

Green electricity

Joint procurement of 500 GWh in Piedmont



| | |
|-------------------------|---|
| Purchasing body: | SCR – Central Purchasing Body of Piedmont Region |
| Contract: | 1 year framework contract for electricity supply (50% renewable) Awarded: October 2016 |
| Savings: | <ul style="list-style-type: none"> • 150.000 tons of CO₂ emissions saved • Primary Energy saving of 545 GWh • Financial saving of 8.000 €/GWh |
| RES triggered | <ul style="list-style-type: none"> • 389,26 GWh/yr |

SUMMARY

- 1-year contract for electricity supply. Estimated volume: 973,13 GWh
- Awarded to NOVA AEG S.p.A from Ivrea
- Minimum 50% of electricity supply to be produced from renewable sources - an increase from 10% in the previous contract.
- Issued by SCR Piedmont for public regional bodies. Can be used by all public authorities in the region (over 300).
- The unit price of 40,39 €/MWh is 8.3% lower than the previous contract

Procurement Approach

The purchase process was conducted by SCR (Central Purchasing Body of Piedmont Region) on behalf of several public bodies belonging to Piedmont Region. SCR worked in collaboration with Metropolitan City of Turin and ARPA Piedmont in the context of APE Network and in line with European and regional strategies on climate change.

In November 2015 the Piedmont Region formally joined the “Protocol Under2 MOU¹” (a Subnational Global Climate Leadership Memorandum of Understanding) to support International commitments on Climate Change. The main goals of the Protocol are to cut greenhouse gas emissions by 80-95% by 2050 compared to 1990 and/or to reach per capita emissions of less than 2 tons by 2050.

For these reasons, it was required that at least 50% of the electricity supplied must be produced from renewable sources, certified with a Guarantee of Origin provided by the supplier. The previous tender for 2016 had required only 10% from renewable sources. The tender was awarded on the basis of lowest price.

SCR Piedmont published the tender on 26 August 2016 in the EU Official Journal. The tender was awarded about a month and half later.

Joint Procurement

SCR Piedmont S.p.A., a corporation completely owned by Piedmont Region, aims to rationalise public spending and to optimise selecting procedures for contractors. This joint contract may be used (not compulsory²) by any regional public authority, including 19 healthcare companies, about 300 municipalities, the Metropolitan City of Turin, and provincial and regional agencies.

PROCUREMENT INNOVATION

Joint procurement of energy produced from renewable sources of an unprecedented scale – 486.58 GWh: a national record.

The Joint Procurement approach was applied for different reasons:

- to reduce administrative costs for the organisations who join
- to achieve price reductions for the supply (economies of scale)
- to send a strong demand signal to the renewable energy market and to the green economy market
- to ensure access to green energy in a faster and more convenient way, also for smaller entities

¹ <http://under2mou.org/the-mou/>

² Except for hospitals and other health organisations

Each individual buyer will decide the amount and the type of supply and will verify the energy origin using the Guarantee of Origin certificates.

Needs analysis

To estimate of the volume of electricity for the new contract, SCR investigated how many buyers (i.e. regional public bodies) would likely make use of it. This concluded that there would likely be a 10% increase in quantity purchased for all types of supply.

Tender specifications and Verification

TECHNICAL SPECIFICATION

- 50% of the electricity supplied produced from renewable sources
- Certification with a Guarantee of Origin (GO)
- Make available to buyers up to an additional 10% renewable electricity (97.32 GWh) for each type of supply, for a small price premium³

VERIFICATION

The supplier has to certify in all sampling points the origin from renewable energy sources with a Guarantee of Origin, as required by Annex I of the EPA Protocol (Resolution AEEGSI ARG/ELT 104/11).

The Guarantee of Origin (art. 15 Directive 2009/28/EC) corresponds to the CO-FER securities used by GSE for the purpose specified in the Decree of the Minister of Economic Development (July 31, 2009).

³ Individual buyers may then decide to request more than 50% renewable electricity for their supply (up to 100%), paying an additional €1/MWh for this additional proportion, until all of the additional 97.32 GWh has been used up.

Results

Environmental impacts

150,000 tons of CO₂ will be saved in 2017, compared to 2016 (assuming the same volume as estimated for the 2017 contract).

Table 1: Environmental savings

| Tender | Consumption (GWh/yr) | CO ₂ emissions (tonnes/year) | Primary Energy consumption (GWh/yr) | RES triggered (GWh/yr) |
|--|----------------------|---|-------------------------------------|------------------------|
| Benchmark (2016 tender – 10% RES) | | 356,066.4 | 2296.65 | 97.316 |
| Low carbon solution (2017 tender – 50% RES) | 973,316 | 205,167.4 | 1751.69 | 486.58 |
| Differences | | 150,899.0 (42%) | 544.96 (23%) | 389.264 |

CALCULATION BASIS

- CO₂ emissions for conventional electricity set at 0,404652 g/kWh
- CO₂ emissions from RES sources set at 0,017 g/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 RES⁴
- Calculation made using the tool developed within the GPP 2020 project (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

The contract's estimated economic value was €55,313,499.13⁵, divided by type of supply (low, medium and high voltage). The price of the winning bid was €39,300,241.13. The weighted average price (i.e. the average of individual time band prices) obtained as a result of electronic auction is

⁴ Source: Ecofys, Development of the Primary Energy Factor of Electricity generation in the EU-28 from 2010-2013, 2015

⁵ Based on the cost of the previous contract, and with an assumed price increase in the unit cost

40.39 €/MWh, compared to 48.34 €/MWh obtained in the 2016 tender, with a saving of **8 €/MWh (8.3%)**. As energy prices can fluctuate significantly over a year, the price stipulated is fixed and not indexed.

Market response

Four suppliers, operating at the national and international level, participated in the tender. All of these offered significantly less than the tender's estimated value.

Contract management

Each user of the contract (public buyer) will be required to verify that Guarantee of Origin certificates are provided by the supplier.



Awareness raising activities will be carried out to encourage further public sector buyers in the region to use the framework contract. SCR, the Metropolitan City of Turin and ARPA Piemonte (the regional environment agency) also issued a press release to communicate the initiative regionally. In addition, the supplier has to provide a company logo, certifying that the electricity derives from renewable sources, for the public sector buyers to use to communicate externally.

Lessons learned and future challenges

There is clear market availability to satisfy growing demands and large amounts of electricity produced from renewable sources. Prices for RES electricity have reduced significantly in recent years.

It is hoped that in 2018 closer to 100% green electricity may be achievable. The regional network will also explore opportunities for promoting self-electricity production and regional RES production.

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Annex 1 - Calculation of environmental savings

Calculations made using the tool developed within the GPP 2020 project (www.gpp2020.eu), and refined within the SPP Regions project. Available on the SPP Regions website.

CO₂ savings

| Energy source | Benchmark | | | | Low carbon solution | | | | Savings | |
|---------------------------|-----------------------------------|-----|-------------------------------|--|--|-----|-------------------------------|--|---|--|
| | Current annual energy consumption | | Per year | | Annual energy consumption with contracting | | Per year | | Per year | |
| | | | Energy consumption (TOE/year) | CO ₂ -emissions (t CO ₂ /year) | | | Energy consumption (TOE/year) | CO ₂ -emissions (t CO ₂ /year) | Reduction of CO ₂ -Emissions (t CO ₂ /year) | Percentage of CO ₂ -savings (%) |
| Electricity, conventional | 875.844.001 | kWh | 75.309,0 | 354.412,0 | 486.580.000 | kWh | 41.838,3 | 196.895,6 | 150.899,0 | 42,4% |
| Electricity, green | 97.316.000 | kWh | 8.367,7 | 1.654,4 | 486.580.001 | kWh | 41.838,3 | 8.271,9 | | |
| TOTAL | 973.160.001 | | 83.676,7 | 356.066,4 | 973.160.001 | | 83.676,7 | 205.167,4 | | |

Primary energy savings

| | | Quantity (GWh) | P.E.F. | Primary energy consumed (GWh) | Total primary energy consumed |
|-----------------------------|--|----------------|--------|-------------------------------|-------------------------------|
| 2016 | Energy produced from fossil fuels | 875,84 | 2,5 | 2189,60 | 2296,65 |
| | Energy produced from renewable sources | 97,316 | 1,1 | 107,05 | |
| 2017 | Energy produced from fossil fuels | 486,58 | 2,5 | 1216,45 | 1751,69 |
| | Energy produced from renewable sources | 486,58 | 1,1 | 535,238 | |
| Primary energy saved | | | | | 544,96 |

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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