



## Energy efficient commercial dishwasher

Procurement Agency of the  
Federal Ministry of the Interior, Germany

- Open tender using life time costing award criteria (operation efficiency)
- Significant reductions in electricity and hot water consumption, thereby reducing CO<sub>2</sub> emissions



### Last tender (2006)

- 52.7 kW per h
- 716 t CO<sub>2</sub>e per lifetime
- Hot water consumption: 360 liter per h

### GPP 2020 tender (2014)

- 25.5 kWh per h
- 346 t CO<sub>2</sub>e per lifetime
- Hot water consumption: 165 liter per h

### Results

- 63 TOE energy savings (over 15 years)
- 369 t CO<sub>2</sub> savings (over 15 years)
- 54 % water reduction

## Contract tendered

- Purchase and maintenance of a commercial dishwasher by the Procurement Agency of the Federal Ministry of the Interior, Germany.
- Total costs: about 70,000 € (purchase costs, excluding VAT)
- This tender falls under the *National Sustainability Strategy of the Federal German Republic*. It also implements the *Sustainability Action Plan* of the Federal German Government, which aims to put sustainability principles into practice and reduce greenhouse gas emissions.
- The purchase award decision was based on a life time cost calculation.

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## Procurement approach

Tendering followed the open procedure:

### Commercial dishwasher with a basket-transportation system

Technical specifications	Award criteria
<ul style="list-style-type: none"> <li>- Washing capacity: 140 dish baskets per hour</li> <li>- Machine meets requirements of DIN 10510</li> <li>- Tender included maintenance services to ensure an optimum product lifetime</li> <li>- Technical add-ons to reduce water and electricity consumption were also requested as voluntary additions.</li> </ul>	<p><u>Lowest price based on life time costs defined as:</u></p> <p>Purchase costs</p> <p>+</p> <p>Life time costs (15 years / 1,800 h operating hours per year – including costs for electricity, fresh water and waste water)</p>

### Contract clauses

- Repair and maintenance: Compliance with general law and local regulations, especially with regards to environmental and health aspects.
- Recycling of the old machine: Obligation to take back and recycle the old machine.
- Compliance with the Core Standards of the International Labour Organisation in the course of fulfilling the contract.

## Criteria development

The technical specifications and award criteria were developed using a life time costing approach in order to include both environmental and economic aspects of the dishwasher. This was the first time a life time costing approach was used by Bescha and it achieved good results.

## Results

	CO <sub>2e</sub> emissions (t CO <sub>2e</sub> / 15 years)	Energy consumption (toe/ 15 years)
Low Carbon Solution	716	59
Last Tender	346	122
Savings	369 t CO <sub>2e</sub> /15 years	63 toe/15 years

### Calculation basis

- The consumption of the reference machine purchased in 2006 was 1,422,900 kWh (usage time: 1,800 h/a over 15 years lifetime). The new dishwasher is consuming only 688,500 kWh.
- Water consumption: 360 liter/h (2006 model), new machine: 165 liter/h



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## Additional ecological results

- The winning bidder offered an osmosis installation whose use enables a noticeable reduction of chemical cleansing liquid, thus reducing the environmental impact.
- The new machine noticeably reduces air emissions and thereby improves the room climate and reduces the need for an additional exhaust air installation, achieving indirect energy savings.

## Lessons learned

The possible reductions in this product range are huge and easily replicable, especially in comparison with old machines. This product also allows for an overall financial return on investment with regards to the higher purchase cost of an energy efficient machine.

Applying life time costing at award stage was an effective way to identify the most environmentally friendly product.

With regards to the technical specifications, the next tender should also include certain criteria for air emissions and usage of chemical cleansing liquids.

## Contact

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## About GPP 2020



procurement  
for a low-carbon  
economy

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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)

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Green Public Procurement

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. – [www.primes-eu.net](http://www.primes-eu.net)



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