

# Competition *policy brief*

Occasional discussion papers by the Competition Directorate-General of the European Commission

## Improving State Aid for Energy and the Environment

### In a nutshell

The EU environmental and energy aid guidelines have been fundamentally revised and extended. They now offer new rules for aid to renewable energy sources. For the very first time they also clearly outline the conditions for support to infrastructure investments and projects ensuring generation capacity. These changes minimise distortions to the market and help Member States achieve common goals such as security of supply and progress in the fight against climate change.

In 2008 the Commission adopted the previous Environmental Aid Guidelines<sup>1</sup> for State aid granted by Member States and regional and local authorities. These guidelines established compatibility criteria that ensured a high level of environmental protection. Much of the aid granted under the 2008 Guidelines has served to promote renewable energy sources (RES). The Guidelines also supported subsidies for investments in energy-efficient production, such as combined heat and power (CHP) and energy efficiency measures, and energy tax reductions for energy-intensive users. Out of a total of €10 billion granted in environmental protection measures between 2008 and 2012, Member States granted €8 billion to RES and CHP. Some of these measures did not require notification to the Commission, as they benefited from an exemption under the 2008 General Block Exemption Regulation (GBER).

The review of the Guidelines started in 2012 and included three public consultations and numerous contacts with Member States and stakeholders. For the first time, the Commission decided to adopt Guidelines that would not only cover RES and energy efficiency, but would be targeted more generally to aid measures in the energy field. The new Guidelines on State aid for Environmental protection and Energy (Guidelines) were adopted in principle in April 2014 and have been applicable since 1 July 2014<sup>2</sup>.

Table 1. Aid categories in the 2008 Guidelines in Environmental aid (EAG), the 2014 Guidelines on Environmental and Energy aid (EEAG) and the 2014 General Block Exemption Regulation (GBER)

Type of measure	2008 EAG	2014 EEAG	2014 GBER
Cogeneration & district heating	✓	✓ & cooling and networks	✓
Waste management	✓	✓ & resource efficiency	✓ & reutilisation
Energy efficiency	✓	✓	✓ & in buildings
Reductions or exemptions from environmental taxes	✓	✓	✓
Environmental studies	✓	✓	✓
Early adaptation to/going beyond EU standards, or for higher environmental protection in their absence (incl. new transport vehicles).	✓	✓	✓
Remediation of contaminated sites	✓	✓	✓
Promotion of renewable energy sources	✓	✓	✓ Now includes operating aid
Tradable permit schemes	✓	✓	✗
Carbon capture and storage	✓	✓	✗
Relocation of undertakings	✓	✓	✗
Reductions in funding support for electricity from renewable sources	✗	✓	✗
Energy infrastructure	✗	✓	✓
Generation adequacy	✗	✓	✗

<sup>1</sup> [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52008XC0401\(03\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52008XC0401(03))

<sup>2</sup> Official Journal C 200 of 28.6.2014

[http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0628\(01\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0628(01))

The revised GBER also entered into force on 1 July 2014. Together, they are part of the Commission's State Aid Modernisation (SAM) package, a broad overhaul of State aid rules and procedures. These reforms help Member States design aid measures that minimise distortions of the EU internal market and contribute to common goals, such as security of supply and progress in the fight against climate change.

Like the Guidelines, the GBER provisions on exempted aid for environmental protection have been extended to cover energy issues. The revised GBER has been aligned with the Guidelines and now includes measures such as aid for energy infrastructure, energy efficiency projects in buildings, operating aid to the production of energy from renewable energy sources, decontamination of polluted sites, district heating and cooling, waste recycling and reutilisation. (See Table 1)

This *policy brief* focuses on the measures that received the most attention during the review process: aid for promotion of electricity from renewable energy sources, aid to infrastructure and generation adequacy, and modifications in funding support for electricity from renewable energy sources.

### Modernising support to renewables

State aid rules for the generation of renewable energy have helped to achieve EU environmental targets. According to current EU targets, by 2020 one-fifth (20 per cent) of all energy consumption should come from renewable sources. In 2012, the EU on average already consumed 14.1% of its energy from renewable sources<sup>3</sup>. Based on current developments and policies, the EU average of renewables in energy consumption could reach 20.9% by 2020 (see Figure 1).

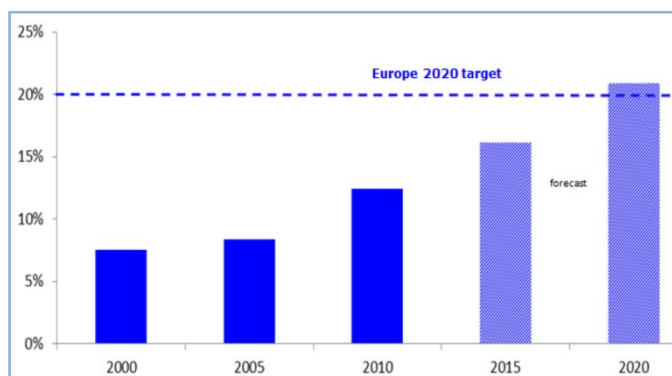


Figure 1: EU average of renewable energy in gross final energy consumption, 2000-2020<sup>4</sup>

That's the good news. But there are also new challenges. Renewables have become the victim of their own success. The rapid increase in renewable energy generators had also caused distortions of the market. Four issues in particular needed attention.

**1) Support schemes are not cost-efficient:** To support renewable energy sources, Member States mainly use administratively established feed-in tariffs (FiTs) or feed-in premiums. This shelters producers of renewable electricity from market signals and changing electricity prices, which gives them no economic incentive to adapt project features (such as location, installation design, or actual operation) to supply and demand.

**2) Market fragmentation:** There are large differences between support instruments and support levels across Member States and technologies.

Figure 2 below shows that many Member States spend large amounts on support schemes for producing electricity from renewable energy sources (RES-e), both in absolute terms as well as per MWh.

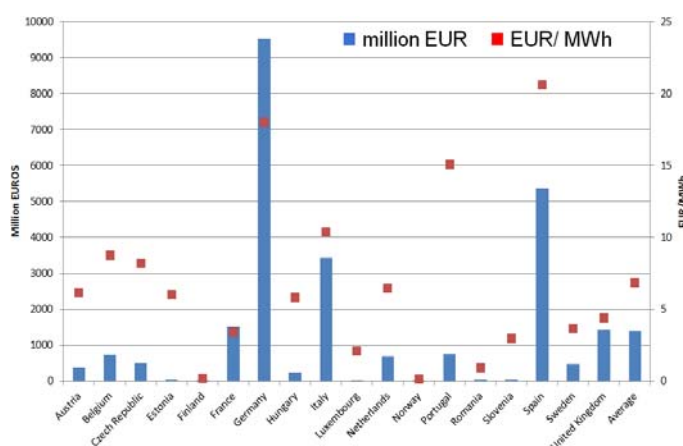


Figure 2. RES-e support in Europe in € million and per unit of energy consumed. Source: CEER, June 2013

Different levels of support are not necessarily problematic, but large differences could potentially encourage "subsidy shopping", when companies choose investment locations based on the aid they will receive rather than other criteria, such as infrastructure. One explanation for large differences between Member States could simply be that it is difficult to set tariffs administratively at the right level. Member States tend to subsidise national energy production exclusively, which reinforces fragmentation of the energy market.

In June 2014, the Council emphasised the need to move progressively towards cost-effective and market-based support mechanisms for renewables. In order to limit energy costs borne by end users, the Council also called for greater convergence between national support schemes beyond 2020<sup>5</sup>.

**3) Fewer incentives to invest in generation capacity:** Renewable energy sources generally have lower operating costs than conventional electricity generation, which needs fuel to operate.

<sup>3</sup> Source: Eurostat

<sup>4</sup> Sources: European Commission, study commissioned by the European Commission. Graph available in annex 2 of the Communication "Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth" COM(2014)130.

<sup>5</sup> Transport, telecommunications and energy Council meeting in Luxembourg, 13 June 2014. Conclusions on "Energy prices and costs, protection of vulnerable consumers and competitiveness" [http://consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/trans/143198.pdf](http://consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/trans/143198.pdf).

The considerable expansion of renewables has depressed wholesale electricity prices. This has had a negative impact on investment in conventional generation capacity, in particular gas-fuelled plants. At a time when existing plants are ageing, and when substantial investment is needed to ensure enough generation, this provokes concerns about generation adequacy.

**4) Maturity of some technologies:** Some renewable energy sources have reached maturity and the costs of those technologies are decreasing. So they should be increasingly exposed to market signals, and aid amounts should respond to falling production costs.

### How the new rules address the problems

To respond to these challenges, support schemes needed to be reformed and made more responsive to price signals. The revised Guidelines mitigate potential distortions to competition caused by support for renewable energy sources. At the same time, they help Member States to continue to meet their renewable energy targets. Moving renewable energy sources away from subsidies and integrating them into the market will likely reduce market distortions, improve the functioning of the internal market and help contain electricity costs in Europe.

As a first step, the Guidelines abolish the guaranteed purchase of renewable energy at fixed prices: **from 2016**, producers of renewable energy will have to sell their production on the market. They may still receive aid, but in the form of a premium in addition to the market price.

In a second step, the new Guidelines promote the gradual introduction of competitive bidding as a means of granting aid to renewables. Competitive bidding will become compulsory in 2017, but will be preceded by a two-year pilot phase, which will allow Member States to adapt the system to their national circumstances (see Table 2 for details).

To reduce fragmentation of the internal market, competitive bidding processes should in principle be opened to bidders from other Member States. This does not apply when foreign companies cannot physically access the market, or when there are no cooperation mechanisms in place. These are agreements that allow Member States to take renewable electricity produced in another Member State into account for achieving their own renewable energy target for 2020.

According to the revised GBER, competitive bidding is the only permitted means of granting operating aid for generation of electricity from renewable energy sources. In those cases, the notification threshold is set at €150 million per year, taking into account the combined budget for all schemes.

### A lighter load for energy-intensive users

To fund renewable energy, governments levy charges on energy suppliers who, in turn, pass on the costs to energy consumers, both home and industrial users. These Renewable Energy Source charges (RES charges) are placing an increasing burden on energy-intensive sectors. This makes it difficult to compete with industries from outside the EU, where concerns for the environment are not always as high.

Table 2: Summary of provisions on State aid for renewable energy sources (RES) in the EEA

#### 1. INVESTMENT AID

- Notification threshold for individual measures under a scheme: €15 million per company
- Assessment based on general compatibility criteria and common assessment principles

#### 2. OPERATING AID TO RES electricity

- Notification threshold for individual measures under a scheme: generation capacity per site above 250 MW
- Duration of approval for scheme: 10 years
- Schemes preferably open to EEA / Energy Community<sup>6</sup>

#### a) Integration in the market:

From 2016: (for all new aid schemes and measures)  
Renewable electricity installations:

- sell the electricity they produce on the market, receiving a premium in addition to the market price.
- must compensate for short-term deviations from their scheduled generation plan
- Receive no incentives to generate when prices are negative

#### b) Introduction of competitive bidding

Transitional phase 2015-2016

- Aid granted through competitive processes for at least 5% of the planned RES capacity

From 2017

- Aid granted through competitive processes for 100% of the planned RES capacity, except if a Member State demonstrates that the result would be suboptimal (e.g. limited number of eligible projects/sites, risk of overcompensation or of underbidding)
- Process open to all generators and technologies. (Reasons for exceptions include: grid stability, long-term potential of a new technology, need to achieve diversification of sources)

#### c) Special regime for small installations

- Feed-in tariffs or equivalent forms of support are allowed for installations below 3MW or 3 generation units (wind power) or 500kW (other sources, like solar or biomass)
- No competitive bidding process required for installations below 6MW or 6 generation Units (wind) or 1MW (others)

#### 3. OPERATING AID TO RES OTHER THAN ELECTRICITY

Aid per unit of energy should not exceed the levelised costs of producing energy (LCOE<sup>7</sup>) minus the market price of the form of energy concerned.

The LCOE may include a normal return on capital. Investment aid is deducted.

<sup>6</sup> The Energy Community is an international organisation established between the EU and a number of non-EU countries to extend the EU internal energy market to Southeast Europe and the Black Sea region. <http://www.energy-community.org>

<sup>7</sup> The LCOE is a measure of the cost of electricity-producing technologies which allows making cost comparisons across different technologies. It is calculated by accounting for all of a plant's expected lifetime costs, which are then divided by its expected power output (kWh) during its lifetime.

To meet this challenge, several Member States are reducing RES charges for electricity-intensive consumers. The main concern from the perspective of State aid control is that firms benefiting from such reductions are obtaining an unfair advantage, which improves their competitive position compared to other firms and potentially distorts trade *between* Member States. Schemes could also introduce distortions *within* Member States, if companies in specific sectors are treated differently (e.g. large firms receive support, while smaller firms do not).

The new Guidelines address these competition problems by allowing State aid in the form of reductions in RES charges to certain EU-wide sectors. The sectors have been selected on the basis of two combined criteria:

- 1) High electro-intensity<sup>8</sup> of the sector at EU level (the extent to which costs are affected by an increase in electricity prices)
- 2) High trade intensity<sup>9</sup> of the sector at EU level with countries outside the EU

To take differences between firms into account, electro-intensive companies within certain additional sectors can also be eligible for reductions in RES charges (see Table 3).

Because every company is expected to contribute something to environmental goals, the maximum possible reduction in charges is 80%.

### Expanding and modernising energy infrastructure

For the first time, both the reformed Guidelines and the GBER now include provisions for State aid to energy infrastructure. In the past, State aid for traditional infrastructure measures (such as interconnections, gas storage, transmission and distribution networks) had been assessed on a case-by-case basis following the general principles established by the Treaty.

This made it burdensome to gain State aid approval for infrastructure investments. The lack of clear regulation also hampered support for new technological developments that could be highly beneficial to the internal energy market and help the integration of energy networks, for instance technology that helps consumers control their own energy use (demand-side response). Examples are smart meters and appliances, and the intelligent distribution network infrastructure necessary to support them. The new Guidelines now provide clear provisions for aid to investments of this type.

Normally, investments in energy infrastructure are paid for by energy users through tariffs included in their electricity and gas bills. To calculate the viability of investments, proceeds from possible future users are often also taken into account. At times, viable projects do not take materialize because investors fear that future users will not be willing to pay the price, meaning they would not have any return on investment. In cases such as these the new Guidelines generally presume the existence of

<sup>8</sup> The sector's average electricity costs accounting as a percentage (%) of the sector's gross value added.  
<sup>9</sup> Total trade of the sector with third countries relative to the size of the EU market.

market failures and consider it justified to use State aid to finance those investments. Examples are "projects of common interest"<sup>10</sup> and projects in assisted areas.

Table 3: Eligibility of sectors for exemptions from RES financing

**Eligible beneficiaries:**

- 68 sectors with the following combinations of average trade and electricity intensities (list available in annex 3 of the Guidelines)

<b>Trade intensity above</b>	<b>Electro-intensity above</b>
10%	10%
4%	20%
80%	7%
And other economically similar sectors producing substitute products	

- Member States can also aid companies with electro-intensity above 20% and trade intensity above 4% (indicative list in annex 5 of the Guidelines)

**Conditions:**

- Only those industries that really need it: Member States to demonstrate that higher electricity prices faced by beneficiaries result only from support to renewable energy sources (RES)
- Partial compensation only: beneficiaries pay at least 15% of the costs towards RES support. Member States can decide to further reduce the overall contribution to the RES support for eligible undertakings to:
  - 4% of the gross added value of the company
  - 0.5% of the gross added value if the electro-intensity of the company is above 20%

**Transitional rules for existing schemes:**

- Member States should prepare and notify an adjustment plan by 1 July 2016 so that the scheme is in line with the conditions of the Guidelines by 1 January 2019.
- If aid has been granted to undertakings that are not eligible according to the new Guidelines, the aid could be declared compatible if there is an adjustment plan and if the undertakings will pay a minimum contribution of 20% of the total costs by 2019.

The Guidelines do impose some conditions for aid to infrastructure. First, in order for all users to benefit from the new infrastructure, aided projects must provide open access to third parties. They should also be subject to tariff regulation. Second, aid to infrastructure may not have any distortive effects. Third, the standard for examining aid should be the same for unregulated and regulated sectors.

<sup>10</sup> Energy infrastructure projects of common interest are identified pursuant Regulation (EU) No 347/2013 on Guidelines for trans-European energy infrastructure. See [http://ec.europa.eu/energy/infrastructure/pci/pci\\_en.htm](http://ec.europa.eu/energy/infrastructure/pci/pci_en.htm)

While investments in regulated sectors have to conform to extensive criteria from the outset, investments in unregulated sectors do not, which is why they will be subject to more rigorous State aid scrutiny. This will also be the case for aid to investments in electricity and gas storage and oil infrastructure, which cannot benefit from an exemption under the GBER<sup>11</sup>.

## Ensuring sufficient generation capacity

The new Guidelines now for the very first time permit aid for investments in security of electricity supply and generation adequacy. Member States have a duty to ensure security of energy supply. In several EU Member States, generation capacity may not be sufficient to meet future energy demand, and the required investments to ensure security of supply may not materialise. Market and regulatory failures may lead to a lack of investment in generation capacity. For instance, if governments cap wholesale prices, this can lead to a loss of income for power generating companies, which then have less funds at their disposal for investments.

Capacity mechanisms can solve this problem. In a capacity mechanism the state compensates electricity generators for building new power plants or demand-side operators for reducing or shifting power consumption. This creates reserves and ensures system stability and generation adequacy.

In a liberalised market, possible distortive measures should be considered very carefully. If the market cannot guarantee generation adequacy and security, Member States, before they decide on constructing mechanisms, should first of all consider whether there are alternative measures to building new (potentially polluting) generation capacity. Investments in interconnections, storage and demand-side measures could also possibly alleviate the concerns. If capacity mechanisms are found to be necessary, their potentially harmful effects should be mitigated as much as possible. Capacity should be tendered in an open, transparent and technology-neutral manner. Cross-border mechanisms are usually more beneficial to the internal market than nationally oriented measures.

## Other measures in the Guidelines

Thanks to the review of the Guidelines, the granting of aid for **energy efficiency** has been simplified and extended in scope. Specifically, the calculation of eligible costs can now be done in a much simpler way. Aid intensities have been adapted to these simplified cost calculations.

The revised rules also allow for aid to **waste management** as long as the waste hierarchy<sup>12</sup> is respected. Waste recycling and re-use rank highly in the waste hierarchy, and will be further encouraged by allowing aid under GBER.

<sup>11</sup> For instance, certain infrastructure projects such as gas and electricity storage (in particular pumped hydro storage) can be commercially viable, can operate on a competitive market and in these circumstances would normally not need State aid.

<sup>12</sup> The priority order in waste prevention and management legislation and policy: prevention, preparing for re-use, recycling, other recovery (e.g. energy recovery) and disposal.

Table 4: Main principles for State aid to generation adequacy measures

Member States should first analyse and quantify the generation adequacy problem, taking into account potential alternative solutions, such as response to consumer demand, interconnection capacity and storage solutions.

Aid mechanisms should:

- Reward only the pure availability of generation capacity, not actual generation
- Be open to new and existing generators, and to operators using substitutable technologies
- Allow for sufficient lead time to plan new investments
- Allow capacity providers from other Member States to operate on the market

**Exemptions from environmental taxes.** These provisions have remained largely unchanged from the 2008 Guidelines. Exemptions from harmonised energy taxes that respect EU minimum tax rates are covered by the GBER and do not have to be notified. The Guidelines permit exemptions from non-harmonised direct environmental taxes if they would lead to heavy losses when the costs are passed on to consumers. Still, the companies must pay at least 20% of the tax, although this can be cancelled by environmental agreements that compensate for the environmental effects.

## Next steps

The Guidelines and the GBER were applicable from 1 July 2014. To maintain legal and investment certainty, the Guidelines will not apply to existing renewable energy source support schemes, unless the authorities in Member States decide to change the scheme. In this case the Member State will need to notify it to the Commission, who will assess it under the new Guidelines. The new Guidelines allow existing reductions to energy-intensive users – which were not covered by the 2008 Guidelines – to be adjusted over time. They should fully comply with the requirements of the EEAG by January 2019 at the latest.

As for the GBER, it will be applied retroactively to all individual aid measures granted before its entry into force, providing the aid is in line with its provisions.

## More information

- Text of the 2008 and 2014 Guidelines, press materials, review process and impact assessment report: [http://ec.europa.eu/competition/sectors/energy/legislation\\_en.html](http://ec.europa.eu/competition/sectors/energy/legislation_en.html)
- General Block Exemption Regulation: [http://ec.europa.eu/competition/state\\_aid/tion/block.html](http://ec.europa.eu/competition/state_aid/tion/block.html)