results in underbidding. The flexibility features proposed in Option 4.1.3.a would however mitigate this negative risk.

The results obtained by the Dutch scheme in deployment of RES are encouraging. In a submission to the European Commission the Dutch Ministry for Economics estimates that the SDE+ scheme of 2011 and 2012 will add 0.4 percentage points and 0.7 percentage points respectively to their renewable energy target.[95]

The support schemes in place until 2020 should allow developing the technologies necessary for reaching the **2030 targets**. As already mentioned, competitive bidding as proposed in option 4.1.3.b might hamper the development of non-mature technologies which may in turn harm the long term deployment of RES-e. The risk of this negative impact should be mitigated by Option 4.1.3.a as Member States additionally can provide tailored support to those innovative technologies.

5.1.3. Social Impacts

In general, it has been estimated that RES overall can stimulate moderate **economic growth** in the EU with a potential positive effect on employment, depending on the development of energy costs.[96] The total **job potential** of the renewable energy sector is estimated at 3 million jobs in 2020.[97] At the end of 2010, the EU renewable energy industry contained 1.1 million jobs with the main employers being solid biomass (273,000), PV (268,000) and wind (253,000). It has been put forward that the promotion of innovative renewable energy technologies is likely to incentivise more job creation than approaches mainly focused on already mature technologies.[98] In this regard, Option 4.1.3.b with its focus on static efficiencies may lead to lower job creation. Option 4.1.3.a on the other hand allows for flexibility to give specific support to innovative technologies with long-term potential, therefore supporting the aforementioned additional employment.[99]

5.1.4. Impact on Member States

The following table is adapted from the Commission Staff Working Document "European Commission guidance for the design of renewables support schemes"[100] and shows the status at the time of the report of support schemes in Member States with respect to balancing obligations and FIT/FIP. Only support schemes with FIP and/or quotas and with balancing obligations would be in line with option 4.1.2.

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[95] Ministerie van Economische Zaken (2014): Voortgangsrapportage, Energie uit hernieuwbare bronnen in Nederland 2011-2012, http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2014/01/20/voortgangsrapportage-energie-uit-hernieuwbare-bronnen-in-nederland-2011-2012-richtlijn-2009-28-eg.html.

[96] "EmployRES – The Impact of renewable energy policy on economic growth and employment in the European Union", http://ec.europa.eu/energy/renewables/studies/doc/renewables/2009_employ_res_report.pdf.

[97] European Commission (2012): "Exploiting the employment potential of green growth", SWD(2012) 92 final.

[98] European Commission (2012): "Impact Assessment accompanying the document Renewable energy: a major player in the European energy market", SWD(2012)149 final.

[99] European Commission (2012): "Impact Assessment accompanying the document Renewable energy: a major player in the European energy market", SWD(2012)149 final.

[100] European Commission (2013): "European Commission guidance for the design of renewables support schemes", SWD(2013) 439 final.

Table 5: Balancing and FIT/FIP provisions. Source: European Commission, 2013(*).

Member State	Balancing	FIT/FIP
Austria	None	FIT
Belgium	Full	Quota
Bulgaria	None	FIT
Croatia	None	FIT + Other
Cyprus	None	FIP
Czech Republic	None	FIT + FIP
Denmark	Full	FIP
Estonia	Full	FIP
Finland	Full	FIP
France	None	FIT
Germany	Partly	FIT + FIP
Great Britain	Partly	Quota + FIP
Greece	None	FIT
Hungary	Partly	FIT
Ireland/N.	Partly	FIT/(SEM?)
Italy	Partly	FIT + FIP + Other
Latvia	Partly	FIT (FIP planned)
Lithuania	None	FIT
Luxembourg	None	FIT
Malta	None	FIT
Netherlands	Full	FIP
Poland	Full	Quota (FIT planned)
Portugal	None	FIT
Romania	Partly	Quota
Slovakia	None	FIT
Slovenia	Partly	FIT + FIP
Spain	Full	FIT + FIP
Sweden	Full	Quota

*This table shows the situation as of the time of writing the report. The level of information is insufficient to assess if measures constitute state aid and/or are compatible with state aid rules.

It can be seen that the majority of Member Stats use FIT schemes, while often also offering a FIP option. Most of these schemes, if they were to be re-notified, would have to be adapted to different degrees to comply with the market integration requirements of Option 4.1.2. However, Member States have a large margin of discretion to design their support schemes. As mentioned under the baseline scenario, it has to be taken into account that several Member States are currently reviewing their aid schemes for RES-e, generally moving towards FIP.

Options 4.1.3.b would require an overhaul of nearly all existing State aid schemes, if they were to be re-notified, with the Netherlands being one of the few Member States with a support mechanism based on competitive bidding. This **regulatory risk** associated to changing support schemes could be mitigated by the flexibility features proposed in Option 4.1.3.a thanks to the exceptions clauses and the progressive phase-in approach. This was also a point raised by many Member States in the third public consultation.

Finally as only support schemes that need to be (re)notified are affected by the options, Member States with approved schemes will be unaffected until the schemes expire.

5.1.5. Administrative burden

The additional administrative burden for undertakings should be limited for Option 4.1.2, but could increase considerably with Option 4.1.3b. In particular, tenders could place high administrative burdens on both **RES-e producers** and **national administrations**, depending on their design. Other auction schemes, such as descending clock auctions, have shown considerably lower transaction costs. It is estimated that the flexibility package of Option 4.1.3.a will reduce this administrative burden considerably, allowing for a transition period in phasing-in auctions and further exceptions.

5.2. Impacts of the options under the Policy area "Exemptions/ reductions from RES financing"

5.2.1. Economic and social impacts – Impacts on electricity-intensive users and Member States

The economy-wide impact on employment or output of the options considered is difficult to assess. Any such assessment would consist of the following steps, each of which carries uncertainties:

- The impact of the Guidelines on the charges that Member States impose on EIUs.
- The impact of (changes in) RES charges on firms' international competitiveness depends on their ability to pass on costs.
- It is difficult to predict the impact of changes in firms' competitiveness on output and employment in a given sector.
- Changes in sectoral output / employment need not necessarily be reflected in changes in economy-wide output / employment, at least in the long run. However, there may be transitional impacts on economy-wide employment as some sectors decline and others grow.

Below we assess each of the options against the following criteria:

- Macroeconomic impacts and preserving EU industrial competitiveness (in particular, we give some sense of the significance of the sectors affected)
- Minimising distortions to competition and trade within the EU
- Distributional impacts on different Member States

Option 4.2.1 - Do not include compatibility criteria

This is the baseline scenario. The Guidelines would not include any reference to exemptions from indirect costs of RES financing costs in electricity prices.

Several exemption mechanisms from RES costs appear to be already in place in some Member States. These mechanisms, when involving State aid, will have to be reviewed directly under the Treaty. Therefore, the impacts are difficult to predict. However assessing aid schemes involving exemptions from RES financing costs directly under the TFEU may not clearly guarantee EU industrial competitiveness.

Option 4.2.2 - Use the approach of the ETS Guidelines

Annex II of the ETS Guidelines contains 15 sectors that would be eligible in full or part. These are listed at Annex 6. For the purpose of the analysis below, we assume all sectors are eligible in full.

Compared to the Baseline, this option increases the certainty faced by the 15 sectors that would be eligible. However, the ETS Guidelines were targeted at addressing carbon leakage and not directly at the competitiveness issues associated with cumulative electricity cost burdens. As such, they are unlikely to best meet the objective of safeguarding EU industrial **competitiveness**. Several stakeholders (Member States, EIUs and trade associations) commented in their responses to the consultation that use of the ETS guidelines would not be appropriate.

The requirement for a minimum 20% own contribution, irrespective of company size or eligible sector, should ensure that all companies within eligible sectors face the same marginal costs and that competition is not distorted within Member States. We note that not all Member State schemes currently require companies eligible for an exemption/discount to pay the same per MWh charge. While there is still scope for RES charges and required own contributions to vary across Member States, such differences should be seen in the context of wider market conditions and tax/regulatory arrangements in Member States.

Table 7 below shows the **eligible sectors' share of industrial GVA** for selected **Member States**. These would account for 5.3% of EU27 industrial GVA and 4.4% of EU industrial employment. However, the impacts would differ across Member States: the 15 sectors would account for a higher-than-average share of GVA in Germany, but a lower share in the other Member States. We would expect industrial **employment** to be correlated with industrial GVA.

Option 4.2.3 - Use adjusted ETS Guidelines

Under this option, 65 **sectors** would be eligible in full. These are listed at Annex 6.

Compared to Option 4.2.2, this option more clearly safeguards EU industrial **competitiveness**, by ensuring trade-intensive sectors with high cumulative electricity costs and are eligible. Annex 5 explains the justification for the choice of thresholds in more detail. As for Option 4.2.2, this option would ensure competition within Member States was not distorted.

Table 7 below shows the eligible sectors' share of industrial GVA. These would account for 15.2% of EU27 **industrial GVA** and 15.5% of EU industrial **employment**, a much greater share than under Option 4.2.2. The distributional impacts across **Member States** would differ, compared to Option 4.2.2. The 65 sectors would account for a higher-than-average share of GVA in Spain and Poland, but a lower share in the other Member States. We would expect industrial employment to be correlated with industrial GVA.

Option 4.2.4 - Use adjusted ETS Guidelines criteria, with additional company-specific eligibility criteria

Under this option, 65 sectors would be eligible in full. Companies with an electricity intensity of greater than 25% from 121 additional sectors with a trade intensity of greater than 4% would also be eligible.

Compared to Option 4.2.3, this option further safeguards EU industrial competitiveness, as it ensures electricity-intensive companies within sectors that are less electricity intensive can be eligible. The company-specific approach could be argued to give rise to distortions within sectors: for example, given two otherwise identical companies in the same sector, a company with an electricity intensity of over 25% might be eligible but one with a lower electricity intensity might not be. However, companies in the same sector do not always carry out the same business activity.

In the absence of company-specific electricity intensity data it is not possible to say with precision how significant the impacts could be. Table 7 below shows the share of industrial GVA for the 186 (65 + 121) sectors combined. These would account for 61.8% of EU27 **industrial GVA** and 72% of EU industrial **employment**, a much greater share than under Option 4.2.3, although not all companies would be eligible, so these figures should be seen as an upper bound. The distributional impacts across Member States would differ, compared to Option 4.2.2 and Option 4.2.3. The 186 sectors would account for a higher-than-average share of GVA in Germany and Italy, but a lower share in the other Member States.

Option 4.2.5 - Use adjusted ETS Guidelines criteria, with additional company-specific eligibility criteria, and caps on the amount of surcharges payable by undertakings

The eligible companies would be the same as for Option 4.2.4 above. However, compared to Option 4.2.4, this option gives more certainty to EU industry on the maximum burden they would face, thereby further safeguarding EU industrial **competitiveness**.

To illustrate the impact of the proposed caps, we consider two representative electricity-intensive eligible companies, facing an electricity price of 150 EUR/MWh.

- A large electricity-intensive user with a GVA of 150 EUR millions whose annual electricity consumption amounts to 1000 GWh. The electricity costs represent 50% of its GVA, so it would face a cap on RES charges of 2.5% of GVA;
- A smaller electricity-intensive user with a GVA of 0.75 EUR millions whose annual electricity consumption amounts to 5 GWh. The electricity costs represent 15% of its GVA, so it would face a cap of 5%.

For both companies, we assume that the RES financing costs amount to 25 EUR/MWh (so an own contribution of 20% x 25 = 5 EUR/MWh), towards the mid-point of the range of RES financing costs in the EU per MWh consumed (not taking into account exemptions to large electricity-intensive users).

The results of the two proportionality scenarios ("uncapped" and "capped") are summarised in Table 6.

Table 6 Illustrative examples of impact of GVA caps (EUR)

	Uncapped	With cap
Large electricity-intensive user	**5,000,000**	**3,750,000**
Smaller electricity-intensive user	**25,000**	**25,000***

*Note, in this example, the cap does not bind for the smaller EIU.

As discussed in Annex 5,, a cap based on GVA could lead to some distortions of competition within sectors. The significance of this impact depends on the extent to which the cap is likely to be binding, and so needs to be offset against the benefit of the cap to individual companies.

Member States with higher RES charges will tend to benefit more from the existence of caps. However, as above, such differences should be seen in the context of differences in wider market conditions and tax/regulatory arrangements between Member States.

Table 7 The exempt sectors' share of industrial GVA (average 2009-2011)

Option	UK	FR	DE	IT	ES	PL	EU27
4.2.2	2.93%	4.43%	7.33%	3.22%	5.25%	3.80%	5.27%
4.2.3	9.56%	12.82%	15.22%	13.73%	16.09%	18.69%	15.17%
4.2.4 / 4.2.5 (upper bound)	48.58%	59.49%	76.42%	66.51%	54.96%	56.48%	61.81%

Source: Commission calculations based on EUROSTAT data. **Industrial GVA" is defined as the 2009-11 average GVA in NACE mining and manufacturing sectors B-E**.

5.2.2. Environmental impacts and coordination with other policies

There is no direct environmental impact of exemptions from RES financing costs, since this measure only deals with the financing, not the direct development of RES production.

Options 4.2.2 to 4.2.5 are in line with the RES support policy as they allow MS to keep supporting RES in line with their 2020 national targets, while mitigating the relocation risk due to RES financing costs.

5.2.3. Administrative burden

None of the options directly create administrative burdens to companies; Member States decide whether or not to grant aid to EIUs, and therefore the extent to which EIUs face reporting obligations. In addition, administrative burdens need to be viewed in the context of the benefit of aid to EIUs.

However, while we have not quantified the level of administrative burdens that might arise indirectly as a result of the proposed options, a qualitative assessment is possible. Option 4.2.2 limits burdens to the greatest extent, as it limits eligibility to the lowest number of companies. Companies only need to demonstrate that they belong to a particular 4-digit NACE code sector and provide electricity consumption data, which should involve minimal cost. Option 4.2.3 could lead to an increase in burdens in line with the increase in the number of sectors covered. Option 4.2.4 would further increase admin burdens, due to both the increase in the number of eligible companies and the need for these additional companies to submit electricity consumption and GVA data at the company level ne Member State commented in its response to the consultation that the need to compile GVA data may entail a burden for .smaller companies in particular. While Option 4.2.5 would not result in additional eligible companies compared to Option 4.2.4, it would result in a greater burden, as all companies would need to submit GVA data in order to benefit from the caps on the own contribution.

5.3. Impacts of the options under the Policy area "Aid to measures to ensure generation adequacy"

5.3.1. Economic impacts

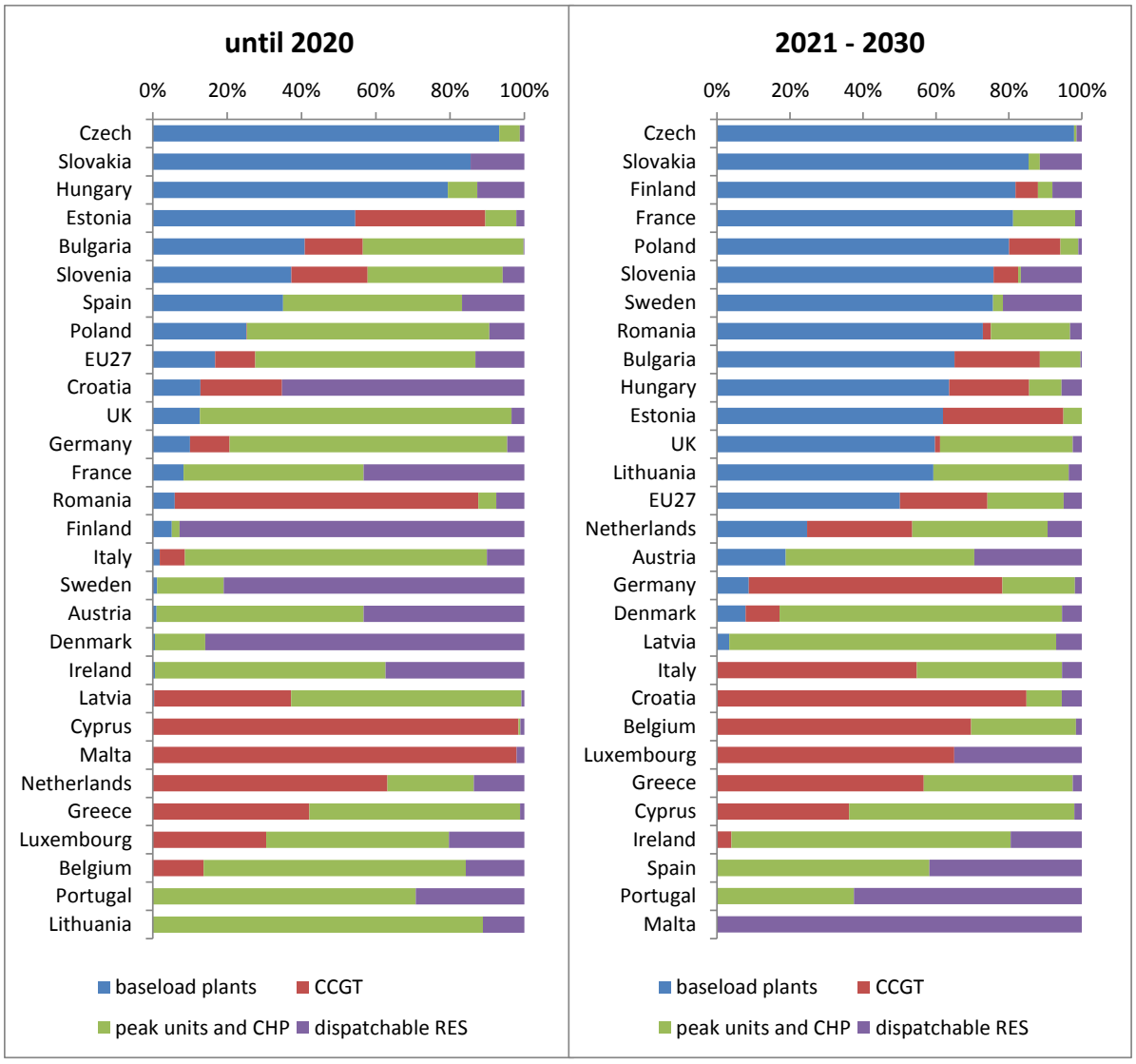
In case of market failures, Member States may introduce generation adequacy measures. These measures may not constitute State aid. If they do, they would be subject of State aid control rules. The three options considered propose drawing from the principles in the Commission's Guidance paper where market-based mechanisms are encouraged once the Member State demonstrates the need for such measure.

The impact of these options depends on the ability of the market to provide market signals to incentivise investment in generation capacity or in the availability of alternative options: demand-response measures, new infrastructure, etc.

<u>Impacts on electricity generators and other generation adequacy providers</u>

The modelling work undertaken by Cowi et al shows that the projected required investment would amount to 211 GW across the EU-28 by 2030, 69% of which would be commissioned after 2020. In a well-functioning market model, the projected investment would have the following distribution by dispatchable technology and Member State (Figure 6):

Figure 6: Structure of projected investment (excl. investment under construction)



Source: Cowi et al. June 2013[101]

Terms used in Figure 6:
Baseload: Plants delivering electric power at a constant rate .
CCGT: Combined Cycle Gas Turbine power plants
Peak units: power plants that generally run only when there is a high demand for electricity ("peak demand")
Cogeneration or combined heat and power (CHP): means the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy
Dispatchable RES: refers to renewable energy sources (RES) that can be dispatched at the request of power grid operators. The selection or drawdown of the power plants for generation is called dispatching

In the absence of guidance Member States may focus on investments in new generation facilities. This may however aggravate the generation adequacy problem as the construction of subsidised new plants may push existing facilities further down the merit order, potentially leading to additional closures of existing power plants. This would lead to a distorted picture of the EU energy landscape which deviates most from the projections in Figure 6 above.

[101] Capacity mechanisms in individual markets within the IEM. Cowi et al. June 2013, figure 14, p. 71. http://ec.europa.eu/energy/gas_electricity/consultations/doc/20130207_generation_adequacy_study.pdf

Option 4.3.3 on the contrary would result in the least deviation from the results depicted in Figure 6 above as it introduces stronger competitive requirements. It shows that in most Member States, the share of non-dispatchable RES-e is lower in 2030 than in 2020. Option 4.3.2 introduces the same strong necessity requirements but does not introduce strong competitive elements in the design of the measure. It should therefore encourage Member States to find alternative measures but if none is available, would result in larger deviations from the figure depicted above. Option 4.3.3 would also render benefits to alternative generation adequacy providers (energy infrastructure, Demand Side Management) in detriment of electricity generators.

Impact on IEM and cost-efficiency

Option 4.3.3 would have several benefits compared to the other two Options.

Firstly, it would minimise the fragmentation of the Internal Energy Market. This option promotes the participation of capacity in other Member States to the generation adequacy mechanism. Additionally investment in new interconnectors is promoted, both directly (if possible they should be allowed to participate to the generation adequacy mechanism) and indirectly (the participation of cross-border capacity could provide investment incentives for new interconnection capacity).

Secondly, there would be cost-efficiency gains by promoting the use of competitive bidding processes, technology-neutrality and equal access to existing and new capacity.

The preference in the published Draft Guidelines given to non-fossil generation was heavily criticised in the third public consultation round by industry respondents (about half are at least concerned with this "priority treatment"). In most cases arguing that capacity mechanism should pursue one goal only: security of supply and therefore the technology bias would have negative effects on the internal energy market. In the view of these respondents, other instruments are available to reduce CO_2 emissions, such as the European Emissions Trading scheme. They added that this "priority treatment" would conflict with the principle of technology neutrality and argue that this may not lead to the most cost-effective outcomes (some respondents argue that cost-effectiveness should be the overarching aim of state aid policy in the field of generation adequacy). Most environmental organisations welcomed the "preferential treatment", but however would have like to see more flexibility for MS to apply carbon emission ceilings of some sort.

5.3.2. Environmental impacts and coordination with other policies

Figure 6 above shows that a large share of dispatchable capacity may be provided by fossil-fuel power plants which could result in additional CO_2 emissions. The baseline and option 4.3.2 mainly focus on the necessity of the CRM's designed by Member States. Option 4.3.3 through an increased focus on the design of the CRM, minimises the environmental impact of State aid measures by:

- forcing Member States to demonstrate that generation adequacy cannot be addressed through alternative measures to commissioning new capacity: e.g. demand-side management response measures; new energy infrastructure

- in principle not rewarding investments in generation from fossil fuel plants unless it can be shown that a less harmful alternative to achieve generation adequacy does not exist

- allowing the introduction of non-cost related criteria in the design of the mechanism such as environmental criteria.

5.3.3. Social Impacts

There is insufficient data available to quantify the social impact of the three options. In addition, as noted in section 5.2.1 above, it is very difficult to translate job losses in a particular sector into impacts on economy-wide employment. In addition, it should be noted that the operation of power plants is not particularly labour intensive so impacts described below on employment in the power sector are expected to be small viewed in the context of the whole economy.

Option 4.3.2 would ensure a more productive use of economy-wide resources in ensuring generation adequacy by ensuring CRMs are really necessary. This may be reflected in an increase in economic output across the EU, and possibly, in turn, economy-wide employment. In particular this option promotes of alternative means of providing capacity (e.g. demand side management and storage) may result in the further development and expansion of what are now still infant industries (e.g. DSM companies), in turn leading to job creation in those sectors.

5.3.4. Impact on Member States

According to the report by Cowi et al., in 2011 there were at least 8 capacity mechanisms implemented in Europe:

Table 8: Existing capacity mechanisms in Europe

Design	Country (name)	Cross-border participation
Strategic reserve	Sweden/Finland (Peak load reserve11)	No
	Poland (Operated by TSO)	No
	Norway (Operated by TSO)	No
Capacity payments	Ireland/Nothern Ireland (Capacity Payment Mechanism)	Collaboration
	Spain/Portugal (Pagos por capacidad)	No
	Italy	No
	Greece	No

Source: Cowi et al. June 2013[102]

As for the **regulatory risk** linked to potential changes of the existing schemes only one of the mechanisms identified by COWI et al., has been subject to assessment by the European

[102] Capacity mechanisms in individual markets within the IEM. Cowi et al. June 2013, Table 3 p. 37. http://ec.europa.eu/energy/gas_electricity/consultations/doc/20130207_generation_adequacy_study.pdf

Commission, which was found not to constitute State aid.[103] The Commission has not adopted decisions on the other measures. Thus the Commission has insufficient information to establish whether the mechanisms identified by COWI et al. constitute State aid. However, if these mechanisms were to constitute State aid, Member States would most likely need to redesign them to different degrees to meet the compatibility criteria proposed in Option 4.3.2 and Option 4.3.3 alike. In relation to cross-border participation, for instance, all CRM's mentioned in the table above but one would need to be amended to be brought in line with Option 4.3.3. Furthermore if they constitute State aid, it is likely that some mechanisms would even need to be amended if assessed directly under the Treaty.

It can therefore be said that there is very limited case-practice in this area. Options 4.3.2 and 4.3.3 are likely to result in less **assessment time** periods than the baseline as they establish compatibility criteria and therefore provide guidance to Member States (in line with the guidance provided by the Commission on 5 November 2013[104]). Option 4.3.3 would be more burdensome than option 4.3.2 as it imposes more conditions on the design of the measure.

Generally, stakeholders welcomed the assessment principles and criteria proposed in the draft Guidelines (Option 4.4.3). A minority (about one third of responding public authorities and at least three industry respondents) however questioned what they call the "one size fits all" approach of the draft Guidelines, leaving little scope for MS to take local specificities into account. This argument would be in favour of the baseline scenario or Option 4.4.2.

5.3.5. Administrative burden on undertakings

The administrative burden on undertakings will depend on the design features of CRMs developed by Member States. In principle, Member States could develop design features to different degrees under all three options (including the baseline), although they are more constrained under Option 4.3.3 which prescribes certain aspects. The benefit of the approach in Option 4.3.3 is that there will be more legal certainty for both Member States and undertakings in relation to the compatibility of CRM's with state aid rules, which indirectly may result in less administrative burden for both.

5.4. Impacts of the options under the Policy area "Aligning and streamlining"

5.4.1. Economic, social and environmental impacts

Option 4.4.2 proposes aligning the compatibility criteria with the Common Assessment Principles outlined in the SAM Communication. The changes proposed in this option attempt to standardise the compatibility criteria across all State Aid Guidelines.

The codification of case practice results in no impacts other than increasing the transparency of the Commission's assessment framework.

The main expected impacts are linked to an improved design of State aid measures. The option would not however result in less aid but instead better targeted to meet energy or environmental objectives.

[103] State aid N 475/2003 – Ireland
[104] Cf.: SWD(2013) 438 final. 5 November 2013

In addition, the new SAM requirement to evaluate schemes with the highest potential distortive effects has been estimated to involve a cost of around 0.1% of the annual budget of the scheme (for multiannual schemes, this figure may be lower). Option 4.4.3 proposes to shift aid expenditure granted under the Guidelines to GBER. It will therefore have limited economic, social or environmental impacts.

5.4.2. Impact on simplification: timeframes to put the aid into effect

The alignment sought in the compatibility criteria across all sectoral and horizontal Guidelines (option 4.4.2) should facilitate the preparation of notifications eventually reduce the assessment time across all State aid control policies.

Option 4.4.3 could result in a steep increase of measures that will not require an ex-ante assessment. DG COMP has examined a sample of the 50 largest notified measures under EAG in terms of yearly expenditure in 2012. The analysis of the possible measures from existing EAG categories[105] that could be block exempted in the future indicates that the number of measures that could be shifted from the Guidelines to the new GBER would range from 14% to 27%. For schemes only, this range could vary between 18% and 41%. (see Figure 7)

As regards the amount of aid, the analysis covered all cases notified in 2012 falling under the scope of EAG. The amount of aid granted that could be shifted from the Guidelines to the new GBER and therefore block exempted would range between 24% and 85%. (see Figure 9)

These estimations are based on the following assumptions:

- Member States would have designed their measures in line with the proposed GBER conditions.
- For operating aid to RES, it is assumed that the Member States would have designed support mechanisms based on competitive bidding.

[105] New measures which may be notified by Member States in the future (as a result of new categories in the new Guidelines) or because of new evaluation requirement are not included. The analysis does not cover cases which the Member States would still want to notify for legal certainty reasons

Figure 7: Total non-GBER environmental and energy measures adopted in 2012. Source: DG COMP

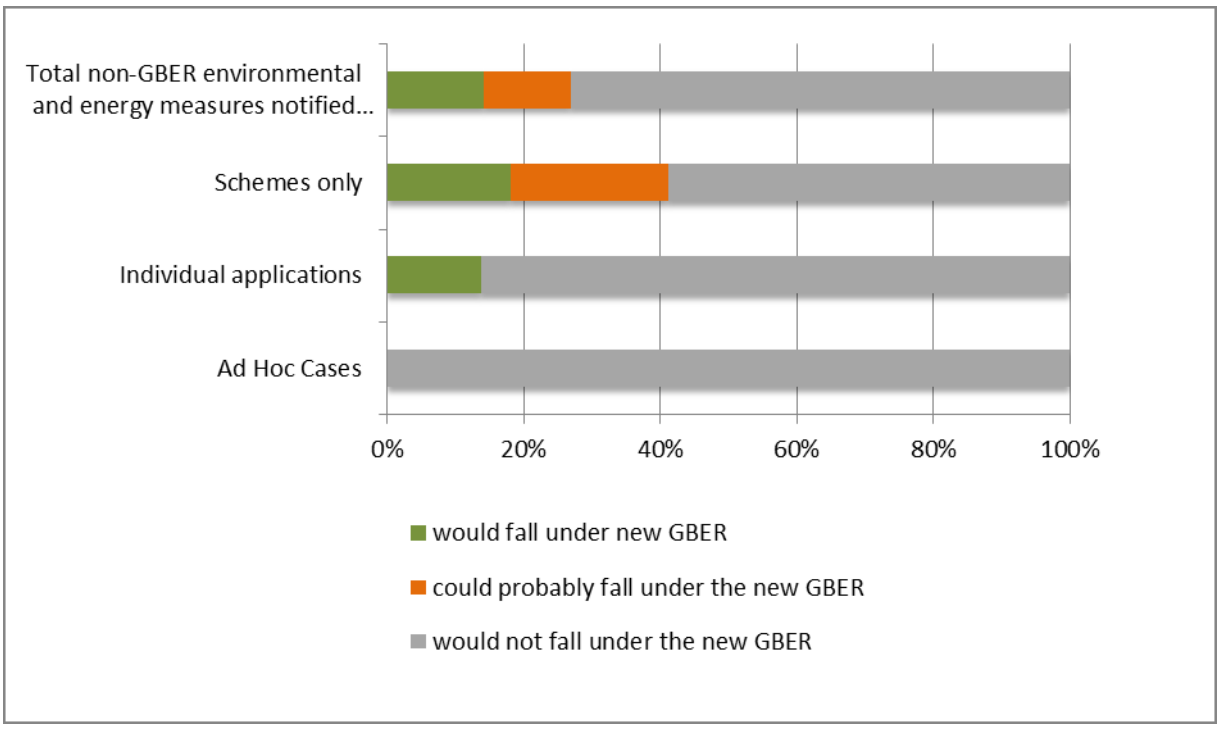
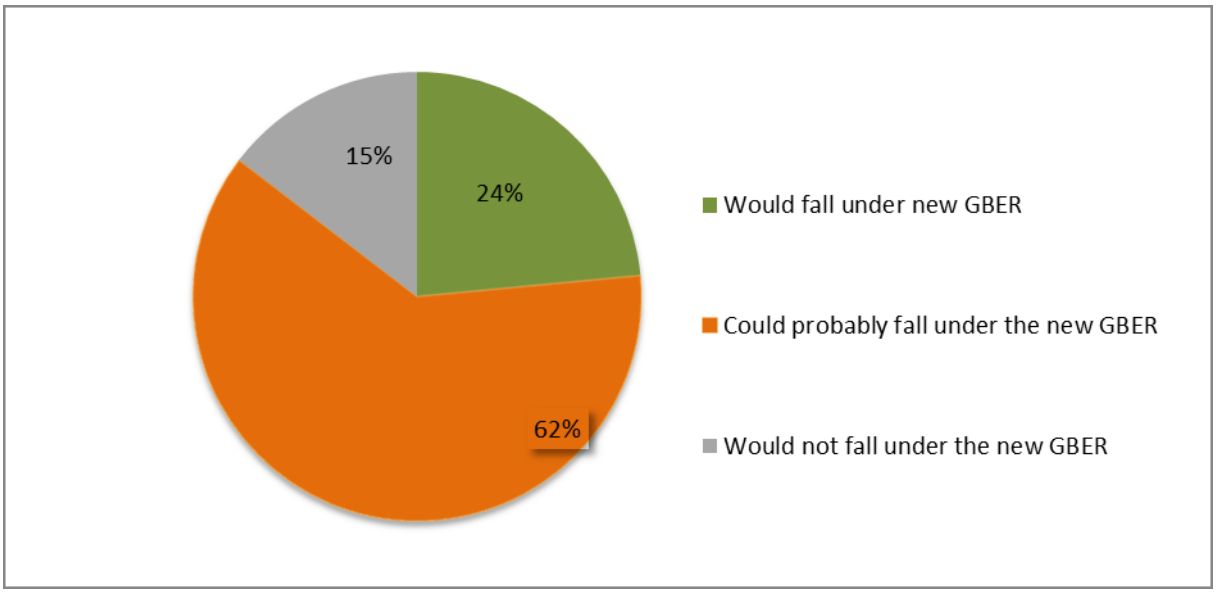


Figure 8: 50 non-GBER environmental and energy measures with the highest spending in 2012. Source: DG COMP



The actual figures would depend on the ability of Member States to redesign suitable EAG measures into "new" GBER measures.

As a result up to a quarter of the notified cases (mostly schemes) could be shifted to GBER. Member States will be able to implement those measures immediately since there would be no need to notify them and wait for the Commission's assessment. This would address the concerns of some beneficiaries and Member States about excessive long periods from notification to adoption.

5.4.3. Coordination with other policies

Option 4.4.2 increases the level of coordination compared to the baseline as it would lead the revised EAG to converge with Guidelines in other State Aid Policy areas. The combination of Options 4.4.2 and 4.4.3 would lead to the highest level of convergence as the scope of GBER and EEAG would be further aligned.

5.4.4. Administrative burden

As a result of option 4.4.2, Member States would have further incentives to design schemes with harmonised features across state aid instruments. This may result in simpler rules for potential beneficiaries, in particular for new entrants.

The new transparency requirement triggered several comments during the public consultation. Member States were concerned that this new provision would cause a disproportionate burden and costs to set up and maintain the IT systems required. Member States will therefore have flexibility to implement this requirement.

Option 4.4.3 will potentially result in a greater reduction of the administrative burden. Designing measures that are automatically compatible with the internal market removes the obligation on Member States to present notifications to the Commission. In addition, this option gives undertakings better certainty as to their expectations to obtain aid for their investments. For the Commission it would allow focusing its resources in the analysis of the cases that have a higher potential to distort competition.

6. COMPARING THE OPTIONS

Options are compared against two benchmarking criteria.

- First, against their effectiveness and efficiency to meet the specific policy objectives listed in section 3.2
- Second against the identified impacts in each policy area, taking the baseline option as a reference

This report uses the qualitative scale provided below to weigh the options. An explanation is provided below each score.

Table of symbols	
Significant negative impacts or costs	--
Minor negative impacts or costs	-

No impact	0
Minor positive impacts or cost savings	+
Significant positive impacts or cost savings	++

6.1. Comparison of the options in policy area "Support schemes to electricity from renewable energy sources"

Options / Objective/ Impact	Option 4.1.1 (Baseline)	Option 4.1.2	Option 4.1.3.a	Option 4.1.3.b
Objective: Assist achieving the 2020 renewable energy targets while minimising the distortive effects of support schemes	**0** Target will be achieved, but current identified problems will persist.	+ Targets will be achieved, while more market integration will reduce distortive effects.	++ Targets will be achieved with higher cost-savings and less market distortions. Negative effects mitigated by the flexibility package	**0** Targets will be achieved, static efficiency will be maximized, but likely at the cost of less innovation.
Economic Impacts				
RES-e producers	**0** Revenues by RES-e unaffected unless unsustainable expenditure lead MS to change the schemes.	**-/0** Costs to RES-e to meet market obligations. Several MS are however already integrating RES-e producers in the market (baseline).	**0/+** Competitive bidding will encourage RES-e producers to invest in efficient solutions. Flexibility option will reduce the negative effect on RES-e producers that choose immature technologies.	**-/+** The solution will benefit efficient RES-e producers. However it will have negative effects on RES-e producers that opt for immature technologies, potentially hampering long term deployment.
Energy users	**0** Administratively set support levels do not promote cost efficiency.	**0/+** Market exposure of RES-e producers likely to reduce system costs.	+ Competitive bidding should result in lower deployment costs. With flexibility package also long term costs are taken into account, although increasing costs in the short/mid-term compared to a genuine competitive process.	++ Only the most efficient technologies will be deployed at the expense of more expensive immature technologies.
Environmental	**0**	**0**	**0**	**-**

Options / Objective/ Impact	Option 4.1.1 (Baseline)	Option 4.1.2	Option 4.1.3.a	Option 4.1.3.b
impact	Support mechanisms proved successful in deploying RES.	Deployment unaffected.	Deployment unaffected due to flexibility package	Similar to other options up to 2020. However immature technologies important for 2030 targets might not be deployed.
Social impacts	**0** Moderate economic growth from RES possible.	**0** Same as baseline.	**0** Flexibility allows for exceptional treatment of innovative technologies that create same level of employment as in the baseline.	**-** Focus on static efficiencies favours more mature technologies and thus leads to lower job creation.
Impact on Member States	**0**	**0** Limited changes to adapt current support schemes.	**-/0** Requires changing almost all support schemes to RES-e. Flexibility and the phased-in approach could reduce regulatory risk	**--** Requires changing almost all support schemes, no flexibility.
Administrative burden	**0**	**-/0** Additional administrative burden should be limited	**-/0** Administrative burden could be significant, but the flexibility package can mitigate the impact	**-** Could place high administrative burden on both RES-e producers and national administrations.

Option 4.1.3.a is the preferred option. This option meets best the objective of the review that is, reducing market distortions and improving the cost-efficiency of RES-e support schemes. Energy users will be the stakeholder group benefitting most thanks to the expected cost-savings. The flexibility package in this option will allow reducing possible negative impacts for instance by a progressive phase-in.. In addition Member States will maintain the necessary flexibility with regard to the technology mix called by most respondents in the last public consultation in view of meeting long term goals, such as the 2030 targets.

6.2. Comparison of the options in policy area "Exemptions/ reductions from RES financing"

Options / Objective/ Impact	Option 4.2.1 (Baseline)	Option 4.2.2	Option 4.2.3Use adjusted ETS Guidelines	Option 4.2.4	Option 4.2.5

Options / **Objective/ Impact**	Option 4.2.1 (Baseline)	Option 4.2.2	Option 4.2.3Use adjusted ETS Guidelines	Option 4.2.4	Option 4.2.5
Objective: Minimise distortions to competition and trade resulting from the financing of support schemes to renewable energy sources, while limiting negative impacts on the competitiveness of EU firms	**0**	**0**/+ Limits distortions, but does not fully safeguard EU industrial competitiveness	+ Limits distortions, but with somewhat increased safeguards for EU industrial competitiveness	+/++ May create some distortions, but strongly safeguards EU industrial competitiveness	++ May create some distortions, but most fully safeguards EU industrial competitiveness
Economic impact: Impact on industrial competitiveness	**0** Unclear which sectors would be deemed eligible on a case-by-case basis	**0**/+ 15 sectors eligible.	+ Includes an additional 50 sectors at risk of losing competitiveness would not be eligible, accounting for 10% of EU27 industrial GVA.	+/++ Includes potentially many more companies at risk of losing competitiveness.	++ Gives additional certainty to EU industry on the maximum burden they could face.
Economic impacts: impact on competition and trade	**0** Assessment of schemes under the TFEU should limit distortions to competition and trade.	**0** Requirement for minimum own contribution limits differences in prices faced within eligible sectors.		**-/0** Company-specific approach could create distortions within sectors, but unclear whether the impact would be significant.	**-** Cap could create distortions within sectors.

Options / Objective/ Impact	Option 4.2.1 (Baseline)	Option 4.2.2	Option 4.2.3 Use adjusted ETS Guidelines	Option 4.2.4	Option 4.2.5
Environmental impact: achieving the RES targets for energy	**0** If RES support schemes result in relocation of industry due to financing costs, MS may reduce their support schemes and not reach the RES targets	+			
		Assists the achievement of the RES targets as only the financing is affected. Indirect contribution to the targets as RES support schemes do not harm the most exposed electricity-consuming sectors.			
Impact on Member States	**0** Uncertainty for MS. Significant case-by-case analysis will be required	**(n/a)** 15 sectors would account for a share of GVA in Germany higher than the EU27 average.	**(n/a)** 65 sectors would account for a share of GVA in Spain and Poland higher than the EU27 average.		**(n/a)** Member States with higher RES charges will tend to benefit more from the existence of caps

Option 4.2.5 is the preferred option. It best meets the objective of minimising distortions to competition and trade resulting from the financing of support schemes to renewable energy sources, while limiting negative impacts on the competitiveness of EU firms. While other options might be slightly less distortionary to competition, the negative impacts on distortion of the preferred option are expected to be limited.

6.3. Options in policy area "Aid to measures to ensure generation adequacy"

Options / **Objective/ Impact**	Option 4.3.1 Baseline	Option 4.3.2	Option 4.3.3
Objective: Contribute to maintaining the required generation adequacy level of the Union's energy system while minimising competition distortions	**0** No legal certainty on how CRM's will be assessed (on the basis of the Treaty)	+ Solves the problem of generation adequacy but does not prevent market distortions or foster cost-efficiency.	++ Tackling the problem of generation adequacy and favours designs that limit competition distortions.
Impact on electricity producers (technology mix)	**0** Member States can choose specific technologies (insofar as compatible with the Treaty); they may neglect e.g. demand-side measures	+ Member States can choose specific technologies, but necessity test ensures targeted solutions.	++ Competition between different technologies (incl. e.g. demand side) ensures a more market based and holistic solution to adequacy issues.
Impact on internal energy market	**0** Design of mechanisms left to Member States. Risk of market fragmentation; uncertainty for Member States due to case-by-case assessment	+ Assesses if MS tackle underlying market failures, however still risk of market fragmentation. No requirement to include cross-border capacity.	++ Establishment of general principles for capacity markets avoid inconsistencies and fragmentation e.g. due to inclusion of cross-border dimension
Impact on energy users (cost-efficiency)	**0** Potentially high costs due to technology-specific solutions based on administratively set support schemes. Least cost-efficient option: Measures may not consider the costs and the alternatives most appropriate to address the generation adequacy problem.	+ Necessity test will limit eligible technologies and volumes. However technology-specific solutions based on administratively set support schemes will not encourage cost-efficiency	++ Necessity test will limit eligible technologies and volumes. Competitive bidding will ensure higher levels of cost-efficiency.
Environmental	**0**	**0**	+

Options / **Objective/ Impact**	Option 4.3.1 Baseline	Option 4.3.2	Option 4.3.3
Impact	Great discretion left to Member States to determine the appropriate course of action to resolve the generation adequacy problem. This may lead to investments in new generation capacity and more precisely fossil fuel generation.	Measures are tested against necessity and proportionality only – no consideration for environmental impact.	In principle investments in generation from fossil fuel plants should not be rewarded unless it can be shown that a less harmful alternative to achieve generation adequacy does not exist
Social Impact	**0** No legal certainty on how CRMs will be assessed (on the basis of the Treaty).	**0**/+ Would ensure a more productive use of economy-wide resources in ensuring generation adequacy	+ Same arguments as for option 4.3.2 plus: Promotion of alternative means of providing capacity (e.g. demand side management and storage) may result in further development and expansion of what are now still infant industries (e.g. DSM companies), leading to new employment opportunities.
Impact on Member States	**0** No case practice. Legal uncertainty for MS.	**-** Not enough information of existing CRM's to determine which would need to be amended. However, likely that several existing mechanisms may not meet this option.	**-** Not enough information of existing CRM's to determine which would need to be amended. However, likely that several existing mechanisms may not meet this option.
Administrative burden on undertakings	**0** No legal certainty in relation to state aid assessment of CRM's	**-/0** Competitive bidding –which is not mandatory- may involve administrative burden	**-/0** Competitive bidding – which is not mandatory- may involve administrative burden

Option 4.3.3 is the preferred Option as it addresses best the objective of the review. Even though some stakeholders question whether the generation adequacy problem should be dealt with under State aid rules and whether the rules should not leave more discretion to Member States, this Option has the advantage of setting a clear assessment framework, thus creating more legal certainty for all stakeholders. Option 4.3.3 moreover proposes the most market based solution for the generation adequacy problem, causing the least distortion to the Internal Energy Market and resulting in the highest cost-savings to energy users. Option 4.3.3 is also fully in line with the Union's decarbonisation objectives.

6.4. Options in policy area "Aligning and streamlining"

Options / **Objectives/ Impact**	Option 4.4.1 (baseline)	Option 4.4.2	Option 4.4.3
Objective 1: Streamline, clarify the rules and align them with the common assessment principles agreed for all State aid rules	**0**	++ For Member States: Clearer and simpler criteria, hence less time needed to prepare a notification. For the Commission, fewer request for information will need to be issued, quicker assessment of measures.	+ + As it includes the features proposed in option 4.4.2.
(1) Objective 2: Focus on the measures with the largest potential to cause competition distortions.	**0**	**0** No change	++ Most efficient use of enforcement resources. Cases will be shifted from EAG to GBER resulting in faster granting of the aid
Economic impact	**0**	+ More legal certainty for MS and stakeholders as a result of the availability of ex-ante criteria and coherent principles across SA legal texts. New evaluation requirements estimated to cost around 0.1% of annual scheme budget.	++ More certainty for undertakings and faster procedures due to absence of notification requirement means quicker implementation of projects by beneficiaries, improved forecasting of costs/benefits.
Environmental/social impact	**0**	**0** No difference to the current state of environmental protection or social impacts	+ Quicker implementation of projects by beneficiaries favours better predictability for employees and earlier achievement of the environmental objective sought.
Administrative burden: Impact on beneficiaries	**0** This option fails to address some of the concerns of beneficiaries.	+ Codification of case practice increases transparency and legal certainty for stakeholders. Simpler calculation of eligible	++ More transparency and legal certainty for stakeholders, automatic compatibility means

Options / Objectives/ Impact	Option 4.4.1 (baseline)	Option 4.4.2	Option 4.4.3
		costs.	projects can start swiftly.
Administrative burden: Impact on Member States	**0** This option fails to address some of the concerns of Member States.	+/- More consistency with other State aid policy areas and simplified requirements result in better understanding by MS, reduced time to prepare notifications, which will be of better quality. Hence no need for requests for information. Simpler calculation of eligible costs. Evaluation and transparency requirements could increase administrative burden.	++ No need for notification for cases falling under measures moved to GBER. Aid is automatically compatible and can be granted immediately.
Administrative burden: Impact on Commission	**0** Commission will still need to assess measures with low potential impact on competition.	+ Increased quality of notifications should result in reduced need for requests for information, hence faster procedures and assessment.	++ Commission can focus on more potentially distortive measures. Significant reduction of notifications expected in particular operational aid for RES.

Option 4.4.3 is the preferred option. It addresses best the objectives of the review. The streamlining of the rules results in simplification and the broader scope of GBER allows Member States to grant aid faster in cases with limited risks of distorting competition. The beneficiaries of aid are those that benefit the most from this option as aid is granted faster. Member States and the Commission also need to allocate fewer resources to the notification and processing of state aid cases.

7. MONITORING AND EVALUATION

7.1. Monitoring

In accordance with Article 108 of the TFEU, 'the Commission shall, in cooperation, with Member States, keep under constant review all systems of existing aid in those Member States'.

7.1.1. General monitoring practice for State aid

Article 21(1) of Council Regulation No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 (now Article 88) of the EC Treaty[106] provide that 'Member States shall submit to the Commission annual reports on all existing aid schemes with regard to which no specific reporting obligations have been imposed in a conditional decision […]'.

State Aid Scoreboard[107]

The State Aid Scoreboard provides information on the overall situation of State aid in each MS and on the Commission's State aid control activities. The information published in the Scoreboard is based on the annual reports submitted by MS. The Scoreboard provides information on State aid expenditure and State aid measures and describes the trends and patterns of State aid expenditure per sector, per MS and per type of aid measures. The Scoreboard also contains information on the number of aid measures or aid amounts per type of assisted area, per form of aid or aid instrument, etc.

Annual monitoring of selected State aid cases (sampling basis)

DG COMP currently monitors every year a sample of existing aid schemes (covering notified and block-exempted schemes). This ex-post monitoring exercise involves a check of the legal basis and of the list of beneficiaries and an evaluation of the implementation of the scheme for a sample of beneficiaries. It allows detecting and to correcting irregularities in the implementation of schemes by MS and therefore monitor MS' respect of the EAG rules (not its quality). The scope and methodology of the monitoring exercise has been evolving and the number of measures monitored has been increasing over the last years. The exercise encompasses schemes from all MS and from all the main categories of aid. Between 2006 and 2013, 34 environmental aid schemes were monitored, covering 6 MS. 4 schemes were monitored twice. The number of problematic schemes were 7, 3 of which related to overcompensation issues in the field of biofuels and support to renewable energy sources.

[106] OJ L 83, 27.3.1999, p. 1.
[107] See http://ec.europa.eu/competition/state_aid/studies_reports/studies_reports.html

Case practice

DG COMP's decision-making practice also provides an important tool to help improving the design of State aid rules.

7.1.2. Specific monitoring indicators for the EEAG 2014-2020 (ad hoc monitoring system)

Based on the information stemming from the transparency obligations of MS recorded in the scoreboard and DG COMP's database of cases linked to its official registry of notified State aid measures, DG COMP will monitor the operational indicators listed in section 3.2 in order to assess the performance of the revised rules.

7.2. Evaluation

7.2.1. Mandatory evaluation of certain notified schemes

The current State aid set-up focuses little on the actual, measured impact of aid schemes. Rather, schemes are approved ex-ante on the basis of pre-defined criteria on the assumption that their overall balance will be positive, without a proper evaluation of their impact on the markets and over time. Monitoring focuses on compliance with the pertinent legal provisions in a sample of cases, while annual reports merely provide data related to the on-going implementation of the scheme. Ex-post evaluation in contrast has a distinct objective: it provides analysis on the effectiveness and efficiency of an aid measure and suggests improvements and lessons to be learnt.

For these reasons, under the umbrella of SAM, DG COMP has proposed to introduce more systematic ex-post evaluations of aid schemes, thus ex-post evaluation requirement is being systematically inserted during the revision of the State aid Guidelines[108].

State aid evaluation should in particular allow: (1) to verify that the assumptions underlying the approval of the scheme on the basis of an ex ante assessment are still valid; (2) to assess whether the scheme is effective in achieving the direct objective for which it was introduced; (3) to cater for unforeseeable negative effects, in particular the potential aggregated effect of a large scheme. Based on the assessment, evaluation can help where appropriate to improve the design of the scheme, introduce corrective measures, calibrate interventions to maximise effectiveness and efficiency. Such improvements could vary from adjustments in the project design (such as change in selection criteria, reinforced check on incentive effect), up to more significant options (for instance, promoting the use of an alternative aid instrument, redefined objectives, redefined target beneficiaries).

Evaluations will be carried out for schemes where the potential distortion of competition is particularly high, i.e. that may risk to significantly restrict competition if their implementation is not reviewed in due time. The evaluation requirement will therefore concern in particular schemes with annual budget exceeding a certain threshold or for novel schemes or those that face the possibility of significant market, technological or regulatory change in the near future that may require to review the assessment of the scheme.

[108] See for instance the State aid Broadband Guidelines adopted in December 2012.

For schemes subject to evaluation, the Commission may require the MS to limit the duration of the notified schemes (normally to four years or less) and to evaluate them. Aid schemes subject to mandatory evaluation may require re-notification. The precise scope and modalities of each evaluation will be defined in the decision authorising the scheme.

These evaluations shall be carried out by independent experts and should be based on a common methodology (for which DG COMP will provide guidance). The evaluation reports will be published and available to the general public.

7.2.2. Mid-term review of the EEAG

The Commission intends to review the EAG in the first half of 2017, based on a consultation of MS, of other interested parties and possibly based on an independent evaluation. The purpose of the mid-term review will be to assess the effects of the new provisions in the EAG and to determine if adjustments may be required. The mid-term review will address issues linked to the specific and operational objectives identified in Section 3.2.

7.2.3. Ex post evaluation of the EEAG 2014-2020

The Commission intends to carry out an ex post evaluation of the EEAG, in time for their revision for the period after 2020 (i.e. at the latest in 2019-2020). This ex post evaluation will in principle be conducted in accordance with the Commission's Evaluation Standards[109]. It will in principle be carried out by an independent external contractor and will involve a consultation of MS and of other interested parties.

To support the review of the EEAG 2014-2020, the ex post evaluation should focus not only on the implementation by MS and by the Commission, but also on the overall impact of the environmental and energy State aid policy to strike a compromise between environmental & energy policy objectives and minimising competition distortions.

Generally, as the Commission also intends to encourage MS to conduct ex post evaluations of State aid measures the results of such evaluations by MS could be fed into the ex post evaluation of the EEAG 2014-2020.

[109] http://ec.europa.eu/dgs/secretariat_general/evaluation/docs/standards_c_2002_5267_final_en.pdf (or any update or revision of these standards).

Ad hoc aid means aid not granted on the basis of an aid scheme.

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;

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

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

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.

Biofuels means liquid or gaseous fuel for transport produced from biomass;

Bioliquids means liquid fuel for energy purposes other than for transport, including electricity, and heating and cooling, produced from biomass;

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;

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

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.

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

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.

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.

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[110];

Descending clock auction a type of auction in which the auctioneer begins with a high asking price which is lowered until some participant is willing to accept the auctioneer's price.

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:

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

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;

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:

Concerning electricity:

- 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;

[110] OJ L 140/16, 5.6.2009.

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

Concerning gas:

- 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;
- underground storage facilities connected to the above-mentioned high-pressure gas pipelines;
- gas storage, defined as reception, storage and regasification or decompression facilities for liquefied natural gas (LNG) or compressed natural gas (CNG); and
- any equipment or installation essential for the system to operate safely, securely and efficiently or to enable bi- directional capacity, including compressor stations.

Concerning oil:

- pipelines used to transport crude oil;
- pumping stations and storage facilities necessary for the operation of crude oil pipelines; and
- 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.

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;

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[111];

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;

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;

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[112];

Feed-in premium means a premium paid on top of the market price which exposes renewable energy producers to market prices;

Feed-in tariff means a normally fixed tariff paid to renewable generators per kWh of electricity produced. Usually it does not expose renewable energy producers to market prices;

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.

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.

Generation operator is an undertaking which produces electrical power from fuel sources.

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[113];

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

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[111] OJ L 315/1, 14.11.2012.

[112] 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).

[113] 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.

Imbalance Settlement Period means time units used for computing BRPs' imbalances.

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.

Individual aid means aid granted either on the basis of a scheme or on an ad hoc basis.

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:

- the intangible asset concerned must be regarded as a depreciable asset,
- it must be purchased on market terms, from an undertaking in which the acquirer has no power of direct or indirect control,
- 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;

Internalise costs means the principle that all costs associated with the protection of the environment should be included in the polluting undertakings' production costs;

Large enterprises and large undertakings means enterprises which are not within the definition of small and medium-sized enterprises;

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);

Operating costs means, for the purposes of calculating eligible costs, in particular additional production costs flowing from the extra investment for environmental protection;

Polluter means someone who directly or indirectly damages the environment or who creates conditions leading to such damage[114];

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;

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[115];

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

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

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[116] and any amendment thereof;

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;

*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[117], to physical surroundings or natural resources;

Union standard means

- a mandatory Union standard setting the levels to be attained in environmental terms by individual undertakings[118], or
- 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.

[115] OJ L 124, 20.5.2003, p. 36.

[116] OJ L 140, 5.6.2009, p. 16

[117] 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).

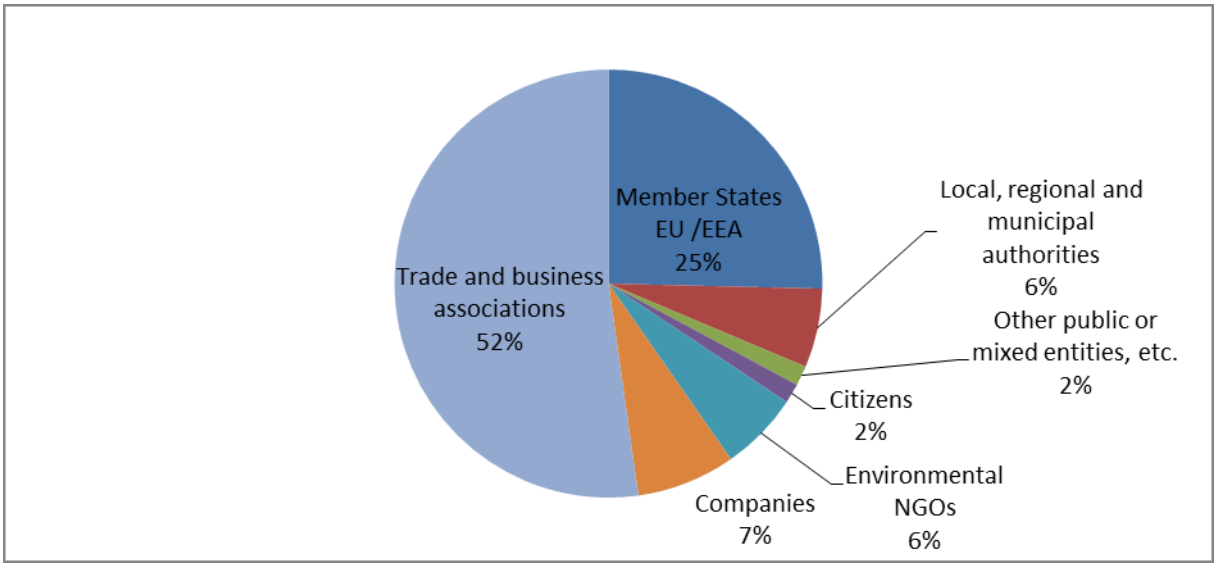
[118] Consequently, standards or targets set at Union level which are binding for Member States but not for individual undertakings are not deemed to be Union standards.

First consultation: Questionnaire on the Community Guidelines on State aid for environmental protection and environmental support measures in the General Block Exemption Regulation (July-October 2012)

Quantitative results of the consultation

67 responses were received[119]. Replies from public authorities included 16 Member States, one EEA Government, four regional governments and one competition authority. Industry accounted for the majority of replies, including 35 from industry associations, 5 companies and one mixed public/private partnership. Finally, four environmental NGOs and one citizen also sent contributions.

Figure 9: Consultation in 2012: Types of respondents to the consultation (as % of total replies)

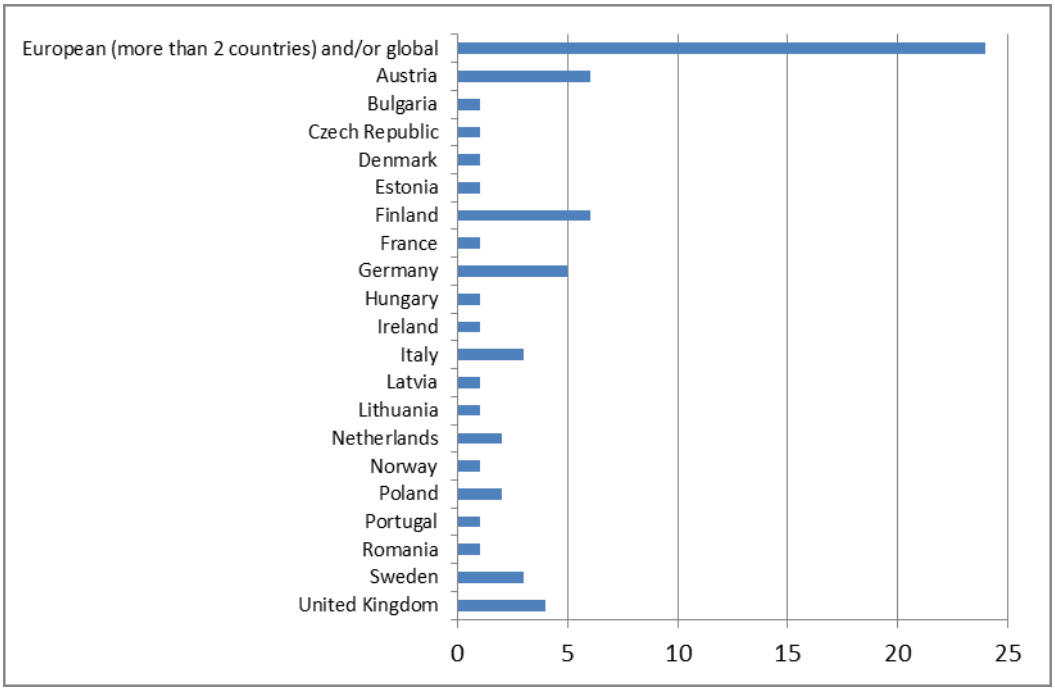


As for the geographical spread of respondents, most organisations represent interests that are broader than just national. Figure 10 shows as "European" those who have interests in more than one Member State (this also includes organisations that have mentioned there area of interest as "European" or "global").

Other interests are strictly national or sub-national and are represented by the relevant country in the graph. Only public authorities from 16 Member States participated in the consultation.

Figure 10: Consultation in 2012: Geographical spread of the contributors (by number of respondents)

[119] All responses are available on: http://ec.europa.eu/competition/consultations/2012_state_aid_environment/index_en.html



Qualitative results of the consultation

Most respondents noted the Environmental Aid Guidelines are still addressing the most important market failures hindering environmental protection and in particular the achievement of EU 2020 objectives.

Respondents consider the overall principles Guidelines sound. They consider that offsetting additional costs and respecting the 'polluter pays' principle are correct. They acknowledge that the Guidelines have facilitated the introduction of measures that contribute to environmental protection.

Calculation of eligible extra investment costs difficult:

Several Member States noted difficulties in defining alternative investment and eligibility of expenditure. The alternative investment ("counterfactual") as outlined in the EAG, might not constitute an actual alternative for investors (often an investor would consider either an investment in a renewable energy/energy efficiency project, or no related investment at all). For small investments, determining the counterfactual situation is more difficult. They asked for more guidance and examples on establishing a counterfactual / reference investment and eligible costs.

Emission Trading Scheme ETS

A large number of non-governmental respondents commented on this. Several businesses asked for aid to be allowed in order to offset the cost burdens resulting from the EU Emission Trading Scheme. They invoked the risk of carbon leakage as the reason to allow such aid. The UK government supported this.

They noted aid should be allowed in light of the risk of carbon leakage

Energy saving

12% of respondents asked that State aid be allowed for energy savings in buildings and to landlords that lead to energy savings by their tenants.

Renewable energy

An overwhelming majority of respondents (60%) of respondents noted that State aid measures for the promotion of renewable energies have contributed to the achievement of the 2020 targets and that the overall evaluation of their impact is therefore positive. The Member States replying on this point considered that the Environmental Aid Guidelines had facilitated the introduction of support schemes.

Almost a quarter of contributors also noted that despite their success, support measures have also had a considerable impact on markets. Industry associations and large energy companies seem to agree that reforms are needed, now that support schemes have resulted in enough market uptake of renewable energies. To prevent distortions, it is important progressively to phase-out subsidies for renewable energies technologies that are reaching market competitiveness and broad deployment.

13% of respondents, in particular the totality of the participating environmental NGOs and part of the industry representing renewable energies generators, stressed that it is essential to continue some of the support schemes. In particular, those technologies that still need more time to become cost competitive and which need further financial support and investment security. They claim State aids should allow renewables to move from research and development stage to the large-scale market deployment stage until technologies become mature.

Several respondents pointed out that the markets are currently imperfect because subsidies and competitive advantages for "conventional" energy sources still remain - including support to the nuclear industry. They see the lack of internalisation of costs (e.g. environmental, social, health) as making those sources artificially cheap. If those costs were internalized and State aids prohibited renewables would become fully competitive more quickly. Therefore, State aid for renewables should not be removed before these market failures are corrected.

Energy-efficient district heating and cooling

15% of respondents, half of which Member States, asked for the Guidelines to include support to investments in infrastructure in district heating and cooling. Austrian regions and Germany asked for their inclusion in the GBER.

Remediation of Contaminated Sites

A third of Member States indicated that the definitions were workable and stimulated the remediation of polluted sites. The UK asked for the inclusion of these measures in the GBER.

Tax exemptions

France highlighted the contradiction between the fact of granting reductions from environmental taxes and the goal of environmental protection.

Most of the comments referred to the calculation methods. Four Member States complained that it is difficult to satisfy the proportionality requirements of Art. 159 of the Guidelines, even where the Energy Tax Directive allows reductions below the EU minimum rate. Another issue raised was that some data, such as the price elasticity of demand, are very difficult, if not impossible to obtain.

General Block Exemption Regulation

Five Member States noted that the simplified calculation method facilitates the procedure and should be retained.

Six Member States Stated that defining the extra investment costs is complex, both in Guidelines and in the GBER.

Second public consultation: Issues paper (March -April 2013)

The consultation paper outlined the main areas the Commission was reflecting on, namely:

- How to come to a harmonisation and simplification of rules.
- Whether to include ex-ante rules on aid to energy infrastructure.
- How to assess aid for system stability and generation adequacy
- How renewable support can be effective and cost efficient and least distortive
- Whether to include new rules on tax exemptions for financing of RES systems

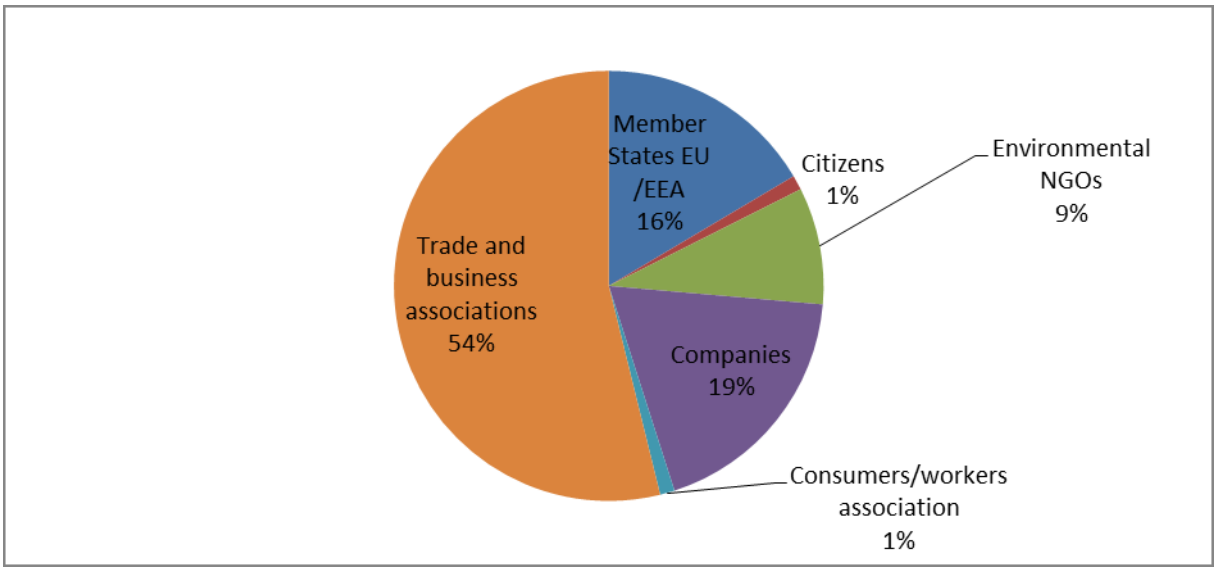
Quantitative results of the consultation

91 comments were received on the Consultation Paper. [120]

Replies from public authorities included 14 Member States, and one EEA member. In this second consultation, industry accounted again for the majority of replies, including 49 contributions from industry associations and 17 from energy companies. The participation of NGOs doubled to eight respondents. One citizen and one national consumer and workers association also sent contributions.

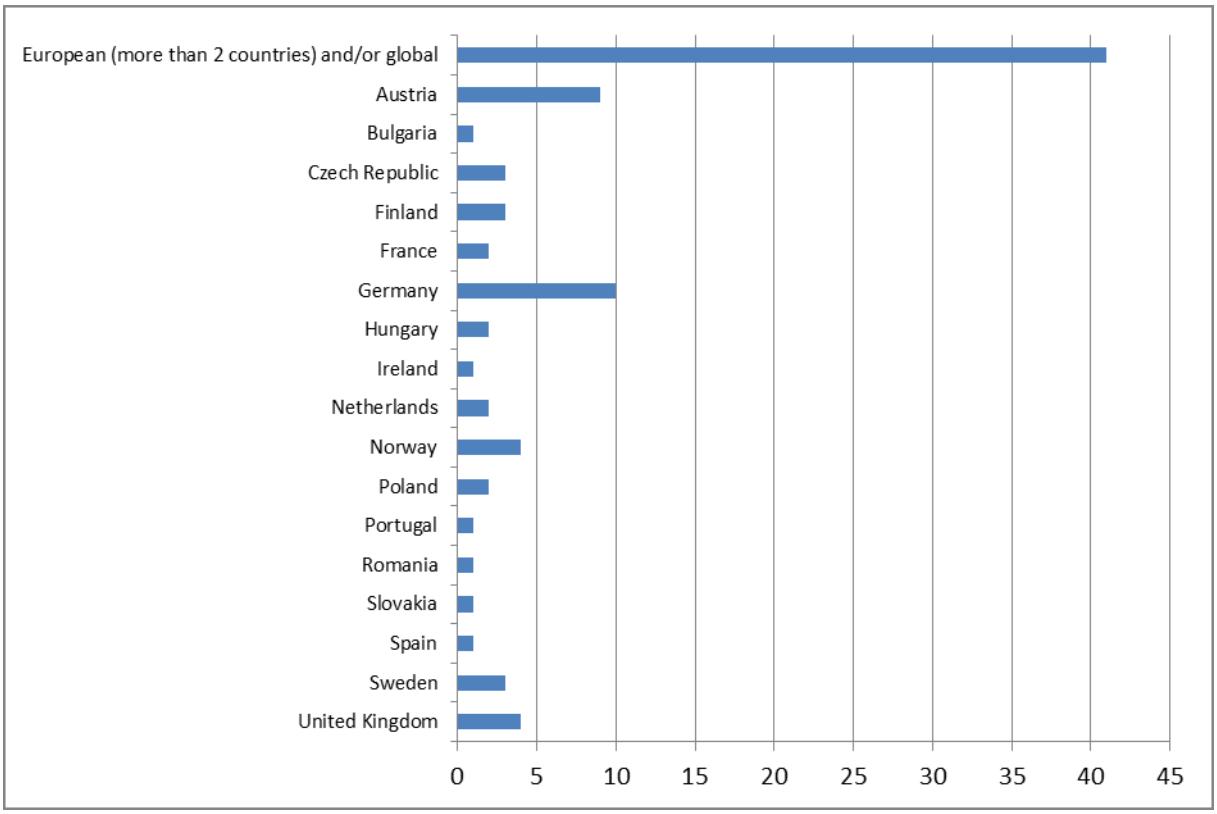
[120] All responses are available on: http://ec.europa.eu/competition/state_aid/modernisation/energy_environment_en.html

Figure 11: Consultation in spring 2013: Types of respondents to the consultation (as % of total respondents)



As for the geographical spread of respondents, almost half of the organisations represent European interests (from organisations covering two EU countries, to truly Europe-wide associations or organisations with global interests).

Figure 12: Consultation in spring 2013: Geographical spread of the contributors (by number of respondents)



Qualitative results

Harmonisation and simplification of the rules, in particular using the General Block Exemption Regulation (GBER)

All respondents welcomed simplifying and clarifying the interpretation of the Guidelines and GBER rules for the calculation of the maximum aid intensity, predominantly with respect to the identification of eligible costs.

Some respondents commented on the intention to extend the scope of the GBER to district heating and cooling systems and all welcomed it.

Renewables

All respondents agreed that a gradual phasing out of support for mature technologies is needed. Similarly, all respondents agreed that emerging technologies should continue to be supported.

However, views diverged on whether technologies are mature, and whether other market access barriers exist for renewables technologies.

Around 25% of respondents argued that support systems that respond to market dynamics should be preferred. The most cited examples were tradable certificates and feed-in premiums.

Another group of stakeholders (almost 10% of them) called for continued support as renewables technologies are not mature.

Three associations of energy providers and suppliers called for the extension of market obligations such as balancing to all technologies, but also noted that this might require an adjustment of the support levels in order to cover new costs.

Some of the respondents supported auctions. However, some noted that auctions have some practical drawbacks (for example, projects often incur costs before the planning authorisation is awarded; the possibility that a project may not be successful in an auction is an additional risk factor which could deter investment).

Energy companies supported a technology neutral approach based on ETS. However, they acknowledge that the current carbon prices are too low to encourage investment in renewables.

Three Member States noted the lack of enough experience with tendering to impose this method. In addition, a technology neutral approach encroaches upon the Member States' choice of energy mix. Two of them noted that technology neutral aid schemes risk producing windfall profits and overcompensation.

Other Member States remarked that there are separate policy discussions on cross-border support under the renewables Directive and on indirect land use change impacts of biofuels, which should not be prejudged by the Guidelines.

Infrastructure

35 of the respondents commenting on the infrastructure proposals warned against undermining the energy Regulations and saw very little scope for aid. All consider the energy Regulations framework is a sound basis for the development of networks.

Two Member States questioned DG Competition's competence to regulate in the energy area. They also appear to consider support to network operators does not constitute aid.

There was qualified support for the infrastructure proposals from some respondents to the extent that cases currently assessed according to the Treaty on a case–by-case basis could be assessed under the guidelines in the future.

Respondents note tariffs for access to electricity networks should provide appropriate incentives for investment[121]. State aid should be the exception. They noted the sector legislation should address financing and aid for electricity infrastructure, not the guidelines.

Respondents also note other bottlenecks prevent the extension of energy infrastructure. Lack of public acceptability for new infrastructure is seen as a more pressing issue than funding.

Several respondents said that aid should be granted upon the condition that projects should not distort competition with market-financed projects, nor jeopardize the profitability of existing grid infrastructure. Some operators note for example merchant cables should not be discriminated against, as this is also a way of establishing the needed investments via the market itself. New infrastructure should comply with the unbundling rules and guidelines and network codes.

State aid should be provided for investments in transmission networks only in those cases where there is a proven market failure or when general environmental benefits are not easily quantified and might not be properly remunerated. Some respondents argue that State aid for transmission and distribution networks should focus on R&D&I.

Several respondents note the stricter test for purely national infrastructure is not justified.

Some respondents called for similar treatment of gas networks as electricity networks.

Demand side measures

Some respondents note inclusion of State aid measures to support demand side measures could improve legal clarity for potential investors and is as such positive.

Some respondents welcome the possibility for State aid to the deployment of smart grids, arguing that regulatory frameworks may not always provide adequate remuneration for investments.

Other respondents, however, warn that many demand response services are now provided by the market (for instance, electricity storage facilities such as pumped hydro power), and State aid should not distort that market.

[121] Recital 35 Guidelines for Trans-European Energy Infrastructure

Capacity mechanisms

All respondents agree the market should in principle ensure security of supply. Capacity mechanisms should be introduced only if a capacity shortage has been shown. Some note it has been shown capacity remuneration mechanisms are necessary. Two respondents, however, do not see evidence of capacity shortage so far.

Most respondents consider capacity mechanisms should not be introduced, but that they should be closely reviewed in order to avoid market distortions in case they are introduced. They note that it is very likely that a well-functioning electricity market would be able to set the right price signals in the future when additional generating capacities are necessary. Measures should therefore rather aim at completing the internal energy market.

Some respondents also note these mechanisms should not be discussed in the Guidelines but left to DG Energy's guidance. They refer to their replies to the consultation on generation adequacy for information about their views.

The replies also show different views on what constitutes a capacity mechanism. Several respondents note capacity mechanisms can address different problems and take many different forms. Capacity mechanisms can for example address short-term balancing or longer-term generation adequacy.

Some respondents (three Member States as well as four large energy groups) note capacity remuneration mechanisms are necessary. A number of respondents point out that capacity mechanisms do not always involve State aid.

A small number of respondents ask for generation adequacy assessments to be further harmonized.

State aid to generation of nuclear energy

Some respondents and Member States (10% of respondents in total) were in favour of including rules on aid for the generation of nuclear energy. The main arguments put forward were supporting a low carbon technology and/or security of supply.

Other respondents were against. Two Member States expressed clearly their position against aid to nuclear energy being included in the Guidelines. This position was shared by other respondents (in total, 13 % of the respondents), mostly from the environmental or citizen non-governmental organisations and renewable energy associations. Their main arguments concerned the alleged lack of competence of the Commission to set rules, the lack of a market failure, the risk of creating a candidate for permanent subsidy and the lack of a clear contribution to an environmental objective.

Exemptions from environmental taxes

There are two groups of respondents with divergent views.

- Several business respondents, particularly energy intensive industries, and some Member State called for exemptions from environmental taxes or other charges on electricity consumption for energy intensive industries.

Some respondents note for energy infrastructure fees network operators must be allowed to differentiate tariffs of different customers and that this is not State Aid.

- The other group of respondents notes that in principle, all energy consumers should contribute to the development of renewables. Exemption of energy intensive industries from energy taxes or RES costs should also be done with caution because such exemptions do not give the right incentive to look for most energy efficient production technologies.

Some Member States note the 20 % rule is too strict and could be contra productive from an overall environmental perspective, as it risks preventing Member States from introducing a high general tax level of a non-harmonised tax. They would welcome a simpler State Aid test.

Results of the workshop of 12 April 2013

The Commission invited Member States and the stakeholders that had provided comments in the public consultation to this workshop, where the issues paper published in March 2013 was discussed. Over a 100 participants attended. The main issues covered were aid for renewable energy and energy infrastructure.

In general the consultation paper was seen positively as tackling the right issues. There was a clear divergence of views between countries supporting and against nuclear energy. However, Member States representatives with some exceptions did not yet take strong positions on the topics being discussed.

Experts presented an analysis of existing renewable energy support schemes. The presentations included an overview on success of EU support schemes and case studies of Member States support schemes. [122]

The presentations on case studies confirmed that State aid to energy infrastructure has a low risk of distorting competition. Nonetheless, they also showed that the need for aid might be limited.

The discussions showed wide agreement on the need to better integrate RES into the energy market and make systems more efficient and reduce distortions. However, views diverged on what to change. In particular, opinions on technology neutrality and on cross border openings of renewable energy support were split.

Third consultation: Paper of the services of DG Competition containing draft Guidelines on environmental and energy aid 2014-2020.

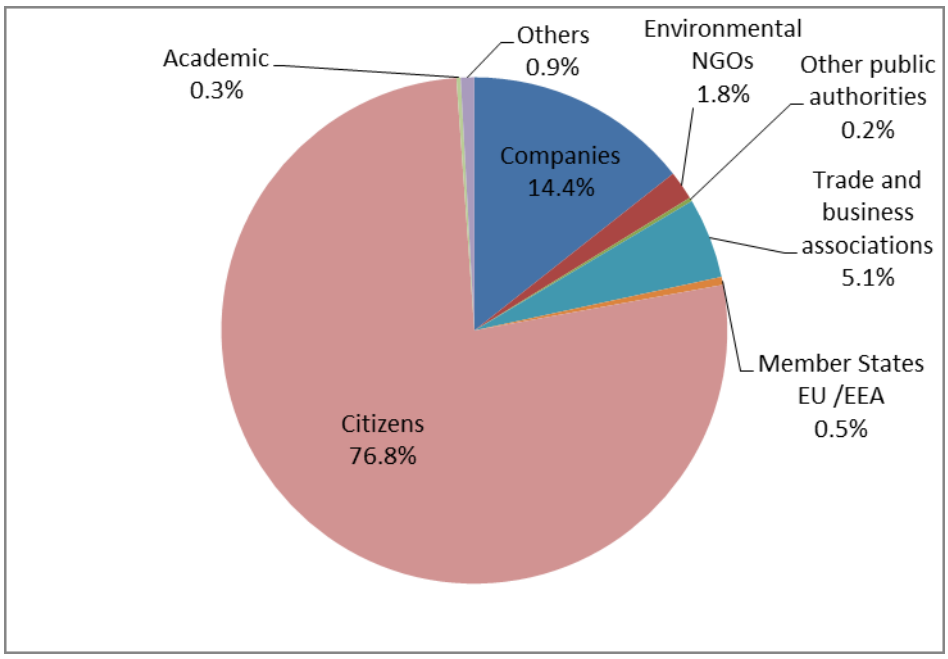
The third public consultation took place between 18 December 2013 and 14 February 2014. The purpose of the consultation was to gather feedback on the revised draft Environmental and Energy Aid Guidelines (EEAG).

4494 replies have been received. More than 50% of the respondents sent however the same reply. The breakdown of the replies by type of respondent is shown in the table and figure below.

[122] All presentations are available on: http://ec.europa.eu/competition/state_aid/modernisation/energy_environment_en.html

Respondents by category	Replies received
Member States EU/ EEA	23
Other public authorities (regulators, regional, local authorities, regional associations, and EFTA)	11
Trade and business organisations	231
Companies, including cooperatives	646
Environmental NGOs	83
Citizens	3450
Academic	12
Others, including citizen or social associations	39

Figure 13: Consultation closed in 2014. Breakdown of replies by type of respondent



This summary is based on a sample of all the replies received. The sample includes the replies of all Member States that contributed (22): Austria, Belgium, Czech Republic, Denmark, Estonia, Germany, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Romania, Slovakia, Spain, Sweden and United Kingdom.

In addition, to give a representative overview of the stakeholder comments, a representative sample of the replies from companies, citizens, industry and environmental organisations was done. The focus has been to include Europe-wide organisations. The replies analysed include those of:

- EFTA and Norway;
- Five regional or local authorities and two national energy regulatory authorities ;
- 36 European industry associations, 34 national industry associations and 20 energy companies;
- Seven environmental associations.

The summary is structured according to the headings of the Draft Guidelines. The Commission will continue to analyse the replies to the consultation and will publish in the web[123] a standalone report with the final results.

General comments

Respondents generally welcome the review of the current guidelines. Several industry representatives explicitly welcome the introduction of more competition with the gradual integration of renewable energies in the market. 11 respondents welcome the extension of the scope of the Guidelines to the energy measures.

11 Member States, 17 industry representatives and one environmental organisation showed concern that the Guidelines may interfere with Member States' right to determine their energy mix. Some consider that the draft Guidelines attempt at harmonizing energy policy at EU level.

5 public bodies, 2 environmental associations and 10 industrial respondents considered that the Guidelines could be better aligned with other existing EU legal instruments such as the Energy Taxation Directive, the Renewables Energy Directive, and the Commission's Staff Working Paper on the design of renewables support schemes.

16 respondents were of the opinion that the draft Guidelines do not simplify the current rules but are prescriptive and complex, and will be difficult to implement.

1. Scope of the Guidelines

The comments on this issue originate to close to half from Member States and from industry representatives with a reminder of about 5% from NGOs. Only few respondents proposed to add new aid categories to the Guidelines. One MS (Italy) suggested adding a category to assist implementing the EU's air quality legislation. Two Member States (NL and UK) proposed allowing not only investment aid to CCS but also operating aid. One MS (DE) proposed adding a category on nature conservation and biodiversity. One MS (NL) asked to maintain the 2008 EAG category on relocation aid.

Most responses were related to definitions; either clarification requests or proposed changes. Around a fifth of the comments were related to the definition of "energy infrastructure". Most

[123] http://ec.europa.eu/competition/consultations/2013_state_aid_environment/index_en.html

respondents called on the Commission not to limit the definition to electricity and gas transmission but also include distribution. Respondents were divided on the need to include electricity storage in the definition. Each of the following definitions attracted 7% of the responses: climate protection, energy efficiency, renewable energy sources and CCS. One Member State (Czech Republic) explicitly asked to exclude pumped-storage hydroelectric power station projects, as hydro is not an underdeveloped technology.

On support to nuclear energy, the opinions remain divided. On the one hand, four Member States supported the inclusion of nuclear energy in the Guidelines bringing forward the argument of technological neutrality and the fact that nuclear energy contributes to a low carbon economy. Three Member States asked for a specific provision to be included in the Guidelines indicating that the Commission will assess the aid measures aiming at the promotion of nuclear energy under the rules of the TFEU directly.

On the other hand, one Member State, three environmental organisations and five industry representatives (mostly from the renewables sector) welcome the fact that the draft EEAG do not include compatibility rules on nuclear and they propose to state that nuclear energy should not even be eligible for State aid. One industry representative stated that nuclear energy is not an infant technology, and that State support is not justified as EU objectives can be achieved with technologies that are safer,,, less expensive and more favourable to the environment.

2. Notifiable aid

The comments on this issue originate to close to two thirds from Member States, to about one third from industry representatives with a reminder of 6% from NGOs. All respondents requested to increase the notification thresholds to reduce the administrative burden. Most requests for increase were related to the categories RES, CHP, energy infrastructure and generation adequacy. Several respondents also proposed increasing the notification threshold per beneficiary to at least 10 million euros.

3. Common assessment principles

Four industry representatives and two MS noted that the limitation of the duration of some schemes to four years may be too short for some of the investments required. Other individual comments referred to the need to clarify the definition of 'objective of common interest', the use of "certain categories" and "may", or asked for the inclusion of a reference to non-discrimination rules (Articles 20 and 21 of the Charter) and to free movement of goods (Article 34 TFEU).

4. Compatibility assessment under Article 107(3)b

The replies from Member States analysed so far do not make any comments in this respect. The few comments received from industry referred to aspects that required clarification. For instance, requests to clarify that the analysis of the level of profitability of the project should refer to individual projects, not to schemes;

Another comment referred to the possibility that asking MS to demonstrate that the project is of common European interest may be too much effort for MS and asked to streamline this provision and to provide accelerated notification procedures, as in Regulations 1391/2913 and 347/2013.

5. Compatibility assessment under Article 107(3)c

5.1 General compatibility provisions

As a general comment, two member states that include islands in their geography and one representative from the electricity industry stated that a specific assessment is necessary for electricity systems on small islands or in the outer regions.

5.1.1 Contribution to a common objective

Some industry representatives proposed that MS use "resource and Energy efficiency" as an indicator to demonstrate the contribution of individually notifiable aid to an increased level of environmental protection. Others pointed out that "Industry's competitiveness" should be an objective of common interest justifying State aid.

5.1.2 Need for State intervention

3 out of the 8 respondents asked to delete the provisions on residual market failures. The reasons include that this notion is not used in other State aid guidelines, and the assumption that an existing market failure can be internalised by other EU policies. Other respondents asked to take account of other possible reasons for State intervention, such as non-harmonised support schemes in MS (leading to market distortions), the interaction of different policies not fully addressing the market failures or the existence of natural monopolies such as network operators.

5.1.3 Appropriateness of the aid

On this point, 3 MS stress that the choice of aid instrument should be up to the Member State and it's not appropriate to require the Member State to demonstrate why it has decided to choose a specific form of aid

5.1.4 Incentive effect

14 replies were received on this point. Most of them commented individually on specific paragraphs. Two industry organisations are concerned that the provisions concerning incentive effect and the counterfactual scenario are with the exception of paragraph (65) based on the characteristics of investment aid. The description should take into account operating aid.

Three industry representatives asked for precisions on what is understood by “start of the project”. Preparatory work, such as application or preparations to apply for environmental permission, is usually carried out on beneficiary's own risk prior to application.

5.1.5 Proportionality of the aid

Most comments were submitted by Member States. Most respondents requested clarifications and further guidance to the methods for calculating eligible costs (e.g. competitive bidding, funding gap). Some respondents requested not to simplify the methodology for estimating extra costs and proposed keeping the method as in the 2008 EAG.

5.1.6 Avoidance of undue negative effects on competition and trade

Five individual comments on various aspects of these provisions were received, most of them asking for clarifications or minor revisions of the text.

5.1.7 Transparency

The transparency requirements raised concerns mostly among Member states. While some of them agree to more transparency, the main concerns (7 MS, 3 industry) relate to the potential conflict with national confidentiality laws, laws on data protection, and the need to protect commercially sensitive information.

8 MS also flag that this requirement will bring along a heavy administrative and financial burden (for beneficiaries providing the information and for public authorities to set up, monitor and keep the system updated at all times). Two MS requested a transitional period to allow for putting in place the necessary IT systems. One MS suggested that the Commission could be better placed to provide this information based on the notification tool that is already in place (SARI). One MS requested the removal of this section from the EEAG.

Some MS suggested aligning the transparency requirements to the ones in the Regional aid Guidelines, or the Structural Funds.

One MS suggested allowing an exemption of this provision for tax aid schemes once aid has been cleared.

5.2 Renewable Energy Sources (RES)

The contributions analysed commented upon several aspects of the proposed changes to state aid support for renewable energy. It was possible to identify some key issues that are addressed by most submissions. Among the frequently addressed points include:

1. The need to provide for enough flexibility in the EEAG for Member States to choose the technology mix deployed (general comment).
2. Connected with point 1, the compatibility of the EEAG with other parts of the EU acquis (in particular, the renewables energy Directive, 2009/28/EC and Article 194 of the Treaty).
3. The requirement for all renewable energy generators to bid for aid on a non-discriminatory basis (competition between technologies, paragraph 120 (b) of the draft guidelines).
4. The classification of renewable energy technologies in deployed and less-deployed technologies (p. 119).
5. The obligation to grant aid with a competitive bidding process (p. 120 (a)).
6. Entry into force of the new requirements for aid to renewable energy generators (p. 230).
7. The criteria for distinguishing between large and small installations (p. 123).
8. The requirement to adopt Feed in Premia (FiP) instead than Feed in Tariffs (FiT, p. 120 (c)).
9. The requirement for aid beneficiaries to be subject to standard balancing responsibilities (p. 120 (d)).

While the contributions address other issues related to RES, the above points capture by far the largest part of the comments. For example, all the 19 contributions from Member States address directly aid to renewable energy sources. Of these 19 contributions, 18 address at least two of the 9 points above. Of the 37 contributions from industry, 22 address at least one of the 9 points. All the contributions from environmental and non-governmental organisations address at least two of the 9 points above.

Regarding aid to renewable energy sources, the flexibility for Member States to determine their energy mix proved to be the most important point for contributors. Almost two thirds of the contributions from Member States (12 of the 19) argue that the proposed Guidelines might restrict the ability of Member States to determine their energy mix. Similar views are held by about one quarter of the industry representatives (9 out of 37) and about three quarters of the NGOs (5 out of 7 contributions analysed).

Related to this point, about one quarter of the Member States (5 out of 19); one quarter of the industry representatives (9 out of 37) and 5 NGOs out of 7 argue that the draft EEAG might conflict with the other parts of the EU acquis (in particular the renewable energy Directive, 2009/28/EC and article 194 of the Treaty) limiting the ability of Member States to determine their energy mix.

The requirement for all renewable energy generators to bid for aid on a non-discriminatory basis (technology competition, paragraph 120 (b) of the draft guidelines) is questioned by 8 Member States, 5 industry contributors and 5 NGOs. One Member State and one industry representative agree with the EEAG on this point.

Seven Member States disagree with the classification of renewable energy technologies in deployed and less-deployed technologies (p. 119), typically questioning that deployment at EU level is an acceptable proxy for maturity in each Member State. Six industry stakeholders and 4 NGOs share similar views. One industrial stakeholder agrees with the principle of the guidelines on this point.

The obligation to grant aid with a competitive bidding process (p. 120 (a)) is viewed critically by 7 Member States, 5 industrial players and 5 NGOs. Two Member States and 1 industry stakeholder agree with the principle of the guidelines on this point.

Three Member States and 1 NGO consider the time foreseen to adapt national support schemes to the new guidelines too short.

The criteria for distinguishing between large and small installations (p. 123) is questioned by 3 Member States, 5 industry stakeholder and 2 NGOs, typically proposing higher thresholds or more flexible criteria for defining large and small installations. Three industry contributors agree with the principle of the draft guidelines or propose lower thresholds/more stringent criteria.

The requirement to use Feed in Premia (FiP) instead of Feed in Tariffs (FiT, p. 120 (c)) appears less contested. Two Member States, 6 industry stakeholders and 5 NGOs argue against the requirement to abandon FiT. One Member State, 3 industry stakeholders and 1 NGO are explicitly in favour of the proposed changes.

Finally, the requirement for aid beneficiary to be subject to standard balancing responsibilities (p. 120 (d)) is viewed favourably by 7 industry representatives and negatively by 2 Member States and 3 Industry stakeholders.

The following figures summarise the results shown above. Overall, the limited sample seems to capture the main themes addressed by the different groups of stakeholders.

Two additional issues were the subject of several comments. Four contributions argue that Green Certificates schemes cannot always be considered aid. It is therefore unclear why the Guidelines address these support schemes (p. 127 – p. 131). Furthermore, several stakeholders object to paragraph 118 regarding cooperation mechanisms for cross border support.

Biofuels

24 replies to the public consultation commented on the biofuels section of the EEAG, of which 4 came from environmental associations, 10 from industry and 10 from public authorities.

With regard to biofuels, the majority of the comments (13, of which 6 public authorities and 7 industry representatives) were in some way critical of the envisaged differentiation between conventional and advanced biofuels. The main arguments put forward were that only sustainability criteria should be relevant and that the results of the discussions on the ILUC proposal (COM(2012)595) should not be anticipated (11 respondents), particularly as the outcome is yet unknown. In addition, it was mentioned that a distinction between conventional and advanced biofuels will exist within EU legislation in 2020 at the earliest and that the current proposal would lead to competition distortions, as Member States use different feed stocks. One respondent suggested that there were no sound grounds at all to restrict state aid based on the feed stock used. Two respondents from industry suggested to remove the reference to the proposed end of support for first-generation biofuels in the post-2020 period.

On the other hand, two respondents expressed the opinion that biofuels from land-based crops that lead to ILUC should not receive aid and three respondents (1 public authority and 2 environmental associations) were opposed to any increase in the use of biofuels. The reason given for this was their harmfulness to the environment. In addition, one respondent from industry suggested that no state aid should be granted to technologies that negatively affect existing, environmentally friendly industries. One environmental association proposed to add compliance with the waste hierarchy as a criterion for the eligibility for state aid and one suggested for an environmental impact assessment for support schemes to be included.

Three respondents did not agree with the draft EEAG proposing a certain percentage for tax or excise duty exemption schemes. Another respondent put forward that small scale installations of conventional biofuels should still be eligible for aid. Further minor comments, usually raised by a single respondent, related to issues of clarification, definition, terminology (for example regarding "advanced biofuels") or to use a minimum rate of return instead of the market price as benchmark. One public authority also suggested to introduce a separate category for investment aid to biomass based solid fuel production.

5.3 Energy efficiency, incl. cogeneration and district heating and district cooling

The comments on this issue originate to 39% from Member States, 58% from industry representatives and 3% from NGOs. 55% of the responses were related to the provisions on CHP. Most of them indicated that the conditions for deployed RES technologies cannot be easily transposed to CHP. Most respondents also argued against competitive bidding and proposed maintaining the existing 2008 EAG provisions. Respondents also requested to reintroduce the possibility of granting tax exemptions to finance CHP facilities. Lastly a few respondents asked for clarifications on how to calculate the eligible costs for upgrading existing CHP facilities.

13% of the responses were related to district heating and cooling. Some respondents proposed including heating and cooling infrastructure in the scope. One MS (Czech Republic) asked to omit point 140 as it is not relevant to cogeneration and district heating. This MS also requested to make energy efficiency eligible for direct subsidy. One NGO asked to limit aid to efficient district heating and cooling systems.

5.4 Resource efficiency, waste management

Resource efficiency

There were no comments made on the section "Resource efficiency".

5.4bis Aid to waste management

On the section "Aid to waste management" the Czech Republic, Italy and the United Kingdom replied as well as five Industry associations: The Confederation of Norwegian Enterprises (NHO), The Plastics Recyclers Europe, The European Federation of Waste Management and Environmental Services, The Federation of the German Waste, Water and Raw Materials Management Industries (BDE) and the Federal Association of Secondary Raw Materials and Disposal (BVSE).

The Czech Republic expressed its concern over an issue with interpreting terms as "state of the art", "normal practice" and "Union technological and common market perspective". Italy proposed to add a reference to waste reduction for the coherence with other EU regulations. The UK welcomes continuation of the broad current approach to aid for waste management and asks if it would still be possible to provide aid for undertakings which deal with a mixture of their own and others waste (as confirmed by a Commission decision in case N 517/2010). The UK also proposed to include waste management in the new GBER and that the current draft EEAG provisions could be replicated in the GBER. The UK authorities acknowledged that the Commission wishes some extra comfort before including aid for waste management in the GBER. This could be provided by specifying a lower cap on the amount of aid which can be granted for waste management. € 2 million would be appropriate, following the current UK waste scheme (N 517/2010), which is fully consistent with the Waste Framework Directive and could be used as a template for the inclusion of waste within GBER if further safeguards are required.

The associations argued that waste companies perform tasks of common interest. The EEAG should clearly state that State aid can be applied to plastics recycling initiatives. It is mentioned that important investments will be needed in order to raise the recycling rates in many Member States and to keep recycling going where it is being done already. State aid mechanisms could play a significant role to ease these investments. Whereever primary

industries (chemistry, wood, metal etc.) are allowed to be supported by direct or indirect State aid, the respective recycling activities for these primary materials must be treated equally in order to further develop a European Circle Economy. State aid should not only be possible to avoid relocation and "carbon leakage" but to remain substances and services competitive which contribute to the reduction of CO_2 emissions and the supply of the EU-economy with secondary raw materials. Here, the recycling of waste material and the production of alternative fuels from waste products are mentioned.

5.5 Carbon Capture and Storage (CCS)

Three respondents were against supporting CCS with State aid. Two environmental organisations argued that CCS does not contribute to limit the impacts of climate change and goes against the common objective of environment protection given its negative effect on groundwater. It was mentioned that as this is an emergent sector, the first projects will have complex and extensive aid requirements and the Guidelines must provide Member States with the flexibility to award aid where this is considered essential to project viability. For this purpose, the possibility of granting operating aid should be included according to 7 respondents, among which some also asked to energy generators to be compensated by the loss of revenue resulting from retrofitting their installations to capturing and storing CO2. In addition, respondents also asked for the possibility to grant aid to transport and storage infrastructure. Several respondents also argued that the CO2 capture definition should not be limited CO2 emissions from the combustion of fossil fuels. It should also cover the combustion from biomass.

5.6 Reductions or exemptions from environmental taxes

Five out of sixteen responding public authorities are of the opinion that the Guidelines should be in line with the Energy Taxation Directive (2003/96/EC) and should refer to it (cf. deletion footnote 55). One MS said it will do its utmost to maintain the status quo between this Directive and the AGRI Guidelines. As regards industry, two thirds of the respondents (19 out of 29 analysed) are of the same opinion, in particular with respect to tax reductions or exemptions leading to taxation below the EU minimum level. One industry respondent explicitly demands this to be included in the new GBER. One MS points out under section 5.1.4 the general conditions of the incentive effect cannot be upheld.

Another four out of fifteen responding public authorities considers that all sorts of tax exemptions (incl. for RES) should be treated likewise and be dealt with under chapter 5.6 of the EEAG. In their view, paragraph 170 should therefore be deleted (one MS adds: at least where EU minimum tax levels are respected). 6 out of a total of 29 industry respondents equally request such deletion.

Two Member States comment on the maximum duration of approved aid schemes. One proposes to delete it, as no similar maximum duration is included in GBER. The other Member States requests to maintain the possibility to re-notify a measure. Among the industry respondents, similar requests to delete the 10 year duration cap for approval of tax schemes are found, whereas others request to maintain the possibility of re-notification. In any case, according to the industry, 10 years would not provide sufficient investment certainty.

Some Member States express concerns with the rigidity of the assessment criteria, claiming that they may be too strict and would exclude too many sectors. In particular, in the context of

paragraph 176(a), two Member States claim that the GVA criterion (which should be defined in the EEAG) of 5% is too high, a view which is shared by part of the industry representatives. One MS proposes to reduce it to 0.5%. Another Member State defends the drawing up of a list of eligible sectors at EU level. Also amongst the industry respondents, the request to consider the entire ETS-list eligible is voiced, although others require a prior revision (widening) of this list.

In contrast, a number of industry representatives question the fact that the current criteria are ETS-inspired, as ETS is an EU-wide system, whereas taxes are national. Therefore, in their opinion, the criteria need to be revised, for example with respect to the following points:

(1) Trade intensity should be an additional but not mandatory criterion, and it should be calculated based on both extra- and intra-EU trade.

(2) The proposed energy-intensity threshold is considered unsubstantiated, as GVA is fluctuating and possibly discriminatory against labour-intensive industries. Better to focus on the energy-intensity of the sector (as was done in EAG 2008 and in Article 17(1)(a) ETD).

(3) It should be allowed to widen the scope of the assessment to include the cumulative impact of several taxes and other similar cost burdens – otherwise, the current rules might favour firms subject to high but few taxes to the detriment of firms subject to the cumulated impact of low but numerous taxes.

The approach to take into consideration the cumulative impact of individual policy measures for the purposes of this chapter is equally defended by one Member State, which for example explains that the cumulative indirect emission costs should be used to calculate the substantial increase in production costs referred to in paragraph 176(a) EEAG.

One Member State requests to clarify whether the criteria in paragraph 176 are cumulative.

Another Member State considers that aid in the form of tax reductions below 20% (para. 176(b)) should be possible. Likewise, four industry respondents question the proportionality threshold of 20% in para. 176(b).

Two Member States question the preference given to lump sum tax reductions (paragraph 176(c)), as this is administratively burdensome for Member States. One industry respondent simply demands the deletion of that requirement in paragraph 176(c), insofar it means that the reduction from charges is not granted upfront. A few others propose that it should be clarified in paragraph 176(c) that the aid may be paid to the beneficiary either in the year in which the costs are incurred (and then corrected by ex post monitoring) or in the following year, based on the respective production levels.

5.7 Reductions in funding support for RES-e

Several contributions claim that reductions in funding support for electricity from renewable sources is not State aid.

14 respondents claim that using eligibility criteria based on the ETS Guidelines is not appropriate and that a national approach should be used instead, taking into account the different paths chosen by Member States to finance the development of Renewable energy.

Other options proposed for the eligibility criteria by small groups of respondents include (i) the sum of direct and indirect additional costs to be at least 30% (ii) the intra EU trade intensity and (iii) the use of energy-intensity only. Four respondents agree to use the use thresholds of Energy Taxation Directive (ETD).

A compensation paid in the form of a lump sum does not seem adequate for 14 of the respondents. Other types of compensation are suggested, such as tax exemptions, or a flexible approach determining the best type of compensation case-by-case.

Regarding the proportionality criteria, several respondents oppose the proposed levels of own contribution (9 industry and two Member States).

Two respondents warned that the limited life time period of the EEAG creates uncertainty: They suggest that reductions and exemptions from fiscal energy and environmental policies need to be aligned with the duration of the policy itself.

5.8 Infrastructure

In general, the replies analysed are in favour of the inclusion of aid to infrastructure in the scope of the guidelines, but consider that should be financed through the market and only exceptionally through State aid, when market failures have been identified. A minority, of which two public bodies, questioned the need to have infrastructure covered by the guidelines given the existing Regulation 347/2013 on guidelines for trans-European energy infrastructure.

The main discussion raised by respondents refer to the scope: what should and should not be covered by aid. On the one hand, the majority of Member States and industry representatives proposed to increase the scope. Some ask for all types of transmission and distribution networks (not just cross-border, but also national, regional or local) to be included in the scope. One Member State argues that national infrastructure can contribute to objectives of common interest including energy security, environmental protection and regional development. Another one stated that in a period of economic crisis, public support is needed since the costs of new infrastructure cannot be passed on to consumers.

Four respondents asked specifically for the inclusion of transport of LNG (Natural Liquefied gas) ships and related infrastructure. Other contributions asked to extend the scope to interconnections, district heating infrastructure (3), infrastructure for drinking water (1), waste management (1), low emissions vehicle charging and refuelling (1). The request to include low voltage infrastructure was received from 5 respondents. Four respondents asked specifically to include smart grids.

As for what should not be covered by the scope, 1 MS (Czech Republic) called for an explicit prohibition on state aid for pumped storage hydro plants as it is a developed technology. Environmental organisations shared the opinion that projects that are incompatible with the Union's environmental acquis, the EU 2020 and 2030 greenhouse gas emission targets and the

EU's commitment to phase out support for fossil fuels should be ruled out from public support. In particular, oil and gas projects should be excluded.

Electricity storage was strongly dismissed as a candidate for State support by four members of industry, as it is considered to be part of the generation activity.

One electricity industry representative was against including transmission and distribution networks in the scope.

Besides these specific comments, one MS called for the guidelines to be sufficiently flexible to ensure that new approaches and technologies would not be made more difficult or ruled out.

5.9 Generation adequacy

The sample of replies included a total of fifteen Member State replies to the issue of generation adequacy. Two Member States consider it too early to put in place state aid rules in this field. They considered that it should first be clarified whether these measures constitute state aid or should be dealt rather by Energy regulation than State aid rules (1/14). One MS also stressed that the current acute problem of insufficient generation adequacy in the energy market should be taken into greater account.

Other respondents find the rules too prescriptive (1/14) or believe that MS should retain sufficient flexibility (3/14) to enact the most appropriate measures taking account of the characteristics of regional markets. In that respect, four public authorities request that regional measures should be made possible. Three of these see Capacity Remuneration Mechanisms (CRM's) necessary in certain (isolated) geographical regions (for grid stability reasons). The other sees it in a supranational context, that is regional measures should take precedence over national ones.

As regards industry, the "no aid" argument is equally voiced with about a sixth of respondents (5 out of 29) considering that generation adequacy measures should not be considered state aid at all, in particular as there is growing evidence that markets should be redesigned to encompass capacity remuneration in the longer term.

At least three industry respondents question the "one size fits all" approach of the EEAG, claiming that it leaves little scope for MS to take local specificities into account. 3 out of 4 environmental organisations request more flexibility for MS to develop criteria involving carbon emissions thresholds..

The most controversial issue for industry (14 out of 29 respondents mention it, either in a positive or negative way) is the preference given (most notably in para. 212 EEAG) to low-carbon generators (non fossil fuels). On the one hand twelve out of twenty-nine respondents and one MS (Czech Republic) are concerned with this "priority treatment", in most cases arguing that capacity mechanism should pursue one goal only i.e. security of supply. These respondents argue that there are other instruments available to reduce CO2 emissions, such as the European Emissions Trading scheme. They add that this "priority treatment" is in conflict with the principle of technology neutrality and argue that this may not lead to the most cost efficient outcome (at least 4 out of 29 respondents consider this to be the overarching aim of state aid policy in the field of generation adequacy). One of the respondents stated that it is

negative towards the "priority treatment" of low carbon generators and proposes to set a threshold in terms of maximum CO2 emissions for participation to the generation adequacy mechanisms. On the other hand two respondents out of twenty-nine explicitly welcome the preferential treatment proposed in the draft EEAG for low carbon generation. Three Member States see a conflict in the requirement of technology-neutrality and the prohibition to provide subsidies to fossil fuels (para 212). Another MS claims that aid to generation from indigenous fuels may be compatible with Directive 2009/72/EC. 2 out of 4 environmental organisations request an exception to the technology-neutrality principle, in order to allow for a differentiated treatment between coal and gas. One MS requests that, in light of the alternatives proposed to subsidies to fossil fuels, it seems more appropriate to rephrase the category as "capacity adequacy. One environmental organisation proposed the term "resource adequacy".

About one fifth of respondents from the industry (6 out of 29) support the view that aid to generation adequacy is presented as a "last resort", although they request to have this written in less ambivalent terms. In particular, at least four respondents explicitly emphasise that priority should be given to tackling market and regulatory failures (and particularly regulatory intervention in the form of wholesale price caps and regulated retail prices – in contrast, one MS requests to delete the notion of "wholesale price caps" from the list of potential market failures in para. 218) and would like to see this more explicitly stated in the EEAG. Environmental organisations support the idea of "last resort" and request to reinforce this approach by giving even more preference and precedence to all less environmentally harmful options, such as Demand Side Management (DSM), interconnection, etc.

Two MS highlight the administrative burden of having to notify individual aid for amounts above € 7.5million in relation to market-wide capacity mechanisms and tendering processes.

Some Member States point to possible contradictions in the EEAG. Two find a contradiction in the prescription that mechanisms should be open to new and existing capacity, with the requirement of incentive effect in para 219. The 4 out of 29 industry respondents identified a mixing up the concepts of generation adequacy with flexibility in certain paragraphs (in particular para 207) of the EEAG.

Three industry respondents object to the proposal to include a review process in national CRM's, as this would lead to further investment uncertainty. On the other hand, one Member State requests that "reversibility or at least adjustability to a European mechanism" is a prescriptive requirement for any CRM.

One industry respondent explicitly warns that CRM's should not take away all investments risks, whereas two others consider that State Aid rules for rescuing and restructuring firms in difficulty (2004/C 244/02) would be a more appropriate instrument (stricter requirements) to tackle the generation adequacy issue, as they consider generators to be firms in difficulty as a result of poor investment decisions.

One MS proposes a transitional period of at least two years to bring its existing capacity remuneration mechanism in line with the new EEAG.

One MS argues that, rather than requiring MS to demonstrate that a capacity mechanism results in no reduction in incentives to invest in interconnection, the guidelines should require

MS to take account of expected interconnector imports when considering the amount of capacity to procure.

One MS claims that the EEAG place too much emphasis on the ENTSO-E modelling. Another MS claims that ENTSO-E's work should be more reflected.

5.10 Tradable permit schemes

On the section "Aid in the form of tradable permit schemes" Italy replied as well as five Industry Associations: The Confederation of Norwegian Enterprises (NHO), Eurelectric – Electricity for Europe, the Federation of Finnish Technology Industries, the Association of the German Dairy Industry, the German National Committee in the International Dairy Federation.

On paragraph 222 b, half of the respondents ask for a clarification of the interactions between the EEAG and the ETS. The question arises, if this section covers the ETS, since paragraph 222 b pre-supposes the use of full auctioning. Furthermore, respondents enquire about the meaning of "substantial" increase in production costs and a definition of "tradable permit scheme". It is wished, that this form of State Aid should not translate into a framework in which compensation dis-incentivises the beneficiaries from reducing their emissions or from engaging in the emission trading scheme. One reply demands that permit schemes should not be accepted.

Moreover, it is requested to verify if distortions are introduced in the market by e.g. the defined "product price elasticity" and the concept of "relevant geographic market". Moreover, these notions are judged as too vague. One reply proposes that it needs further clarification who should carry out the necessary analysis.

6. Evaluation

On the section "Evaluation" five Member States as well as four Industry Associations replied.

Five of six Member States consider that there is no legal basis to oblige MS to carry out an evaluation. Therefore they ask to delete the provisions.

Three out of six Member States reply that, if the paragraph remains, the limitation on the support schemes to 4 years is too short. They are in favour of 10 years, as investments in the green transition are often expensive and the investors trust in the aid schemes is important. Also three of the four Industry Associations agree that 4 years are too short. They see it as inconsistent with the approach presented in paragraph 171 and incompatible with the need to ensure investors the predictability of return on investments in conventional units.

One Member State raises the question whether a Member State has in place an aid scheme according to the general block exemption regulation, but an individual project is notified according to the guidelines, should such a project be subject to an evaluation as well.

One Member State questions the need to require independent experts to carry out the evaluation.

7. Entry into force

Four industry organisations considered that the fact that schemes concerning operating aid in support of energy from renewable sources only need to be amended when Member States change their existing scheme, brings investors' confidence and less administrative burden.

However, the current wording is perceived as unclear. Many respondents asked for clearer wording regarding the appropriate measures, particularly on what the Commission understands by "change" to a scheme. 5 industrial respondents asked the Commission to clarify whether other operating aid schemes for renewables, which are not changed, need not be changed at all. Some see the possibility that Member States will be reluctant to make sometimes necessary technical adjustments to their mechanisms for fear that this would necessarily result in a fundamental change of the system. One contribution suggested including provisions on acquired rights of investors.

A large number (17, including 3 Member States) of the respondents who commented on this point, sees no justification for the retroactive application of the Guidelines for reductions in funding support for energy from renewable sources, as it could damage investor confidence. Five contributions from industry suggested that the avoidance of retroactivity should also apply to other operating aid schemes in the power sector (e.g. cogeneration).

The transition period of 12 months is seen by 16 respondents as too short. Most of them asked for longer transition periods, ranging from 18 to 36 months. One MS also requests to take account of the legitimate expectations of investors in order to include the impact that the EEAG reforms will have on the conditions of the internal market.

Two respondents noted that the draft EEAG currently make no special provision in relation to measures developed (but not approved) before the publication of the Guidelines.

8. Reporting and monitoring

No specific comments have been received.

9. Revision

No specific comments have been received.

Annex 1 Aid intensities

60% of the comments were submitted by MS, 30% by industry and 10% by NGOs. All respondents except one (Czech Republic) asked to maintain the same aid intensity levels as in the 2008 EAG in all aid categories. Most respondents estimate that the proposed values will result in lower aid amounts.

Most comments (40%) were related to energy efficiency. Respondents requested increasing the proposed levels. Respondents also proposed specific increases in the categories of standards and renewable energies.

Annex 2 Typical State interventions

On the Annex 2 Typical State interventions five Member States replied as well as COGEN Romania, COGEN Europe, EHP – Euroheat and Power and the Bulgarian District Heating Association.

Two MS and three Industrial Associations proposed alternative wording for the counterfactual and eligible costs definition in *District heating and cooling*. The proposed changes are "The costs of investment in the construction, extension and renovation of the network or one or several production units which must be part of an efficient district heating and cooling.", "The investment costs for the construction, expansion, refurbishment of pipes and/or one or more generation units which shall be an integral part of the efficient district heating and cooling system." and " The investment costs for the construction, expansion, refurbishment of one or more generation units and/or network of pipes and other equipment which shall be an integral part of the efficient district heating and cooling system".

On *CHP* one MS and all four Industry Associations proposed changes. "The investment costs for the additional investment needed for the installation to operate as a high-efficiency cogeneration installation compared to the cheapest investment that could have been made to serve the purpose of the installation in accordance with the existing regulations" and "The investment costs for the additional equipment investment needed for the installation to operate as a high- efficiency cogeneration installation compared to the cheapest investment that could have been made to serve the purpose of the installation in accordance with the existing regulations", while two others propose " The investment costs for the installation to operate as a high-efficiency cogeneration installation". They argue, while the concept of additional costs works very well when it is used to describe the investment necessary to extract heat in large power plants, it is less appropriate for smaller, heat-driven CHP installations whose primary purpose is the generation of heat to supply a heat network. The process of converting an installation to operate as a high-efficiency cogeneration installation or to upgrade to a higher efficiency' implies essential and unavoidable costs above and beyond the narrow category of "additional equipment" (purchase of land, typically in urban areas, administration…). As an alternative the Commission could add the following sentences to the definition:: "The counterfactual is a conventional heating system or power plant with the same capacity in terms of the effective production of energy." The counterfactual scenarios should be: Industrial CHP installation: heat-only-boiler, Power plant extracting heat: electricity-only plant.

One MS asked to include the sentence in paragraph 90 of the existing EAG after "aid for going beyond Union standards" and "absence of Union or national standards".

One reply asks that the footnote linked to *Environmental Studies should mention that not only* energy-efficiency audits are included in this category .

For *Biogas production which is upgraded to a level of natural gas*, one MS proposes choosing a typical energy scenario and not the refinery, because refineries are only consumers of energy fuel, the natural gas supplied from an external network, but not involved in production. The chemical use of methane as the main component of natural gas is a very specific use of natural gas these days. The process of refining biofuels to the quality of natural gas, given its availability, operates at the level of specific local applications and is definitely not for large-capacity chemical and refinery production, with which it cannot compete within the space of a few decades.

Annex 2 should also include eligible costs for aid granted to transport and distribution of heat networks.

Special mention to other contributions received

In addition to the initial sample of comments analysed and summarised above, it has to be noted that the majority of replies received to the consultation were identical contributions sent individually by a large number of respondents

Number of respondents that sent the same contribution	**Key points of contributions**
Approximately 2432 citizens involved in small renewable energy cooperatives in Germany	• Energy cooperatives express a preference to maintain feed-in-tariffs to support renewable energy installations. • Member States should be free to formulate renewable energy support systems. • Are against bidding to be applicable to small cooperatives. • Concern about access to the network for renewables. • Disagree with State aid being granted to coal and nuclear energy .
57 citizens and organisations involved in small renewable energy cooperatives	
43 citizens and organisation (contribution sent in English, French and Dutch)	
75 citizens and organisations from Ireland	Ask for subsidies to wind farm developers to stop (reasons of job losses due to damage to the landscape, maturity of the technology, risks of grid instability, lack of proper information and consultation of local citizens, substantial wind capacity reached)

Finally, a sample 106 of the individual contributions from citizens was analysed. All these citizens, mostly from France, Belgium and UK expressed strong concerns towards EU energy policy as it promotes State aid for the installation of wind turbines that in their view have severe negative impacts on the health of the inhabitants living close to windmills, the local economy (drops in house prices, decrease in tourism) and the environment (impact on local or migratory fauna and the landscape).

Consultations on the review of the General Block Exemption Regulation

As part of the State aid Modernisation process (SAM), several consultations have taken placed in order to review the General Block Exemption Regulation (GBER).

1. A first consultation on procedural parts of the General Block Exemption Regulation was held from June to September 2012. This consultation did not include the environmental measures.[124]

2. The second consultation on a draft Regulation took place from May to June 2013.[125]

3. The third Consultation on additional categories did not contain environmental

[124] All responses are available on: http://ec.europa.eu/competition/consultations/2012_gber/index_en.html
[125] All responses are available on: http://ec.europa.eu/competition/consultations/2013_gber/index_en.html

measures.[126]

4. The fourth consultation referred to the draft GBER containing all the provisions of the Regulation, including environmental and energy measures[127]. The consultation opened on 18 December 2013 and closed on 12 February 2014.

Main comments received during the second consultation (March-June 2013)

The following section summarises the replies received during the second consultation, in what it concerns the energy and environmental measures.

Investment aid for higher standards, early adaptation

There were some requests for clarification on eligible costs. Two Member States asked, respectively to expand the threshold for these measures:

- the acquisition of new railway transport vehicles and for retrofitting existing railway transport vehicles,
- the introduction of zero-emissions electric vehicles.

Another Member State asked to increase the aid intensities for adaptation to future Union standards.

Investment aid for energy-saving measures

There were some requests to extend the scope of this category. For instance, given the difficulty to stimulate energy savings in buildings used by others than beneficiary, it was suggested to add "and their tenants" (in addition to "the owners") in this provision. Another suggestion was to add energy storage and new technology as fuel cells.

Others asked that the definition of eligible costs as "investment costs for energy saving measures" would be more accurate and less ambiguous.

A number of stakeholders asked for the measures from Energy Efficiency Directive to be exempted.

Other individual responses included requests for higher intensities, addressing supporting only promising technologies or adding additional measures to this category.

Investment aid for high-efficiency cogeneration

Several respondents asked the Commission to remove capacity limits, arguing that a limitation on capacity will lead to smaller projects, meaning less cost-effective and less efficient. Improvements to bigger installations would allow to reach targets quicker and at lower cost.

A large number of stakeholders noted that retrofitting existing plants without installing new capacity is sometimes a more cost-efficient solution for future energy savings than building

[126] All responses are available on: http://ec.europa.eu/competition/consultations/2013_second_gber/index_en.html

[127] http://ec.europa.eu/competition/consultations/2013_consolidated_gber/index_en.html

new infrastructure. There were also questions on how to interpret the term "newly installed capacities".

Promotion of Renewable Energy Sources (RES)

The introduction of a balancing requirement and of competitive bidding schemes was welcomed by some.

There were views against adding new requirements for investment aid for the promotion of RES. Some Member States considered some points of the provisions on support to RES too restrictive, costly or burdensome.

It was asked to allow the possibility to grant aid in the form of feed-in tariffs in addition to feed-in premiums. There were suggestions to extend the scope to the production of bioliquids and other forms of energy, not just electricity.

Some welcome technology neutral bidding process. However, there were replies warning that this approach has not been used in practice. Some respondents pointed out the difficulty to fulfil the condition of a bidding process in small countries without adequate number of competitive enterprises. Others warned in their replies that bidding may risk that only the cheapest technologies are deployed. If the bidding process is open to electricity generated in other Member States, this could encourage a "subsidy race".

Some of the energy companies questioned the capacity cap because there is already a financial cap. Other non-governmental respondents noted that aid to small local production does not seem to be properly covered in the draft put for consultation.

Tax reduction schemes

Several industry representatives asked to include an include exemption for energy-intensive users. Other respondents asked that all tax measures that comply with the minimum tax requirements under Directive 2003/96/EC be block-exempted.

Remediation of contaminated sites

Several respondents, including Member States asked to keep aid intensity at the same level (100%) as it is in the current guidelines. It was asked to extend to the scope to brownfield and derelict sites.

Energy efficient district heating and cooling

Many respondents from the energy sector asked for the removal of capacity remove capacity limits. Several energy companies asked that the scope covers the renovation, expansion and modernisation of district heating and cooling installations to meet and go beyond the 'efficiency' criteria.

There were also queries on the eligible costs, the definition of distribution network and what construction and expansion means.

A few Member States suggested that aid intensity of at least 50% of eligible costs would be appropriate.

Main comments received during the third consultation (December 2013 - February 2014)

Almost 200 replies were received, of which 23 from Member States. The main comments regarding the section on aid for environmental protection were as follows:

- Three Member States requested to include in the scope aid to waste projects. Other categories requested by stakeholders were a) improvement of air quality, b) energy infrastructure and c) geothermal energy;
- Regarding investment aid to meet higher standards, early adaptation to standards and energy-saving measures, nine respondents asked to increase the aid intensities levels;
- On investment aid for energy efficiency in buildings, six respondents including five Member States asked to allow more flexibility regarding the aid instruments. Three Member States asked to increase the nominal values of the loans to EUR 15 million;
- Regarding investment aid for high-efficiency cogeneration, most respondents welcomed the introduction of refurbishment in the scope. Several respondents asked for aid intensities to be increased.
- As for aid to promote renewable energy sources, ten respondents asked aid to be granted for the modernisation of existing capacities (not just for new installations). The increase in the aid intensities was also often asked for this type of measures. Five stakeholders asked for the exemption to biomass to be removed. Several respondents also to clarify certain provisions, in particular those regarding balancing obligations.
- Finally, on aid to energy efficient district heating and cooling, some of the respondents asked to include aid for refurbishing existing efficient district heating and cooling systems. Four respondents proposed to increase aid intensity levels to 100% in the case of a competitive bidding process.

The consultation document and public versions of replies to the consultation are available on Europa's website[128].

[128] http://ec.europa.eu/competition/consultations/2013_consolidated_gber/index_en.html

THE 2008 EAG

Market failure addressed

Economic activities can harm the environment through pollution. Article 191 of the Treaty explicitly States that in principle, the polluter should pay all the costs of the pollution. This principle is known as the Polluter pays principle (PPP). In certain cases, in the absence of government intervention, undertakings can avoid bearing the full cost of the environmental harm arising from their activities. As a result, the market fails to allocate resources in an efficient manner, since the (negative) external effects of production are not taken into account by the producer, but are borne by society as a whole. According to the PPP, these negative externalities can be tackled by ensuring that the polluter pays for its pollution, which implies full internalisation of environmental costs by the polluter. This is intended to ensure that the private costs (borne by the undertaking) reflect the true social costs of the economic activity.

Without government intervention, the PPP may not be respected by companies and there is a market failure. Member States can intervene in two main ways, either by imposing regulation on market players (e.g. set an emission cap for certain economic activities) or provide individual incentives to certain companies to achieve a higher level of protection than required by regulation.

Scope of the EAG

The 2008 EAG are applicable to the following thirteen categories.

Table 9: List of categories included in the scope of the 2008 EAG.

Number	Full name of the category	Simplified name used in this report
1	Aid for undertakings which go beyond Community standards or which increase the level of environmental protection in the absence of Community standards	Standards
2	Aid for the acquisition of new transport vehicles which go beyond Community standards or which increase the level of environmental protection in the absence of Community standards	
3	Aid for early adaptation to future Community standards	
4	Aid for environmental studies	Environmental studies
5	Investment and operating aid for energy saving	Energy saving
6	Investment and operating aid for renewable energy sources	RES-other (excluding biofuels) RES-biofuels (support for the production of biofuels)
7	Investment and operating aid for cogeneration	CHP
8	Aid for energy-efficient district heating	District heating
9	Aid for waste management	Waste management
10	Aid for the remediation of contaminated sites (investment aid)	Decontamination aid
11	Aid for the relocation of undertakings	Relocation aid
12	Aid involved in tradable permit schemes	Tradable permits
13	Aid in the form of reductions or exemptions from environmental taxes	Environmental taxes rebates

State aid measures can be classified in three groups according to the targeted beneficiaries:

- Schemes: any act on the basis of which, without further implementing measures being required, individual aid awards may be made to undertakings defined within the act in a general and abstract manner, and any act on the basis of which aid which is not linked to a specific project may be awarded to one or several undertakings for an indefinite period of time and/or for an indefinite amount
- Ad hoc aid: individual aid not awarded on the basis of an aid scheme.
- Individual aid: is ad hoc aid, or a notifiable award of aid on the basis of an aid scheme;

From a procedural point of view, the 2008 EAG have two features. First they provide for two types of assessment depending on the scale of the potentially distortive effects of the aid. Second EAG use the so-called balancing test as the methodology to undertake the compatibility assessment.

Two types of assessment: standard versus detailed

The 2008 EAG distinguish between two types of assessment: the standard and the detailed assessments. The first type is used for measures where the amount of aid or the size of the facility is below certain thresholds. The detailed assessment involves a more in-depth analysis of the positive and negative aspects of the aid.

The balancing test

In assessing whether an aid measure can be deemed compatible with the common market, the Commission balances the positive impact of the aid measure in reaching an objective of common interest against its potentially negative side effects, such as distortion of trade and competition. The State Aid Action Plan[129] formalised this balancing exercise in what was termed as the "balancing test". The balancing test operates in three steps; the first two steps address the positive effects of the State aid and the third addresses the negative effects and resulting balancing of the positive and negative effects. The balancing test is structured as follows:

1. The aid measure must aim at a well-defined objective of common interest. In the context of the EAG, the measure must aim at the protection of the environment.
2. The measure must be well designed to deliver the objective of common interest that is to say, it must address the identified market failure or other objective it aims at:
    - State aid must be the appropriate policy instrument
    - The measure must have an incentive effect, that is, without the measure the undertakings benefiting from the measure would not have changed their behaviour and reached the objective of common interest
    - The measure must be proportionate, that is, the amount of aid must be the minimum possible to trigger the intended change of behaviour.
3. The distortions of competition and effect on trade of the measure are limited. The overall balance of positive and negative effects must be positive

THE SCOPE OF GBER

[129] State aid action plan - Less and better targeted state aid : a roadmap for state aid reform 2005-2009 (Consultation document) {SEC(2005) 795} /* COM/2005/0107 final */

Besides the horizontal and sectorial Guidelines, Member States can also grant aid under the General Block Exemption Regulation (GBER). This Regulation allows Member States to grant aid without the need to notify the measure in advance. Measures are not subjected to an ex-ante compatibility assessment by the Commission. The compatibility criteria build from those established in the Guidelines although with stricter aid intensity thresholds to account for the fact that the Commission does not examine ex-ante these measures. The scope of the existing GBER is listed below. The table also shows if the category is included in the scope of the EAG:

Table 10: Environmental protection categories in GBER

Full name of the GBER category in the field of environmental protection	Also in the scope of the existing EAG?
Aid for undertakings which go beyond Community standards or which increase the level of environmental protection in the absence of Community standards	Yes
Aid for the acquisition of new transport vehicles which go beyond Community standards or which increase the level of environmental protection in the absence of Community standards	Yes
Aid for early adaptation to future Community environmental standards for SMEs	Yes. EAG is not limited to SMEs
Aid for environmental studies	Yes
Investment for energy saving	Yes. EAG also includes operating aid
Investment aid for renewable energy sources	Yes. EAG also includes operating aid
Investment and operating aid for high-efficiency cogeneration	Yes. EAG also includes operating aid
Aid for energy-efficient district heating	Yes
Aid in the form of reductions or exemptions from environmental taxes	Yes

DATA AVAILABILITY

Member States must report to the Commission the amount of aid granted under each State aid environmental measure. The available information has however several limitations:

- The figures are reported for all the measures included in the Commission's Decision reference number. If the measures consist of a multi-category support scheme (for instance, renewable energies, cogeneration and energy savings) the MS will only report the aggregated expenditure.

- It does not include the number and names of the beneficiaries.

Furthermore there are currently no provisions for conducting ex-post evaluations of aid measures. The Commission acknowledged the benefits of an ex-post evaluation paper in an Issues paper published on 12 April 2013[130]. EU State aid rules tend to be based on a system of ex-ante scrutiny: aid measures are approved on the basis of pre-defined assessment criteria on the assumption that, as long as the measures comply with these assessment criteria, the balance between their environmental objective and their impact on competition and trade will be positive. Ex-post evidence on what has been actually achieved with public funds or on the actual impact of State aid on competition has so far received limited attention in the implementation of EU State aid rules. As a result there is limited information on the efficiency and effectiveness of State aid measures once implemented. The Commission launched a public consultation on a guidance paper regarding evaluation methodologies in the field of State aid[131].

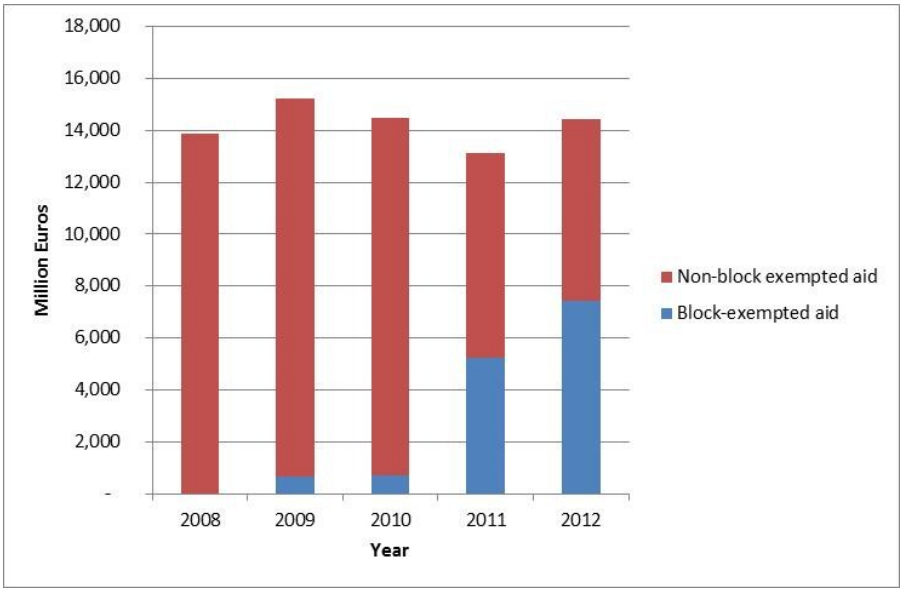
For aid granted under the General Block Exemption Regulation (GBER), that is non-notifiable, Member States have to provide the Commission with summary information whenever an aid scheme or ad hoc aid that falls under the remit of the GBER is implemented[132]. This summary is then published on the Official Journal. In addition, Member States must produce annual reports on the application of the GBER.

TOTAL ENVIRONMENTAL AID EXPENDITURE

According to the figures submitted Member States have granted from 2008 to 2012 a total of 57 billion euros under 539 non-block exempted environmental measures[133] and 14 billion euros under 339 block exempted measures, totalling 71 billion euros. The annual total amount of environmental State aid (block exempted and non-block exempted) has been stable from 2008 to 2012 around 14 billion euros a year. Block exempted aid was negligible until 2011 and increased significantly in 2011 and 2012 at the expense of non-block exempted aid. The increase was due to the shift of tax exemption measures once adopted under EAG 2001 into redesigned GBER measures (see section 0 for more details).

[130] http://ec.europa.eu/competition/state_aid/modernisation/evaluation_issues_paper_en.pdf
[131] http://ec.europa.eu/competition/consultations/2013_state_aid_modernisation/draft_guidance_paper_en.pdf
[132] The reporting template is included in Annex II of Regulation 800/2008.
[133] As reported by Member States under the reporting obligations established in the Commission Regulation 794/2004 implementing the Council Regulation 659/1999

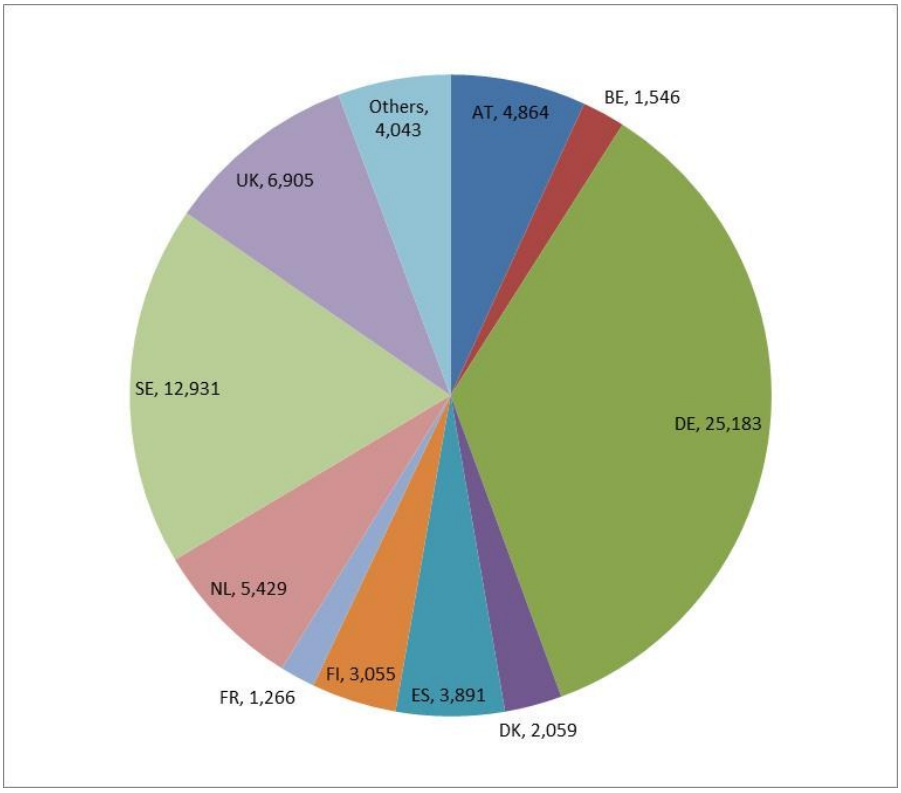
Figure 14: Total environmental aid broken down in block-exempted and non-block exempted aid between 2008-2012.



Source: DG COMP

Regarding the type of aid (block exempted and non-block exempted), 754 measures were schemes, 102 measures ad hoc aid and 22 measures individual aid. In terms of expenditure, schemes represented 99% of the total aid granted. Figure 15 provides a breakdown of the total 71 billion euros per MS:

Figure 15: Total environmental (block and non-block exempted) aid broken down by Member State between 2008-2012 in million euros.



Source: DG COMP

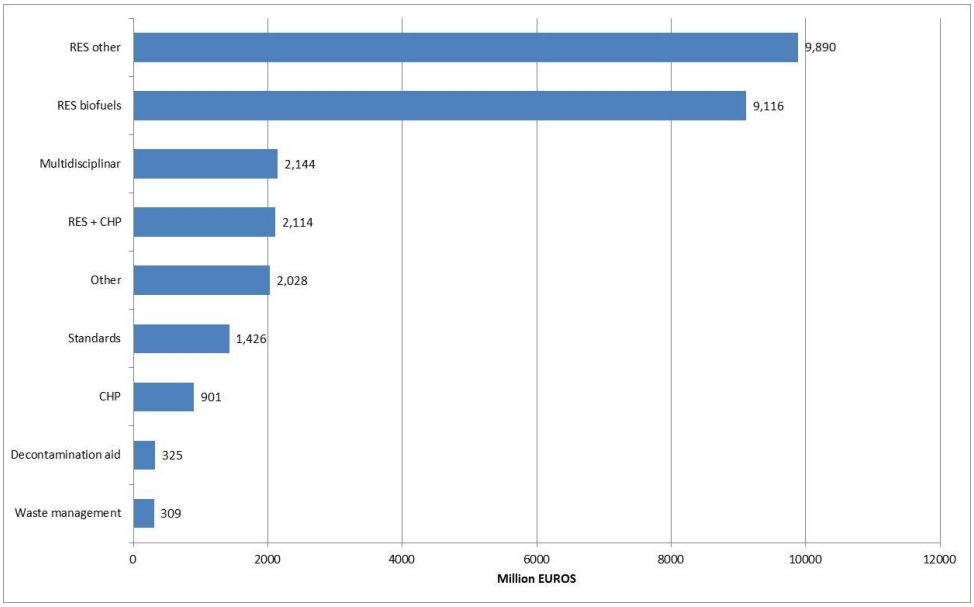
Non-block exempted expenditure

EUR 55 billion, that is, 98% of the aid granted under the 539 non-block exempted measures, was granted under just 119 cases. All measures were schemes except one case of individual aid and another one of ad hoc aid.

96% of the aid granted was covered by the scope of the EAG: EAG 2001 (78%), followed by EAG 2008 (18%). 3% of the aid granted was approved directly under the Treaty and the other 1% was approved under the SGEI framework or other legal basis. The largest expenditure between 2008 and 2012 (EUR 27 billion) was reported under the category environmental tax rebates largely approved under the 2001 EAG for validity periods of up to ten years. Upon the expiration of these measures Member States redesigned the measures to meet the criteria in GBER.

Figure 16 shows the breakdown according to each category but excluding environmental tax rebates measures approved under the 2001 EAG. The largest amount of aid was granted under the category renewable energy sources (EUR 9 billion to the production of biofuels; 10 billion to other renewable energy sources).

Figure 16: Classification of the aid granted under an environmental objective without including a) block-exempted aid; b) environmental tax rebates approved under the 2001 EAG [134]



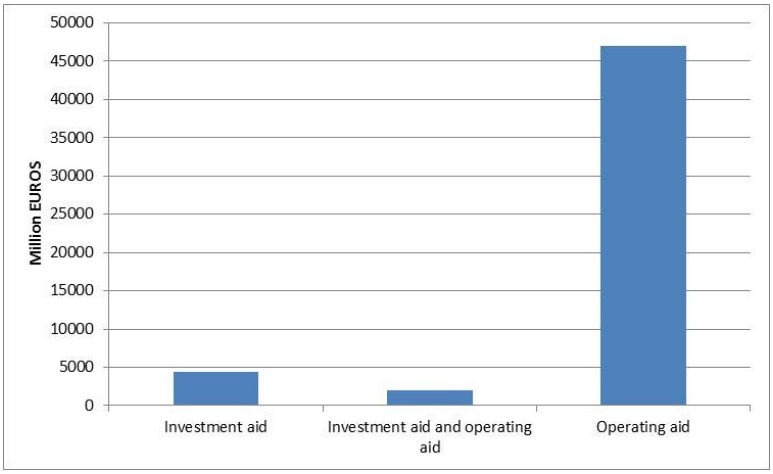
Source: DG COMP

Germany was the Member State that granted the largest amount of aid (18 billion euros) followed by Sweden (10 billion euros), the United Kingdom (5.9 billion euros) and the Netherlands (5.2 billion euros). Germany and Sweden granted most of the environmental aid under the category of environmental tax rebates. Figure 18 shows the breakdown of the aid categories in the ten MS that granted the largest amount of aid.

The EAG establish that investment aid can be granted to all categories in the Guidelines. Operating aid is also allowed for some categories as indicated in Table 9. Most aid granted in the period 2008-2012 was granted as operating aid.

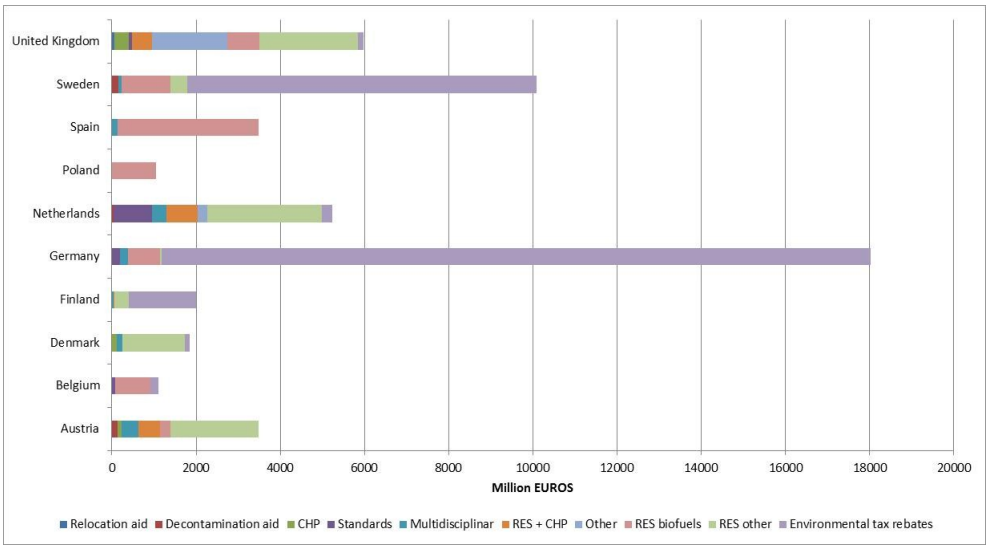
[134] The classified measures (119 cases) represent 98% of the total non-block exempted environmental expenditure.

Figure 17: Investment and operating aid granted under 2001 EAG and 2008 EAG.



Source: DG COMP

Figure 18: Top 10 Member States regarding the amount of the non-block exempted environmental aid granted between 2008-2012.

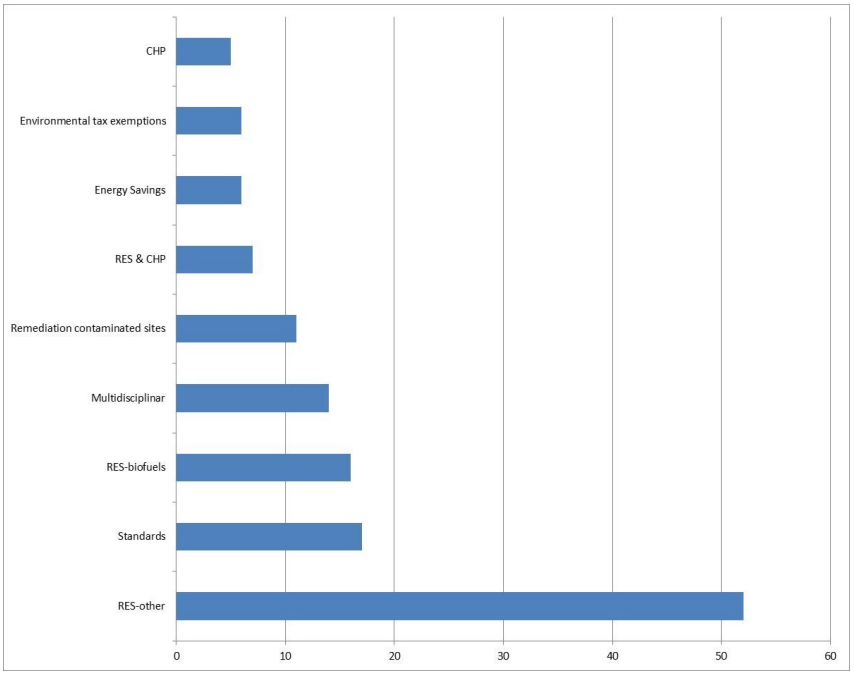


Source: DG COMP

MEASURES APPROVED AND AID EFFECTIVELY GRANTED UNDER THE 2008 EAG

From the 1 January 2008 until 30 June 2013 the Commission has approved around 144 measures under EAG 2008. Figure 19 shows the breakdown according to categories. The figure shows categories where the Commission adopted at least three Decisions. The multidisciplinary category groups those decisions that covered more than one category. Measures involving joint support schemes to renewable energy and sources have also been depicted.

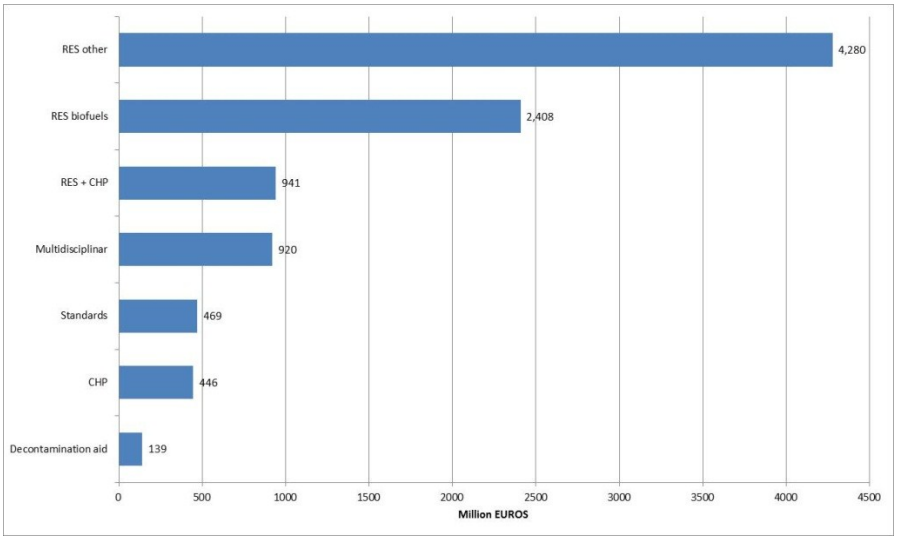
Figure 19: Number of measures approved under the existing EAG between 01/01/2008 and 15/06/2013



Source: DG COMP

The following picture shows the amount of aid granted by Member States under the 2008 EAG between 2008-2012. The category under which the largest amount of aid was granted was to renewable energy sources and combined heat and power (8 billion euros) out of the total 10 billion euros.

Figure 20: Classification of the aid granted under the 2008 EAG above EUR 100 million. Source: DG COMP



Source: DG COMP

Measures outside the scope of the EAG

There were 34 measures that fell outside the scope of the Guidelines and had to be assessed directly under Article 107 of the Treaty. These 34 measures can be grouped according to three environmental and energy domains: carbon capture and storage (5); energy infrastructure (14) and district heating and cooling networks (15).

Data used

The sectors surveyed are the 246 NACE-4 sectors belonging to mining and quarrying or manufacturing. Electricity intensity in a NACE-4 sector is defined as the total electricity costs, multiplied by the average EU electricity price for industrial consumers and divided by the GVA. We collected the data recently used by the Commission for its revision of the Carbon Leakage list, in particular the electricity consumption and GVA[135] per NACE-4 sector, on average over the 2009-11 period. The electricity price was assumed to be 154 EUR/MWh for all sectors, which corresponds to the average EU price for industrial consumers (20MWh-500MWh per year) in the second semester 2011[136]. The size bracket was chosen in order not to take into account the exemptions from RES financing costs already granted to some (usually larger) electricity-intensive companies. Trade Intensity is calculated as exports and imports divided by turnover in the EU and imports vis-à-vis countries located outside the EU, on average for the 2009-11 period. The period of 2009-11 was selected for being recent and used by the Commission for its revision of the Carbon Leakage list.

Rationale for the design options in the "*adjusted ETS criteria options*"

Loss in competitiveness is caused when a firm is unable to sustain a previously acquired share of the market in which it operates. Increases in RES charges are most likely to lead to a loss in competitiveness for companies that are both electricity-intensive and trade-intensive:

High trade intensity indicates that customers in these sectors are willing to look beyond their country borders in search for profitable procurement opportunities. This potential of cross-border trading suggests that suppliers are not able to pass on increases in RES charges without a significant loss of market share. They might in turn be willing to look for relocation opportunities beyond country borders if that would imply a substantial lowering of their costs. Therefore, companies in sectors with high trade intensity can be expected to look for relocation opportunities if some of their electricity costs were increased because of high RESs.

Electricity intensity measures the extent to which firms' input costs are affected by an increase in electricity costs.

Use of electricity-intensity vs. RES financing costs/GVA

Options 4.2.3 to 4.2.5 all use electricity intensity instead of RES financing costs divided by GVA, to determine whether a sector (or company) can be made eligible. Using electricity intensity instead of RES financing costs/GVA has the following pros and cons:

- Pros: Retail electricity prices more accurately reflect the cumulative costs of electricity supply for industry, which is more relevant in assessing the competitiveness of different sectors. Several stakeholders commented in their responses that the Commission should consider cumulative costs on industry. In addition, in determining the list of eligible sectors at the EU level, it allows for an EU-wide list of eligible

[135] Note: GVA data was sourced from EUROSTAT.
[136] Source: DG ENER, Quarterly Report on European Electricity Markets, January 2012-March 2012, p.28.

sectors - national RES support schemes do not play a role in electricity intensity under the assumption that electricity intensity within the same sector is comparable across the EU.

- Cons: there is no link anymore between RES financing costs and eligibility, which may also call for other types of costs than RES financing to be supported through State aid. Accordingly, under this scenario, RES financing costs have to be taken into account for aid proportionality.

On balance, and in view of the feedback from stakeholders to the consultation, taking into account cumulative costs on industry seems as the most appropriate approach.

Level of own contribution in options 4.2.2 to 4.2.5

Selecting the (in principle) minimum percentage payment of the average RES financing cost (the "own contribution") from companies eligible for aid involves a trade-off:

- On the one hand, higher required own contributions may reduce the international competitiveness of EU firms.

- On the other hand, lower required own contributions may increase the burden faced by other consumers and the distortions between eligible and ineligible companies. Lower required contributions would also effectively increase the range within which Member States would be able to set the RES charge for eligible companies. The increased potential for disparities in charges between Member States could further distort trade.

Several Member States, energy users and industry associations commented in the third Public Consultation that the 15%/20% own contribution proposed in the published Draft Guidelines[137] would be economically damaging. Some Member States currently granting discounts on levies or charges on electricity consumption do require own contributions not far from 20%[138], suggesting that would not necessarily damage international competitiveness. Several possibilities are considered in option 4.2.5 to introduce a backstop against excessive burdens by capping the RES charges for eligible companies.

Granting of the aid in options 4.2.2 to 4.2.5: The use of lump-sum compensation

The published Draft Guidelines[139] stated that "…[t]he Commission will consider the aid to be proportionate if… the compensation is paid as a lump sum amount." In the presence of discounts on RES charges, the marginal RES cost faced by companies may differ between eligible and ineligible companies (or even within eligible companies). Such differences in marginal costs would represent a distortion in price signals, leading to an inefficient allocation of resources (e.g. excess electricity consumption in sectors facing low marginal RES costs.

[137] Para. 186(b).

[138] For example:

- In Poland, the most electricity intensive EIUs (those with an a ratio of electricity costs compared to production value of above 12%) need to meet the certificate obligation for 20% of electricity purchased.
- In Spain, the average network charge for large EIUs in 2012 was 0.76 ct/kWh, about 19% of the average network charge for other users of 3.93ct/kWh.
- In Denmark, EIUs will pay 0.68 ct/kWh in 2014, 27% of the charge for other users of 2.5 ct/kWh.

[139] Para. 186.

Lump sum compensation (e.g. like a tax credit), largely independent from the amount of electricity consumed, would be one way to equalise marginal costs while limiting the average burden faced by companies within exempted sectors. Lump sum compensation could be designed in a way to avoid negative impacts on companies' cash flows (e.g. awarded on an ex-ante basis rather than an ex-post basis).

However, several Member States commented that a lump sum approach would be very difficult to implement practically.

The use of caps in the RES charges that individual undertakings would pay in Option 4.2.5

Two designs were considered for option 4.2.5: Percentage of GVA vs. €/MWh

Option 4.2.5 caps RES charges paid by individual undertakings at a certain percentage of company-level GVA, depending on their electro-intensity. The two designs that were considered were:

- A cap linked to the GVA of the company; and
- A cap on the per MWh levy, but not the total amount

Using percentage of GVA instead of €/MWh has the following pros and cons:

- Pros: Allowing MS to limit RES charges based on percentage of GVA has a clear economic rationale, in that it ensures that aid is targeted at those companies that need it the most (i.e. more electricity-intensive companies are more likely to rely on the cap to limit the burdens they face). In addition, a fixed €/MWh cap may not keep pace with increases in RES costs or changes in economic circumstances. While it may be possible to index a fixed €/MWh cap to GVA growth, this approach may add complexity.
- Cons: Firms with lower GVA (i.e. lower profits) are likely to benefit more from a cap based on percentage of GVA. Hence there is a risk of rewarding relatively less efficient (i.e. less profitable) firms, even within the same sector. More generally, companies may have other opportunities to their GVA, and by implication the level of the cap they face, raising potential gaming concerns.

On balance, a cap based on percentage of GVA renders higher benefits in terms of simplicity and in ensuring that aid is properly targeted.

Annex 6: List of eligible sectors resulting from the options considered in Policy Area "Exemptions/ reductions from RES financing"

Option 4.2.2 - Use the approach of the ETS Guidelines

NACE	Description
710	Mining of iron ores
891	Mining of chemical and fertiliser minerals
1310	Preparation and spinning of textile fibres
1411	Manufacture of leather clothes
1711	Manufacture of pulp[140]
1712	Manufacture of paper and paperboard
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[141]
2060	Manufacture of man-made fibres
2410	Manufacture of basic iron and steel and of ferro-alloys
2442	Aluminium production
2443	Lead, zinc and tin production
2444	Copper production

Options 4.2.3 to 4.2.5 - Use adjusted ETS Guidelines

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

[140] The ETS Guidelines only considered one subsector within the Manufacture of pulp sector to be eligible.
[141] The ETS Guidelines only considered certain subsectors within the Manufacture of plastics in primary forms sector to be eligible.

NACE	Description
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

NACE	Description
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

Aid to carbon capture and storage

In a recent Communication[142], the Commission acknowledged that CCS could contribute to mitigating climate change. When the current EAG were drafted there was no case practice to develop compatibility criteria. However the EAG provided for a positive attitude to State aid to CCS projects. To date, the Commission has adopted five positive Decisions regarding CCS[143].

Aid to district heating infrastructure

The 2008 EAG include compatibility criteria for district heating production units. They however do not provide compatibility criteria to district heating networks. Since 2008 the Commission has adopted around sixteen Decisions related to district heating infrastructure.

Aid to energy infrastructure

The Commission stated in the Energy Roadmap 2050 that achieving the full integration of Europe's energy networks and systems and opening up energy markets further are essential in making the transition to a low-carbon economy and maintaining secure supplies at the lowest possible cost. In the Communication "Making the internal energy market work"[144], the Commission noted that to tackle Europe's energy and climate challenges and to ensure affordable and secure energy supplies to households and businesses, the EU must ensure that the EU internal energy market is able to operate efficiently and flexibly. Despite the extensive regulatory and policy framework in the field of electricity generation and energy infrastructure[145], market failures still prevent certain investments. The internal energy market Communication noted that the EU needs to urgently invest in generation, transmission and distribution infrastructure. Existing energy systems need to be modernised at a cost estimated at a trillion Euro[146].

The internal energy market Communication and the impact assessment of the Regulation on Guidelines for trans-European energy infrastructure[147] give a detailed account of the hurdles and market failures hampering investment in energy systems. The report also provides for the regulatory and market design measures to solve the problems. However it acknowledges that State support may be needed in some instances. State aid measures should however be well-designed and targeted at identified market failures in order to minimise the competition distortions to the internal market.

In the period between 2008 and July 2013 the Commission has adopted around 15 positive Decisions[148] under Article 107(3)(c) of the TFEU in the field of energy infrastructure as

[142] Communication on the future of CCS in Europe. COM(2013) 180 final, 27.03.2013
[143] SA.27733, SA. 28231 and SA.30951
[144] COM(2012) 663 final
[145] See http://europa.eu/legislation_summaries/energy/internal_energy_market/index_en.htm
[146] COM(2011) 658 final
[147] COM(2011) 658 final
[148] SA.27659, SA.29779, SA.29870, SA.30980, SA.31953, SA.34359

defined in the TEN-E Regulation[149]. The main objective of common interest of those measures was the strengthening of the internal energy market, an objective currently excluded from the scope of EAG. The case practice adopted addresses therefore the problem and is merely an issue of codification as presented in the following subsection..

Exceptions and reductions from indirect environmental taxes

Environmental taxes address negative externalities. Their objective is to encourage a more environmentally friendly behaviour by increasing the costs of environmentally harmful behaviours. Ambitious environmental taxes can lead to a high financial burden on undertakings, potentially reducing their international competitiveness. Aid in the form of tax exemptions is meant to maintain the competitiveness of particularly exposed undertakings. While any reduction of such environmental tax in principle has a negative environmental effect, reductions may also enable the adoption of higher taxes for other undertakings, resulting in an overall improvement of the level of environmental protection.

The current EAG allow partial exemptions from environmental taxes. When the taxes are harmonised within the meaning of the Energy Taxation Directive[150] EAG concludes that exemptions would be compatible State aid when the measure does not exceed 10 years and beneficiaries pay at least the minimum level established in the ETD. When the taxes are not harmonised, the EAG provide stricter compatibility criteria in particular the necessity, proportionality and its effects at the level of the economic sectors concerned.

In case of a tax levied on energy products used for electricity production, the electricity supplier is liable to pay the tax. However, the electricity price increases if the tax costs are passed on to the electricity consumer (indirect tax costs). In this case, the effect of the tax on energy intensive consumers is comparable to the effect of ETS allowance costs being passed on and included in the electricity price (indirect emissions costs). In this case, tax reductions may be granted in the form of a compensation for the passed on indirect tax costs to the electricity consumer. The compatibility rules for these measures are currently not explicitly spelled out in the EAG but the Commission has recently established case-practice[151].

[149] OJ L 115, 25.4.2013, p. 39
[150] OJ L 283, 31.10.2003. p. 51-70
[151] SA.35449

Annex 8: Overview of the technical changes proposed in option 4.4.2 of the compatibility criteria

#	Issue	Codification of case-practice and alignment with the SAM general approach in the EAG– Technical adjustments
1.	**Codification of case practice – compatibility criteria**	• Carbon capture and storage[152] • Energy infrastructure[153] • District heating and cooling infrastructure[154] • Exemptions/ reductions from the indirect costs caused in electricity prices by environmental taxes[155]
2	**Incentive effect**	Additional requirement for MSs to carry out a credibility check of the counterfactual situation for SMEs and LEs (what would the beneficiary do without the aid) - Alignment with SAM general approach. LEs also to provide documentary evidence support their counterfactual scenario - Alignment with SAM general approach
3	**Notification thresholds for individual assessment**	• Increased thresholds for contaminated sites stemming from case practice

4	**Investment aid:**
	
	Eligible costs and Aid intensities
		• For schemes and ad hoc aid:
		  ○ Environmental aid: Extra investment costs without accounting for the net of the first 5 years of operating costs and benefits. Simplification in line with GBER and RAG.
		  ○ Energy aid: Funding gap (infrastructure / CCS / generation adequacy). Method in line with Case practice
		• Aid intensities adapted to the simplified eligible costs calculations, matching the aid amounts authorised under the

[152] Around 5 Decisions adopted under the Treaty from 2008 to July 2013. For example SA.27733, SA. 28231 and SA.30951
[153] Around 15 Decisions adopted under the Treaty from 2008 to July 2013. For example, SA.27659, SA.29779, SA.29870, SA.30980, SA.31953, SA.34359
[154] Around 16 Decisions adopted under the Treaty from 2008 to July 2013
[155] SA.35449 - Aid for indirect carbon price floor costs

#	Issue	Codification of case-practice and alignment with the SAM general approach in the EAG– Technical adjustments
		existing EAG • Regional bonus, increasing aid intensities for assisted areas
5	**Resource efficiency**	• In addition to the provisions on energy efficiency and waste management, acknowledge that market failures may hinder improving resource efficiency. Requirement on Member States to quantify the efficiency gains resulting from a resource efficiency measure – Policy update
6	**Cumulation**	• For aid ceilings and notification thresholds only State aid to be taken into account. EU funds will not be taken into account – Alignment with SAM general approach
7	**Evaluation**	Introduction of evaluation requirements (inexistent in the current EAG) – Alignment with SAM general approach • Ex post evaluation in evaluation in certain cases: large schemes; if Commission so requests upon approval of the measure in light of its potential negative effects. • Evaluation to be carried out by an expert independent from the State aid granting authority on the basis of a common methodology and to be made public
8	**Transparency**	Publication of information related to schemes / *ad hoc* aid on a website (beneficiaries, amount of aid, granting authority…) – Alignment with SAM general approach

Annex 9: Overview of the GBER conditions proposed in option 4.4.3

Objective of aid	Type of aid	Conditions to be met stemming from the existing EAG and case practice
Remediation of contaminated sites	Investment aid. Notification threshold in line with the EEAG.	In line with the least distortive elements provided in the Guidelines
Energy efficient district heating and cooling	Investment aid. Notification threshold in line with the EEAG	In line with the Guidelines and case practice
Operating aid for the promotion of electricity from renewable sources.	Operating aid in the form of feed-in premiums. Any investment aid previously received should be deducted.	In line with the least distortive elements provided in the Guidelines
Promotion of energy from renewable sources in small scale installations	Operating aid in the form of feed-in premiums. Any investment aid previously received should be deducted.	In line with the Guidelines and case practice
Energy efficiency projects in buildings	Investment aid in the form of a loan with a subsidised interest rate to energy fund or financial intermediary	In line with case practice
Waste recycling and re-utilisation	Investment aid.	In line with the Guidelines and case practice
Energy infrastructure	Investment aid.	In line with case practice

The 10% target for renewable energy sources in the transport sector by 2020 and the requirement to reduce the greenhouse-gas intensity of the EU fuel mix by 6% until 2020 with the corresponding support schemes to achieve those targets have contributed to the increase in the use of biofuels since the adoption of the energy and climate package in 2008.

With respect to support schemes for biofuels, three potential problematic areas were identified:

a) Cost Efficiency

Besides supply obligations or quotas, which do not entail public expenditure, Member States have supported the uptake of biofuels through direct grant schemes and more often through tax or excise duty exemptions. The latter reduce the income of Member States from the respective taxes. Estimations have quantified these projected revenue losses at EUR 7.6 billion for 2020 and cumulated losses of about EUR 80 billion for the period between 2007 and 2020.[156] Measures improving the cost efficiency of biofuel production in this regard seem to be an option to relieve the burden from public budgets. Member States often calculate tax or excise duty rebate schemes by estimating the difference between the production costs of a typical plant and the market price of the equivalent form of energy. However, there is currently no empirical or anecdotal evidence supporting this with figures, leaving the issue as a topic for further monitoring.

b) ILUC and Sustainability

Most of today's biofuels are produced from crops grown on agricultural land, such as wheat and rapeseed. When this land is diverted to the production of biofuels, this other demand still needs to be satisfied. This can be achieved either through changes in the quantity and composition of feedstuffs, avoidance of losses and intensification of production on existing land, or recultivation of land set aside or by bringing non-agricultural land into production elsewhere, leading to an indirect land use change (ILUC). In the latter case, the conversion could lead to substantial additional greenhouse gas emissions, if high carbon stock areas are affected as a result. Scientific work indicates that emissions from indirect land-use change vary substantially according to feedstock and can cancel out some or all of the greenhouse gas savings of individual biofuels relative to the fossil fuels they replace.[157]

The Commission after reviewing the impact of ILUC on greenhouse gas emissions proposed in 2012 a Directive[158] (ILUC proposal) to minimise this impact and set incentives for 2nd and 3rd generation biofuels[159] produced from feedstock that do not create an additional demand for

[156] These figures relate to the EU-25 (Wiesenthal et al., Renewable and Sustainable Energy Reviews 13 (2009) 789-800).

[157] SWD(2012) 343 final, Impact Assessment accompanying the document Proposal for a directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

[158] COM (2012) 595. Proposal for a directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

[159] In the following, the term conventional biofuels refers to biofuels produced from cereal and other starch rich crops, sugars and oil crops as identified in the ILUC proposal, while the term advanced or 2nd and 3rd

land, including algae, straw, and various types of waste. These advanced biofuels require capital-intensive processing, but they promise to be more sustainable offering higher emissions reductions and less sensitivity to fluctuations in feedstock costs.[160]

The main elements of the legislative proposal as submitted by the Commission are as follows:

- To increase the minimum greenhouse gas saving threshold for new installations to 60% in order to improve the efficiency of biofuel production processes as well as discouraging further investments in installations with low greenhouse gas performance;

- To include ILUC factors in the reporting by fuel suppliers and Member States of greenhouse gas savings of biofuels;

- To limit the amount of conventional biofuels that can be counted towards the EU's 10% target for renewable energy in the transport sector by 2020, to the current consumption level, 5% up to 2020, while keeping the overall renewable energy and carbon intensity reduction targets;

- To provide market incentives for 2nd and 3rd generation biofuels, as they will contribute more towards the 10% renewable energy in transport target of the Renewable Energy Directive (RED).

In the public consultation, some stakeholders also expressed their concerns with regard to the sustainability of conventional biofuels and advocated a phase-out of aid. However, the guidelines already contain the provision that State aid can only be granted to sustainable biofuels, as defined in Article 17 of the RED.[161] This is in line with reactions from the majority of respondents to the public consultation, where many comments by industry and Member States were in some way critical of the envisaged differentiation between conventional and advanced biofuels. The main arguments put forward were that only sustainability criteria should be relevant and results of the discussions on the ILUC proposal, that are today uncertain, should not be anticipated.

In addition, in view of the estimated overcapacity and limited projected growth of conventional biofuel production and consumption in the EU, investors are unlikely to commission new plants, even if aid was made available for those. In this regard, the Impact Assessment of the ILUC proposal estimates that the capacity utilisation of existing plants in the EU is around 50%. This is confirmed by other sources. For instance, EurObserv'ER indicates that biodiesel production capacity in 2012 amounted to 23.5 million tonnes with European output standing at 8.6 million tonnes in 2011, bioethanol fuel production capacity at 8.1 billion litres with actual output running at 4.84 billion litres in 2012.[162]

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generation biofuels relates to biofuels produced from feedstock that does not create additional demand for land.

[160] IRENA (2013), Production of Liquid Biofuels, Technology Brief.

[161] As soon as the ILUC proposal is adopted, the EEAG will refer to the amended Directive (EC) 2009/28 and therefore the added sustainability criteria of the above-mentioned proposal will be consistently taken into account.

[162] EurObserv'ER (2013), Biofuels Barometer, No 216-2013.

In any event, the problem has been addressed by the ILUC proposal and the change of the current situation through the ILUC proposal, if and when it is adopted, in various regards has been identified and thoroughly investigated in the Impact Assessment Report accompanying the ILUC proposal.[163]

3) Price distortions

It has been reported that the increased use of feedstock for the production of conventional biofuels has had an impact on the price of the respective crops and on industries using the respective resource for alternative purposes. For bioethanol, its impact on global cereal markets was estimated at around 1-2% of the price, while for biodiesel the price effect on the respective food oil crops was larger at around 4%.[164] In addition, also in the public consultation concerns were raised about effects on industries of alternative use of biofuel feed stock.

For conventional biofuels, the ILUC proposal and likely discontinuation of support for conventional biofuels after 2020[165] should mitigate this impact. For advanced biofuels, these effects have not yet been further analysed, as their current share is very limited, making significant distortions less likely. In general, the distortions rather originate from the policies promoting the use of biofuels and the related targets. State Aid rules and/or case practice already in force today try to limit distortions to the extent possible by constraining aid to biofuels from sustainable categories and by critically examining the incentive effect of the aid when a genuine supply obligation exists.

As stated in the previous sub-section, only those support schemes that meet all the criteria laid down in section 2.1.1 of the present document may constitute State Aid[166] and are therefore taken into account, when devising the options and evaluating the impacts, as any measure not qualifying as State Aid is at the sole discretion of the respective Member State.

In line with the increased use of biofuels, also the amount of aid distributed to this sector has been substantial. In the period between 2008 and 2012 Member States reported an expenditure of EUR 9.1 billion under 21 schemes (18 tax rebate and 3 direct grant schemes) that could be classified as support to biofuels. The following figure shows the breakdown by Member State.

In terms of approved measures, the Commission approved around 18 new or amended support measures – thereof 2 direct grant schemes, 15 tax or excise duty rebate schemes and one individual measure - between January 2008 and July 2013.

[163] SWD (2012) 343 final, Impact Assessment accompanying the document Proposal for a directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources, p. 69 states that under the preferred option "the targets for renewable energy of the Renewable Energy Directive remain achievable".

[164] For further information on the quantification of this impact, cf. COM(2013)175 final.

[165] Communication on a policy framework for climate and energy in the period from 2020 to 2030 - COM(2014) 15 final.

[166] The Commission intends to issue a "Notice on the notion of state aid". The public consultation is available on http://ec.europa.eu/competition/consultations/2014_state_aid_notion/index_en.html

In line with their higher market share, to date almost all decisions adopted by the Commission and aid granted by Member States was directed to supporting conventional biofuels. The support to advanced biofuels through State aid measures under EAG has been negligible, due to their limited development.

As all of the above-mentioned problems are either already addressed by other policy proposals, not in the realm of State Aid and/or could not be substantiated, they have not further been investigated.