



## Framework contract for lighting equipment

Federal Office for equipment, information technology  
and utilization in the Bundeswehr (armed forces)

- Major reduction in power consumption and its associated CO<sub>2</sub> emissions at agencies transferring to LED illuminants.

### Benchmark: Predecessor Invitation to tender

- 249.2 t CO<sub>2</sub>e/year
- 37.7 TOE/year

### GPP 2020 Invitation to tender

- 37.4 t CO<sub>2</sub>e/year
- 5.6 TOE/year

### Results

- 211.8 t CO<sub>2</sub>e/year
- 2118.4 t CO<sub>2</sub>e/10 years
- 32.0 TOE/year
- 320.1 TOE/10 years

## Contract advertised for tender

- Invitation to tender for a framework contract for direct supply of individual consumption goods in the product group "illuminants".  
The invitation to tender has been issued by the Federal Office for equipment, information technology and utilization in the Bundeswehr.
- The tendered service involves direct supply for several hundred agencies with illuminants. The agencies will order directly from the winning tenderer.
- The product list of illuminants from which the agencies will order from the winning tenderer encompasses more than 400 items. 130 of these items are light-emitting diodes; i.e. LED. These have been included in the tender for the first time.
- Contract volume: approx. €800,000 (excl. VAT)

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## Procedure for procurement

The call for tenders was an open tender procedure:

Supply of illuminants	
<p><b>Technical specifications for LED illuminants:</b></p> <ul style="list-style-type: none"> <li>- Definition of individual LED illuminants et al. with reference to luminous color (in Kelvin), color rendering index (Ra), lighting current (in lumen) and power consumption (in watt).</li> <li>- Partially indicate minimum value for rating hours of LEDs (depending on lamp type 15,000 to 50,000 rating hours).</li> </ul>	<p><b>Award criteria</b></p> <p>The most cost-effective offer</p>

### Contractual requirements

- Orders from the framework contract shall be made as individual orders
- The contract shall run until the year 2018.

## Results

Instead of conventional illuminants, the agencies will have LED illuminants supplied in order to reduce their energy consumption with the greater energy efficiency of LED illuminants and thereby the CO<sub>2</sub> emissions related to electricity generation. Since LED illuminants are being taken up for the first time in the tender, there are no empirical values for the amount of LED illuminants ordered annually. The assessment of savings is based on assumptions explained under "Calculation basis".

	CO <sub>2</sub> emissions (in t CO <sub>2</sub> e)	Energy consumption (in TOE)
GPP 2020 Invitation to tender	37.4 t/ year	5.6 TOE/year
Predecessor invitation to tender	249.2 t/ year	37.7 TOE/year
Yearly energy conservation	211.8 t/ year	32.0 TOE/year
Total energy conservation	2,118.4 t/ 10 years	320.1 TOE/10 years

### Calculation basis

- It is assumed that, within the framework agreement, the agencies procure 5,000 LED illuminants yearly instead of conventional illuminants. This comes to a total of 15,000 LED illuminants over the three-year duration of the contract.
- A selected LED illuminant is meant to be exemplary for the 130 LED illuminants included in the framework contract. The energy conservation of the selected LED illuminant is assessed. The selected LED illuminant is a lamp with power consumption of 6 watt. The analogous conventional illuminant has a power consumption of 40 watt.
- The acquired LED illuminants are assumed to be implemented in areas with a daily usage time of 2 hours; i.e. a yearly burning time of 730 hours.
- The energy consumption for the useful life of the illuminants is assessed over a 10-year period. The tendered LED illuminants should, in any case, reach this useful life (min. 15,000 rating hours) for the assumed yearly usage time of 730 hours.
- The value of the Federal Environmental Agency for the year 2014 has been selected as emission factor for the overall German fuel mix: 0.569 g CO<sub>2</sub>/kWh.

## Findings obtained

The extent to which the agencies acquire the recently offered LED illuminants remains to be seen. Other quality criteria have been taken into account for the LED illuminants, such as number of cycles of operation prior to premature failure.

## Contact

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## About GPP 2020

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The GPP 2020 project has the goal of promoting climate-friendly procurement practices in all of Europe in order to reach the goals set by the EU for the year 2020: reduction of greenhouse gases by 20%, an increase in the percentage of renewable energy sources of 20%, and an increase in energy efficiency of 20%.

GPP 2020 will issue more than 100 climate-friendly invitations to tender in order to effect an immediate reduction in CO<sub>2</sub> emissions. Training and networked events on environmentally-friendly public procurement in the energy sector will also be offered. – [www.gpp2020.eu/de](http://www.gpp2020.eu/de)

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