



## Heat supply with wood

### Federal Procurement Agency, Austria

- Huge CO<sub>2</sub>-reductions achieved (23,120 t CO<sub>2</sub>) that is equivalent to the annual average consumption of 4,000 EU households
- Supporting independency from fossil fuels



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#### Benchmark

Heat supply with light fuel oil

- o 2,520 t CO<sub>2</sub>/year
- o 724 toe/year

#### GPP 2020 tender

Heat supply with wood and other renewable energy source

- o 208 t CO<sub>2</sub>/year
- o 724 toe/year

#### Results

- o CO<sub>2</sub>-reduction:
- o 2,312 t CO<sub>2</sub>/year
- o 23,120 t CO<sub>2</sub>/contract
- o Energy reduction: 0 toe

## Contract tendered

- Contract for heat supply for two facilities owned by a public authority in the Austrian region Klagenfurt Nord, tendered by the Austrian Federal Procurement Agency (BBG).
- A minimum of 80 % of the supplied heat had to come from renewable sources (like wood).
- In July 2015, the BBG published the call for tender in December 2015 the BBG awarded the contract.
- Supply contract with a duration of 10 years
- Total costs: around 3.9 Mio € (without VAT)

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## Procurement Approach

A negotiated procedure was used to tender the heat supply.

Technical specifications	Award criteria (a total of 100 points)
<ul style="list-style-type: none"> <li>- Heat supply of 2 facilities in Klagenfurt Nord</li> <li>- Heat transfer at central heat transfer points</li> <li>- Definition of flow and return temperature</li> <li>- Maximum thermal Output and Input</li> <li>- Definition of the line heat density of the network in case the contractor supplies more objects of the public authority nearby with heat</li> <li>- A minimum of 80 % from renewable energy sources</li> </ul>	<ul style="list-style-type: none"> <li>- Price: maximum of 90 points</li> <li>- Heat supply with a higher share of renewable energy sources (as the minimum value of 80 %): maximum of 10 points</li> </ul>

### Contract conditions

- Definition renewable energy sources: Non-fossil energy sources (wind, solar, geothermal, wave and tidal energy, hydro, biomass (wood, etc.), waste with a high share of biodegradable waste, landfill gas, sewage gas und biogas) including carcass meal, waste lye and sewage sludge.
- Capital preservation in part with the Corinthian Bio-Heat-Index (=Kärntner Biowärmeindex).
- It is possible to connect more facilities.

## Criteria Development

After a market survey and a consultation with the customer, the Federal Procurement Agency (BBG) decided to ask for a minimum of 80 % energy from renewable energy sources. This percentage is sensible from a technical as well as from an economical point of view. A percentage of 100 % energy from renewable sources was aspired. Therefore, an offer with 100 % of energy from renewable sources received another 10 % of the total points. With this award criterion, the FPA underlined its interest for an energy supply with highly reduced CO<sub>2</sub>-emissions.

## Results

The contractor provides energy made of 100 % wood and other renewable energy sources. Below, you'll find the CO<sub>2</sub>-reduction due to the transition from 100 % light fuel oil to 100 % wood. The transition doesn't influence the amount of energy consumed.



	CO <sub>2</sub> emissions	Energy consumption
GPP 2020 tender	208 t CO <sub>2</sub> /year	724 toe/year
Benchmark (last tender)	2,520 t CO <sub>2</sub> e/year	724 toe/year
Annual savings	2,312 t CO <sub>2</sub> /year	0 toe/year
Total savings (10 years)	23,120 t CO <sub>2</sub> e	0 toe

### Calculation basis

Until now, the public authorities consumed around 700 t light fuel oil per year. We estimate that the new contractor provides 100 % of the renewable energy from wood.

Direct and indirect CO<sub>2</sub>-Emissions of light fuel oil: **3.595 t CO<sub>2</sub>/t**

- Direct CO<sub>2</sub>-Emissions: 3.160 t CO<sub>2</sub>/t (Source: Bundesamt für Umwelt, Schweiz, 2015)
- Indirect CO<sub>2</sub>-Emissions: 0.435 t CO<sub>2</sub>/t (Source: GEMIS)

Calorific value light fuel oil: 0.0429 TJ/t; Calorific value 700 t light fuel oil: 30.03 TJ

Direct and indirect CO<sub>2</sub>-Emissions wood: **0.099 t CO<sub>2</sub>/t**

- Direct CO<sub>2</sub>-Emissions: 0.020 t CO<sub>2</sub>/t (Source: Bundesamt für Umwelt, 2015)
- Indirect CO<sub>2</sub>-Emissions: 0.079 t CO<sub>2</sub>/t (Source: GEMIS)

Calorific value wood (stored for 2 years): 4 kWh/kg (Source: Waldverband Österreich, 2009);

Calorific value of 2 104 t wood: 30.03 TJ

## Lessons learned

The company with the best offer is going to supply heat from 100 % renewable energy sources.

The change from light heat oil to renewable energy sources offers a huge reduction of CO<sub>2</sub>-emissions. Furthermore, with the use of local biomass, the added value is kept in the region.

## Contact

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## About GPP 2020



GPP 2020 aims to mainstream low-carbon procurement across Europe in support of the EU's goals to achieve a 20% reduction in greenhouse gas emissions, a 20% increase in the share of renewable energy and a 20% increase in energy efficiency by 2020.

To this end, GPP 2020 will implement more than 100 low-carbon tenders, which will directly result in substantial CO<sub>2</sub> savings. Moreover, GPP 2020 is running a capacity building programme that includes trainings and exchange. – [www.gpp2020.eu](http://www.gpp2020.eu)



## About PRIMES

Across six countries in Europe; Denmark, Sweden, Latvia, Croatia, France and Italy, PRIMES project seeks to help municipalities overcome barriers in GPP processes, many of which lack capacity and knowledge.

PRIMES aims to develop basic skills and provide hands-on support for public purchasing organisations in order to overcome barriers and implement Green Public Purchasing. This will consequently result in energy savings and CO<sub>2</sub> reductions. – [www.primes-eu.net](http://www.primes-eu.net)



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