



## Rental of low-carbon multifunction devices (MFD)

### Municipality of Loures, Portugal

- 60 % savings of energy and CO<sub>2</sub> emissions
- € 10,913 saved in electricity costs for the contract period (3 years)



Image source: OesteCIM | Manuel Salvador

#### Benchmark

- 369 MFD with the maximum energy consumption allowed by Energy Star standard
- 4.5 toe/year energy consumption
- 26.5 t CO<sub>2</sub>/year

#### GPP 2020 tender

- 369 MFD with higher energy efficiency than the minimum set by Energy Star
- 1.8 toe/year energy consumption
- 10.5 t CO<sub>2</sub>/year

#### Results

- 8.2 toe energy savings for the contract period
- 48.0 t CO<sub>2</sub> savings
- About € 10,913 saved in electricity costs for contract period (3 years)

## Contract tendered

Loures municipality has a SPP strategy in place and aims to introduce sustainable criteria in procurement. Energy efficiency is one aspect taken into account when procurement actions are prepared.

- Public tender for renting of imaging equipment (MFD and printers) to be used in Loures Municipality services and municipal schools, including technical assistance, consumables and maintenance.
- 369 multifunction devices, divided in 12 types.
- Contract length: 36 month.
- Maximum tender budget: €810,000 (excluding VAT)



## Procurement approach

The tender was done via open procedure. Minimum technical specifications were defined for 12 types of equipment, including functions, quantities, color/black & white, printing speed and other specifications. Apart from these, the following low carbon criteria were defined.

| Low carbon criteria             |   |
|---------------------------------|---|
| <b>Technical specifications</b> |   |
| Energy consumption              | <p>According with Energy Star 2.0 standard for imaging equipment.</p> <p>A maximum energy consumption was defined for the 369 MFDs, based on the Typical Electricity Consumption (TEC) of Energy Star 2.0:</p> <p><math>TEC_{max} \text{ global} = 1,295.25 \text{ kWh/week}</math></p>   |
| <b>Award criteria</b>           |   |
| Energy consumption              | <p>Energy efficiency below the <math>TEC_{max} \text{ global}</math> from technical specifications was awarded using the following: <math>PF = P \times 80\% + EFE \times 20\%</math></p> <p>PF – Final score of proposal</p> <p>P – Score for price</p> <p>EFE – Score for energy efficiency</p> <p><math>EFE = 100 - ((TGSP/TGSMP) * 100)</math></p> <p>TGSP – TEC global proposal (sum of TEC for the 369 MFD of the proposal, in kWh/week)</p> <p>TGSMP - <math>TEC_{max} \text{ global}</math> (sum of <math>TEC_{max}</math> for the 369 MFD according to Energy Star 2.0 specifications, in kWh/week).</p> |

| Contract clauses       |  |
|------------------------|--|
| Repair and maintenance | The contract has a duration of 36 months, during this time the supplier must supply all consumables (except paper and other printing and copying media) and parts necessary for the proper functioning of the equipment. |

## Criteria development

Criteria were developed through consultation of the Energy Star 2.0 standard for imaging equipment, version from April 2014, available at <http://www.eu-energystar.org/products.htm>.

The  $TEC_{max}$ , the maximum typical electricity consumption for the 12 types of equipment to be purchased were calculated using the formula:

$$TEC_{max} = TEC_{Req} + Adder_{A3}$$

—  $TEC_{max}$  is the maximum TEC requirement in kilowatt-hours per week (kWh/wk), rounded to the nearest 0,1 kWh/wk for reporting;

—  $TEC_{Req}$  is the TEC requirement specified in Table 5, in kWh;

—  $Adder_{A3}$  is a 0,3 kWh/wk allowance provided for A3-capable products.

$TEC_{Req}$  was determined for the 12 types of equipment using table 5 (see Commission Decision 2014/202/EU on the coordination of energy-efficiency labelling programmes for office equipment on adding specifications for computer servers and uninterruptible power supplies to Annex C to the Agreement and on the revision of specifications for displays and imaging equipment included in Annex C to the Agreement, Official Journal of the European Union, L 114, 16.04.2014, page 126) and the equipment types, their characteristics, as the type of device

– MFD or non-MFD; color/black&white; printing speed, A3-capable printing or not.



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## Results

|                                     | Energy consumption | CO <sub>2</sub> emissions    |
|-------------------------------------|--------------------|------------------------------|
| Benchmark (Energy Star 2.0)         | 4.5 toe/year       | 26.5 t CO <sub>2</sub> /year |
| GPP 2020 tender                     | 1.8 toe/year       | 10.5 t CO <sub>2</sub> /year |
| Savings/year                        | 2.7 toe/year       | 16.0 t CO <sub>2</sub> /year |
| Savings/lifetime (=3 year contract) | 8.2 toe            | 48.0 t CO <sub>2</sub>       |

## Basic data for calculations

Estimates were made using information on Typical Electricity Consumption (TEC) of imaging equipment available at <http://www.eu-energystar.org/products.htm>.

The energy consumption and CO<sub>2</sub> emissions of the equipment of the winner proposal is compared with the maximum energy consumption defined by the Energy Star standard for imaging equipment and not with the replaced appliances, so the benchmark itself is already an energy efficient one.

The data used for calculations is as followed:

TEC values for the equipment included in the winner proposal and TEC<sub>max</sub> values defined in Energy Star (in kWh/week) were multiplied by 52 weeks/year to obtain annual consumptions.

CO<sub>2</sub> emission factor for electricity generation in Portugal: 0,506 kg/kWh.

Average electricity cost: 0,115 €/kWh.

The lifetime of new equipment has been considered as 3 years, the length of the contract.



## Lessons learned

Loures municipality has learned that it is possible to introduce, low carbon criteria in tenders, awarding the most efficient equipment and maintaining the price. So this approach will be used in future tenders, aiming at the most advantageous proposal that includes sustainable development considerations, as energy consumption/CO<sub>2</sub> emissions.

For this end Loures' Sustainable Procurement Strategy was very important, as it meant political support for these of activities.

The participation of Loures in European projects and the cooperation with national research institutions also gives technical support, wider perspective and a very useful framework.

Even though all appliances had to comply with the latest Energy Star specifications, the difference between the awarded MFD and the maximum set in the standard was, in average 48%, showing that we can go beyond Energy Star to obtain more efficient equipment. This should be taken in future tenders.

## 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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