

## Green electricity

### Electricity with additionality in Lorient



<b>Purchasing body:</b>	City of Lorient
<b>Contract:</b>	1 year framework contract for electricity supply Awarded: December 2016
<b>Savings:</b>	<ul style="list-style-type: none"> <li>• 51 tons of CO<sub>2</sub> emissions saved per year</li> <li>• Primary Energy saving of 1.3 GWh/year</li> <li>• 0.914 GWh/year new RES generating capacity</li> </ul>

#### SUMMARY

- Purchase of green electricity with additionality
- Suppliers required to demonstrate the investments they will make in new RES generating capacity
- Green electricity limited to wind, solar, biomass (excluding waste) and small (<20MW) hydropower

## Procurement Approach

The City of Lorient has targeted the procurement of renewable electricity with high environmental value (HVE), as part of its certification under the European Energy Award (EEA; in France: *cit'ergie*).<sup>1</sup>

The EEA encourages cities to go beyond the Guarantees of Origin (GO) system. For certification it requires that the electricity consumed should come from sources that would not have been deployed under a "business as usual" scenario, which means that guarantees of origin, produced by units already amortised (depreciated), are not recognised. The aim is to promote the development of new generating capacity.

In addition, it was important that the electricity purchase respected the recommendations of the Breton Electricity Pact<sup>2</sup>, which aims to a) manage energy demand, b) substantially increase renewable electricity generation, and c) secure the supply network.

The MAPA tender (tender with adapted procedure) was published in August 2016 and covered 17 delivery points, with an indicative consumption of 914 MWh/year. This represents about 7% of Lorient's total estimated electricity consumption of 13 GWh/year.

Although the procedure was carried out by the city alone, a presentation of the technical specifications was organized for other procuring entities in the region, as well as to the members of a purchasing group in which the City of Lorient participates.

The contract is retendered each year.

### PROCUREMENT INNOVATION

Applying the concept of "additionality" in electricity procurement: going beyond the Guarantee of Origin system to ensure the purchase leads to new RES capacity being built.

## Tender specifications and Verification

### TECHNICAL SPECIFICATION

- 100% green electricity content must be guaranteed
- The following sources of electricity will be considered green in this context:
  - Onshore and offshore wind
  - Photovoltaic
  - Hydroelectric power from sub-20MW installations,

<sup>1</sup> [www.european-energy-award.org](http://www.european-energy-award.org)

<sup>2</sup> [www.plan-eco-energie-bretagne.fr/jcms/c\\_7683/pacte-electrique-breton](http://www.plan-eco-energie-bretagne.fr/jcms/c_7683/pacte-electrique-breton)

- Biomass (excluding incineration of household waste)

#### AWARD CRITERIA

- Additionality: 40%
- Respect for Breton Electricity Pact: 25%
- Price: 35%

#### Sub-criteria:

- **Additionality:** demonstration that provider will invest in new renewable generating capacity, putting new electricity into the grid which would not have been developed under a “business as usual” scenario. The following factors will be assessed for this criterion:
  - Guarantee of that all existing production sites <20MW
  - Indication of the planned RES production sites together with start-up dates
  - % of earnings reinvested in new RES generation capacity and energy management services
  - Guarantee that all electricity consumed under the contract will be directly produced by the supplier, and not purchased on the market
  - Demonstration of active participation in exchange networks which promote citizen investment in renewable energy (such as the *Taranis* network). )
- **Compliance with the Breton Electricity Pact.** The following factors will be assessed for this criterion:
  - Energy management awareness-raising actions proposed, for example: actions to raise awareness among school children about energy and energy networks, the link between production and consumption, raising awareness of staff about energy consumption, etc.)
  - Development of renewable energy: proposals to support the setting up of photovoltaic production sites on one or more of a set of sites listed in the tender
  - Securing the network: proposals aimed at promoting the objective of achieving a production/consumption balance in Brittany
- Price: 35%

#### VERIFICATION

An explanatory note must be provided with the tender, indicating the approach of the bidder to meet the additionality criteria for this electricity.

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Electricity meeting the requirements of labels "Grüner Strom Label", "OK Power", "TÜV SÜD EE01" or equivalent shall be considered to meet the additionality criteria, provided it is derived from the above-mentioned sources.

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## Results

### Environmental impacts

Switching almost 1GWh of electricity consumption (of a total 13 GWh) to green electricity will achieve savings of **51.18 tCO<sub>2</sub>** per year, representing a 5.4% reduction in the city's overall electricity consumption CO<sub>2</sub> footprint, as well as increasing regional RES generating capacity.

Tender	Consumption (GWh/year)	CO <sub>2</sub> emissions (tonnes/year)	Primary Energy consumption (GWh/year)	RES Generated (GWh/year)
Baseline (0 GWh RES)	13	949	32.5	0
Green tender (2017 tender – 0.914 GWh RES)		897.82	31.22	0.914
<b>Savings</b>		<b>51.18 (5.4%)</b>	<b>1.28 (3.94%)</b>	<b>0.914</b>

#### CALCULATION BASIS

- CO<sub>2</sub> emissions for conventional electricity set at 0,073 kg/kWh
- CO<sub>2</sub> emissions from RES sources set at 0,017 kg/kWh
- For primary energy consumption a PEF (Primary Energy Factor) of 2.5 was assumed for electricity produced from fossil fuels, and 1.1 for RES<sup>3</sup>
- Calculation made using the tool developed within the GPP 2020 project ([www.gpp2020.eu](http://www.gpp2020.eu)), and refined within the SPP Regions project. Available on the SPP Regions website.  
(More detailed calculation tables are included in the Annex below).

### Financial impacts

Green electricity under the new contract costs approximately 45% more than conventional electricity:

- Green electricity, with additionality: 193€/MWh
- Conventional electricity: 132.59€/MWh

<sup>3</sup> Source: Ecofys, Development of the Primary Energy Factor of Electricity generation in the EU-28 from 2010-2013, 2015

This will lead to an estimated additional cost of approximately €36,500 for the 914 MWh predicted. The overall electricity bill (for the full 13 GWh) will increase by approximately 3%.

## Market response

Only one bidder responded to the tender.

## Lessons learned and future challenges

Given that this is a very new approach to electricity tendering in order to increase the number of companies bidding it will be important for others to publish similar types of tender. Today this approach is also being applied by Nantes, Rennes and La Rochelle.

Lorient plans to continue with this approach, and it is planned to increase the consumption of green electricity to 3.5 GWh by 2020, at the same time as achieving an overall reduction of electricity consumption from 13 GWh to 9.5GWh, in part offset by a planned increase in the use of biomass (wood and wood pellets) as an alternative energy source. This could lead to savings of nearly 7,000 tonnes of CO<sub>2</sub> per year.

As well as increasing the purchase of high environmental value green electricity, work is being undertaken in buildings covered by the contract to reduce electricity consumption and produce electricity locally (via solar panels) to reduce the financial impact of the tender.

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## About SPP Regions

SPP Regions is promoting the creation and expansion of 7 European regional networks of municipalities working together on sustainable public procurement (SPP) and public procurement of innovation (PPI).

The regional networks are collaborating directly on tendering for eco-innovative solutions, whilst building capacities and transferring skills and knowledge through their SPP and PPI activities. The 42 tenders within the project will achieve 54.3 GWh/year primary energy savings and trigger 45 GWh/year renewable energy.

### SPP REGIONS PARTNERS



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