

# Electricity

## Green Public procurement (GPP) Product Sheet



This Product Sheet forms part of the European Commission's GPP Training Toolkit, which can be downloaded from the GPP website [http://ec.europa.eu/environment/gpp/toolkit\\_en.htm](http://ec.europa.eu/environment/gpp/toolkit_en.htm). Similar Product Sheets have been established for 10 other product and service groups. More information on the reasons for selecting these criteria can be found in the [detailed background report](#) on the website.

For each product/service group two sets of criteria are presented:

- **Core GPP criteria** address the most significant environmental impacts, and are designed to be used with minimum additional verification effort or cost increases
- **Comprehensive GPP criteria** are intended for use by authorities who seek to purchase the best environmental products available on the market, and may require additional administrative effort or imply a certain cost increase as compared to other products fulfilling the same function

### 1 Scope

These recommendations cover the purchase of electricity.

The most direct way to reduce the environmental impact of electricity consumption is to reduce your demand – through energy efficiency improvements in public buildings and the purchase of more energy efficient energy using products and through measures aimed at consumer behaviour. Both issues are covered by other product groups within Module 3 of this toolkit ([construction](#), [office IT equipment](#)).

This product sheet includes an implementation note on energy services aimed at improving the energy efficiency of a certain building, which are often tendered in parallel or in combination with the procurement procedure for the supply of electricity.

For the **Core** criteria the specifications focus on the proportion of electricity supplied from renewable energy sources (RES-E) (50% recommended). The award criteria aim to encourage an even higher percentage of RES-E beyond the minimum included in the specifications.

For the **Comprehensive** criteria, the specifications recommend 100% RES-E.

## 2 Key environmental impacts

Impact	GPP Approach
CO <sub>2</sub> and other emissions caused by the generation of electricity from fossil fuels	<ul style="list-style-type: none"> <li>• Increase the share of electricity from renewable energy sources (RES-E)<sup>1</sup></li> <li>• Increase the share of electricity from high efficiency cogeneration</li> </ul> <p><sup>1</sup> “Renewable energy sources” shall mean energy from renewable non-fossil sources (wind, solar, geothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases)</p>
Impact on human health, biodiversity and water resources due to the extraction of materials, i.e. mining (coal) and drilling (oil), and waste treatment	
Exploitation of finite fossil fuel resources	

## 3 Electricity – GPP criteria

### 3.1 Electricity - Core GPP criteria

#### Subject matter

Purchase of 50% electricity from renewable energy sources (RES-E) and/or high efficiency cogeneration.

#### Specifications

1. 50% of supplied electricity must come from renewable energy sources (RES-E) and/or high efficiency cogeneration as defined by Directive 2001/77/EC<sup>2</sup> and Directive 2004/8/EC respectively.

##### Verification:

Guarantee of Origin schemes or equivalent proof. All EU countries are legally obliged, under Directives 2001/77/EC and 2004/8/EC, to set up Guarantee of Origin schemes for electricity from renewable energy sources and for the use of high efficiency cogeneration in its production. These provide a good legal basis for verification. An alternative would be for the supplier to provide independent proof of the fact that a corresponding quantity of electricity has been generated from so-defined renewable sources or produced by means of high efficiency cogeneration (e.g. a tradable certificate from an independent issuing body such as RECS (Renewable Energy Certificates System: [www.recs.org](http://www.recs.org)), which has been approved by government.

#### Award criteria

Additional points will be awarded for:

##### **Additional RES-E and/or high efficiency cogeneration**

1. The tenderer should indicate the proportion of electricity to be supplied from renewable energy sources. Additional points will be awarded in proportion to the electricity to be supplied from renewable energy sources above the minimum requirement in the specification.  
**Verification:**  
As above.
2. Additional electricity from high efficiency CHP: The tenderer should indicate the proportion of electricity to be supplied from high efficiency cogeneration. Additional points will be awarded in proportion to the electricity to be supplied from high efficiency cogeneration above the minimum requirement in the specification.
3. If electricity is supplied from high efficiency cogeneration based on renewable energy sources double counting of additional points for both aspects is allowed.

#### Contract performance clauses

At the end of each year of the contract the contractor must disclose the origin of the electricity supplied to the contracting authority to demonstrate that at least 50% came from renewable energy sources and/or high efficiency cogeneration. Guarantees of Origin (GoO) or equivalent proof must be provided. This is not required from certified suppliers of 100% green electricity (i.e. carrying a Type-1 ecolabel which uses a definition of RES-E at least as strict as that of Directive 2001/77/EC).

<sup>2</sup> 'Renewable energy sources' shall mean renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases)

## Electricity - Comprehensive GPP criteria

### Subject matter

Purchase of 100% electricity from renewable energy sources (RES-E).

### Specifications

1. 100% of supplied electricity must come from renewable energy sources (RES-E) as defined by Directive 2001/77/EC.

**Verification:**

Guarantee of Origin schemes or equivalent proof. All EU countries are legally obliged to set up Guarantee of Origin schemes for electricity from renewable energy sources and for the use of high efficiency cogeneration in its production. These provide a good legal basis for verification. An alternative would be for the supplier to provide independent proof of the fact that a corresponding quantity of electricity has been generated from so-defined renewable sources (e.g. a tradable certificate from an independent issuing body such as RECS (Renewable Energy Certificates System: [www.recs.org](http://www.recs.org)), which has been approved by government.

### Contract performance clauses

At the end of each year of the contract, the contractor must disclose the origin of the electricity supplied to the contracting authority to demonstrate that 100% came from renewable energy sources. Guarantees of Origin (GoO) or equivalent proof must be provided. This is not required from certified suppliers of 100% green electricity (i.e. carrying a Type-1 ecolabel which uses a definition of RES-E at least as strict as that of Directive 2001/77/EC).

## Implementation notes

- Definition of RES-E:** Directive 2001/77/EC (the RES-E Directive) defines RES-E as: 'electricity produced by plants using only renewable energy sources ... (energy from renewable non fossil sources: wind, solar, geothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases), ... as well as the proportion of electricity produced from renewable energy sources in hybrid plants also using conventional energy sources and including renewable electricity used for filling storage systems, and excluding electricity produced as a result of storage systems.'

Biomass is further defined as: 'the biodegradable fraction of products, waste and residues from biological origin 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.'
- Verification - Guarantee of Origin schemes or equivalent proof:** All EU countries are legally obliged to set up Guarantee of Origin schemes and to have reliable systems allowing energy suppliers to disclose to consumers the mix of energy sources, such a renewable energy, contained in the electricity (required under Directive 2003/54/EC)
- Verification - Type-1 ecolabels:** A number of green electricity ecolabels exist which can be used to demonstrate compliance with the criteria. However the contracting authority must first check that the definition of RES-E used by the ecolabel is accepted by the national government for electricity mix disclosure purposes and is at least as strict as that given in the RES-E Directive (2001/77/EC).
- Award criteria:** Contracting authorities will have to indicate in the contract notice and tender documents how many additional points will be awarded for each award criterion. Environmental award criteria should, altogether, account for at least 10 to 15 % of the total points available. Where the award criterion is formulated in terms of "better performance as compared to the minimum requirements included in the technical specifications", points will be awarded in proportion to the improved performance.
- Encouraging small suppliers:** Many green electricity suppliers and generators are small operators, and may not be able to meet the demands of large consumers. To allow such suppliers to participate in the bidding process, it may be appropriate to divide the tender into smaller parts, or "lots" on the condition that the tender is published as one contract. A good example of this is provided by the Austrian Life Ministry<sup>4</sup>.
- Considering energy efficiency measures:** When purchasing electricity, contracting authorities may also consider awarding a contract for energy efficiency services, and seek specialist advice on energy efficiency improvements. A number of energy efficiency measures can easily be made with short payback periods. A tender for energy efficiency services could be published together with or in parallel to that for electricity. For information on the use of energy performance contracting for public buildings please visit: [http://www.eurocontract.net/front\\_content.php?idcat=1](http://www.eurocontract.net/front_content.php?idcat=1) or <http://www.oegut.at/en/themen/erweitertes-europa/conviba/contracting.php>.

<sup>4</sup> See case studies in CD-ROM attached to 'The Procura+ Manual – A Guide to Cost-Effective Sustainable Public Procurement' 2nd edition 2007. Also available at: <http://www.procuraplus.org/index.php?id=4595>

## 4 Cost considerations

Price differences between conventional and green electricity depend on the status of liberalisation, the national support scheme and the existence of green electricity suppliers.

Green electricity is often more expensive, although price differences are narrowing substantially, and there are cases where green electricity is even available at a cheaper rate.

Increased market liberalisation, upgraded RES generation technologies, higher fossil fuel prices, European RES-E targets and promotion of high efficiency cogeneration – all linked to the current climate debate - have the potential of making green electricity ever more competitively priced. In general, according to the latest statistics in the EU-27, from January 2005 to January 2007 electricity prices for both households and industrial consumers increased significantly (by 14% and 22% respectively).

A Commission study on the Costs & Benefits of GPP in 2007<sup>5</sup> examined the cost implications of purchasing green electricity versus conventional electricity. In general, according to these results, green electricity has proved to be a product group which is available for public procurement on a competitive basis.

## 5 Relevant EU legislation and information sources

The adoption of the single market Directive (Directive 2003/54/EC<sup>6</sup>) and the cross-border e-exchange Regulation (Regulation 1228/2003<sup>7</sup>) have considerably changed the European electricity market, making it more competitive and lowering administrative and technical barriers to trade. Still, a number of countries have not fully liberalised their markets, and in others, despite formal liberalisation, current practices and market conditions prevent real competition.

The driving force behind green electricity within the EU is Directive 2001/77/EC on the promotion of electricity from renewable energy sources (commonly known as the “RES-E Directive”<sup>8</sup>) which urges Member States to meet national targets on renewable energy by 2010. It includes a definition of renewable electricity and introduces the concept of Guarantees of Origin to prove compliance. This Directive will soon be replaced by a new Directive (see current proposal for a Directive on the promotion of the use of energy from renewable sources COM(2008)19 of 23 January 2008)

<sup>5</sup> Study on costs/benefits of Green public procurement in Europe, Öko-Institut & ICLEI 2007, available at: [http://ec.europa.eu/environment/gpp/index\\_en.htm](http://ec.europa.eu/environment/gpp/index_en.htm)

<sup>6</sup> Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC - Statements made with regard to decommissioning and waste management activities

<sup>7</sup> Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity

<sup>8</sup> Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market

Many Member States apply a “feed-in tariff”<sup>9</sup> approach which guarantees a set price for any RES-generated electricity (up to a certain amount from any one power station). A “quota system” obliges electricity suppliers to ensure a certain percentage of the electricity they sell comes from RES.

Table 1: National support schemes for renewable energy in EU (year of introduction)<sup>10</sup>

Feed-in tariffs	Quota system	Tendering scheme	Tax incentives
Austria (2003), Cyprus (2003), Czech Republic (2005), Denmark, Estonia (2003), Finland (1996) <sup>11</sup> , France (1998), Germany (1991), Greece (1994), Hungary (2003), Latvia (1996) <sup>12</sup> , Lithuania (2002), Luxembourg (1994), Netherlands (2003), Portugal (2001), Slovakia (2003), Slovenia (2000), Spain (1999), Ireland (2005)	Belgium (2002), Italy (1999), Poland (2001), Sweden (2003), United Kingdom (2002)	France (1995) <sup>13</sup>	Malta, Finland

- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market:  
[http://eur-lex.europa.eu/LexUriServ/site/en/oj/2001/l\\_283/l\\_28320011027en00330040.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2001/l_283/l_28320011027en00330040.pdf)
- Proposal for a Directive on the promotion of use of energy from renewable energy sources (COM(2008)9 of 23 January 2008) ([http://ec.europa.eu/energy/strategies/2008/2008\\_01\\_climate\\_change\\_en.htm](http://ec.europa.eu/energy/strategies/2008/2008_01_climate_change_en.htm))
- Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC - Statements made with regard to decommissioning and waste management activities:  
[http://eur-lex.europa.eu/LexUriServ/site/en/oj/2003/l\\_176/l\\_17620030715en00370055.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2003/l_176/l_17620030715en00370055.pdf)
- Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:052:0050:0060:EN:PDF>

<sup>9</sup> FiTs consist of a legally determined minimum tariff per kWh for the green electricity producer and an obligation for energy utilities to purchase the output. The price (tariff) depends on the technologies used and is usually guaranteed for a long period.

<sup>10</sup> I.e. date when RES-E support mechanism came into force.

<sup>11</sup> Electricity Act 31 May 1996 was replaced by the Electricity Reform Agreement of 1999 and later by adaptations in 2001. The establishment of a Green Certificate market is planned.

<sup>12</sup> The so-called double tariff system has been phased out by a less favourable scheme that started in 2003.

<sup>13</sup> For wind farms larger than 12 MW.

- Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity: <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/2003/R/02003R1228-20061201-en.pdf>
- Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC: [http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/L\\_052/L\\_05220040221en00500060.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/L_052/L_05220040221en00500060.pdf)
- Study on costs/benefits of Green public procurement in Europe, Öko-Institut & ICLEI 2007: [http://ec.europa.eu/environment/gpp/index\\_en.htm](http://ec.europa.eu/environment/gpp/index_en.htm)
- Certification systems:
  - the European Energy Certificate System (EECS), which supports both mandatory guarantees of origin and voluntary RECS certificates: [www.aib-net.org](http://www.aib-net.org)
  - The Renewable Energy Certificate System (RECS): [www.recs.org](http://www.recs.org)

### Labelling schemes

- The Eugene Standard: [www.eugenestandard.org](http://www.eugenestandard.org)
- ok-Power (Germany): [www.energie-vision.de](http://www.energie-vision.de)
- Gruener Strom (Germany): [www.gruenerstromlabel.de](http://www.gruenerstromlabel.de)
- Umweltzeichen (Austria): [www.oekostrom.at](http://www.oekostrom.at)
- The Technical Inspection Association (TÜV, Germany): [www.de.tuv.com](http://www.de.tuv.com)
- Landesgewerbeanstalt Bayern (LGA, Germany): [www.lga.de/](http://www.lga.de/)
- 100% green energy (Italy): [www.centopercentoverde.org](http://www.centopercentoverde.org)
- The Ekoenergia label, also called "Norppa suosittelee ekoenergia" (Norppa recommends eco-energy, Finland): [www.ekoenergia.info](http://www.ekoenergia.info)
- The Milieukeur label (Netherlands): <http://www.milieukeur.nl>
- Bra Miljöval ("Good Green Buy" or "Good Environmental Choice", Sweden): [www.snf.se/bmv/index.cfm](http://www.snf.se/bmv/index.cfm)

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<sup>3</sup> See case studies in CD-ROM attached to 'The Procura+ Manual – A Guide to Cost-Effective Sustainable Public Procurement' 2nd edition 2007. Also available at: <http://www.procuraplus.org/index.php?id=4595>