

## Purchasing energy-efficient outdoor lighting in Cascais

MUNICIPALITY OF CASCAIS, PORTUGAL

### Procurement objectives

In preparation for an upcoming tendering action, the Municipality of Cascais undertook a market engagement process, which saw 11 suppliers of light emitting diodes (LEDs) participating in one-to-one meetings with representatives from the Environment and Procurement departments, and from the Local Energy Agency. The companies which participated in the meetings shed light on environmental product characteristics and the opportunities available for increased sustainable product innovation. The tender is in the process of being launched and has a total contract value of 50,000 Euros.

### Criteria used

Following the market consultation process, it is envisaged that the following will be used for the tendering procedure:

**Selection Criteria:** Environmental management: Implementation of acknowledged Environmental Management Systems such as [EMAS](#), [ISO 14001](#) or equivalent measures, for the main supplier and along the entire supply chain.

*Principles and rights at work:* Main International Labour Organisation ([ILO](#)) conventions must be respected along the whole supply chain. Specifically conventions number 100, 111, 87, 98, 138, 182, 29 and 105; all related to basic labour principles and rights.

**Technical specifications:** (for luminaire features and performance, as well as global performance)

**Toxic substances:** Equipment must comply with [EU Directive 2002/95/CE](#) regarding restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS). The equipment and its components may not contain any of the substances of high concern listed under the [EU REACH Regulation](#).

**Eco-design:** Equipment must be designed to facilitate dismantling and recovery for reuse and recycling of components and materials.

**Illumination performance:** Requirements for good colour rendering, high durability and high energy efficiency. Requirements will also be included for avoiding waste and light pollution.

**Intelligent energy management:** A intelligent technique management system to be used to enable controlling the percentage of light exerted by the lamp. Remote access via the Internet to data on energy consumption from each lamp, at 30 minute intervals.

**Economic criteria for awarding the contract:** The method for evaluating the economic aspects of the tenders will be using a life-cycle costing (LCC) approach, based on the [SMART SPP LCC-CO<sub>2</sub> tool](#). The tool allows the calculation of all ownership costs, which include operation, maintenance and end-of-life costs. [Energy Star Solid State Lighting](#) and the European SMART SPP project guidance were the references used to develop the tendering criteria.

### Environmental impacts

Cascais' new energy efficient lighting system is expected to result in a reduction of indirect emissions of 34,600 kg of CO<sub>2</sub> per year. The different components of street lighting, that is, the lamp that provides the light, the ballast or control gear that regulates current and the luminaires that direct and shade the light will have different environmental impacts at different stages of the product life cycles. However, an assessment of street lighting as a whole as part of the [Energy Using Products](#) (EuP) study concluded that energy consumption during the use phase, chiefly by the lamps, but also the optical parts of the luminaires and ballasts, are the most significant causes of greenhouse gas emissions.

Within the report of the EuP Preparatory Studies Lot 9 (published January 2007) LED technology was still assessed as the best 'not yet available' technology. However, the main reason for this appraisal was the lack of availability – not a lack of technological characteristics of LED technology itself. Since this study, LED technology progresses continuously and manufacturers are increasingly emerging.

### Lessons learned

There is not enough experience in the implementation of this technology, hence little transfer from good practice is possible. Obtaining reliable data from suppliers, and especially data regarding embedded emissions, can be difficult. However, the pre-procurement process is highly valuable for developing appropriate sustainability criteria for use in purchasing innovative products. Training on how to use a life-cycle costing (LCC) approach, in practice, must be given to both procurers and suppliers. More time will be allocated to training for future actions of this nature.

For more information, please see European GPP criteria for street lighting and traffic signals – [product sheet](#) and [background report](#).

### Background

In 2005, energy consumption for public lighting in the municipality of Cascais represented 79 percent of total electricity consumed by the local government (for public infrastructure). Cascais' Local Energy Agency took on the task of reforming the criteria used to purchase public lighting technology by means of their involvement in the European project [Public Procurement boosts Energy Efficiency](#) (PRO-EE), initiated in November 2008.

