



Environment and Spatial Planning
*Ministry of Housing, Spatial Planning and
the Environment*

Criteria for the Sustainable Public Procurement of **Public Lighting**

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These criteria for Sustainable Public Procurement were developed by NL Agency at the request of the Ministry of Housing, Spatial Planning and the Environment (VROM). The programme for sustainable operational management for public authorities (DBO) is a joint initiative of the Dutch Government, the Association of Netherlands Municipalities (VNG), the Association of Provincial Authorities (IPO) and the Association of Water Boards (UvW).

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1 Introduction

The Dutch government wants to take concrete steps towards a sustainable society, and to set a good example. Each year, government organisations spend more than EUR 50 billion on the purchase of Supplies, Services and Public works. By purchasing sustainably, the government can significantly boost the market for Sustainable Public Products. Governmental authorities have set clear objectives to achieve this: the central government is aiming for 100% Sustainable Public Procurement in 2010, while the municipalities aspire towards 75% in 2010 and 100% in 2015. Provincial governments and water boards have set themselves the target of at least 50% in 2010. 100% Sustainable Public Procurement is understood to mean that all purchases meet the minimum requirements that have been set for the relevant product groups at the time of purchase. More information on this topic is available from the website Sustainable Procurement (www.agentschapnl.nl/sustainableprocurement).

NL Agency supports government authorities in various ways to help reach these objectives. These include developing criteria for Supplies, Services and Public works procured by these authorities. This document focuses on the criteria for the Public Lighting, the elaboration of the criteria in specification texts and a more detailed assessment of the criteria, as well as a number of points for attention in the pre- and post-procurement stages. Additional background information and considerations regarding the content of the criteria can be found in the criteria document on the website Sustainable Procurement www.agentschapnl.nl/duurzaaminkopen/criteria, available in Dutch only.

Policy first, then purchase

This document concerns the procurement of sustainable products and services in the field of public lighting. The procurement of sustainable products and services is the final step in a process which begins with the development of a vision for policy in the field of public lighting. The vision and the policy arising from it are self-evidently of great importance to the level of sustainability of the products and services in the phase surrounding procurement. The first question which arises in public lighting is whether public lighting in the situation concerned is actually necessary. Public lighting is only necessary in places where people go who need light to do their work or to feel safe. The procuring party or principal, such as a municipality or road manager, determines which places come into consideration here. Thus, lighting is only needed along a cycle track in the woods if people cycle along this track at night. In residential areas, more lighting is generally necessary than on thoroughfares. All these kinds of decisions together determine the sustainability of public lighting. These policy considerations, which are often related to public and road safety, therefore happen prior to the tendering process and are formulated by a professional in the lighting plan. This report assumes that the decision that public lighting is necessary in a particular place has already been made. This document deals with the sustainability criteria for the systems to be procured.

Sustainable potential

There are around 3,000,000 lighting masts installed in the Netherlands so that there are around 3,500,000 lighting points for public lighting (2008 information). With an average power of 50 W per lighting point and 4,100 operating hours per year, there is thus an electricity consumption of around 800,000,000 kWh per year. So around 1.2% of national electricity consumption is on account of public lighting. Limitation of the energy consumption is thus one of the most important sustainability requirements in the field of public lighting.

Given the developments in the field of energy-efficient light sources – think of LED technology – it is not unrealistic to suppose that the average energy consumption per light point will in 20 years be half of the current energy consumption.

For various reasons however there is also a trend towards the use of more public lighting. The reasons for this are diverse: separate lit cycle paths, higher light intensity for public safety, urban renewal, etc. The effects of energy saving are thus partially negated in any case.

1.1 Definition of the product group

The product group Public Lighting (in Dutch: Openbare Verlichting, OVL) includes all lighting in public space. By far the larger part of the realisation and the maintenance and management is the responsibility of government.

The most important objectives served by public lighting – in the absence of sufficient daylight – are increasing public and road safety. Besides this, part of the public lighting is in use for aesthetic (illumination) and commercial (light advertising) reasons. For standards for public lighting, refer to Dutch Practice Guideline 13201-1 and other documents.

From the viewpoint of sustainability, the use of lighting for aesthetic and commercial objectives may be considered undesirable. Those drafting this document however consider light advertisements to be a social reality and as part of the product group.

The illumination of buildings has been left out of this product group.

Frontage advertisements and display illumination do not belong to lighting in public space. Government is not responsible for this lighting and these categories therefore do not come within this product group.

The product group Public Lighting comprises supplies (lamps, fittings and masts) as well as services and works for installation, management and maintenance.

In the product group Public Lighting there are also different types of procurement such as design, design and construct, etc.: one government body may invite tenders functionally, so that suppliers and installation companies obtain the freedom for an optimal tender, while another may invite tenders at component level, in order to gain more grip on the system.

For the benefit of the contracting authority, a number of CPV codes that might be of relevance to this product group have been included in this document. The selection is by no means exhaustive or complete. The contracting authority will remain responsible for compiling the correct set of CPV codes to match the relevant tender.

The following CPV codes apply to this product group:

34928500-3	Street lighting equipment.
34928510-6	Street lighting masts.
34928520-9	Lamp posts.
34928530-2	Street lamps.
34993000-4	Street lighting.
45316110-9	Installation of street lighting equipment.
50232000-0	Maintenance of street lighting and traffic light systems.
50232100-1	Maintenance of street lighting.
50232110-4	Commissioning street lighting systems.
31523100-9	Neon advertising lamps.

2 Sustainability in the procurement process

The criteria in this document have been classified in the various steps of the public procurement process. More information about these steps and how to combine them with sustainability can be found in the Sustainable Public Procurement Manual. This manual can be downloaded from the website Sustainable Procurement www.agentschapnl.nl/sustainableprocurement.

2.1 Preparatory stage (points for consideration)

In the preparation of a call for tender there is a multiplicity of choices which have a great impact on sustainability. The inclusion of sustainability in the preparation of projects is not current practice and demands additional policy from the government bodies concerned. By involving sustainability in an explicit way at all stages, sustainable calls for tender gain more content and a more sustainable realisation becomes possible.

Ensuring sustainability in the project

Ensuring sustainability in the project demands that at an early stage, even before the formal start of the procurement phase, the procuring organisation considers the sustainability aspects of the project. In practice this will mean a collaboration among the project leader (advocate of technology and project result), the purchaser (financial advocate) and for example the environmental coordinator (sustainability advocate).

In the sustainable design of public lighting, a number of conditions are of importance to a proper organisation and the incorporation of sustainability into the process. Below are listed some general attention points for the process, as these are also to be found in the National Civil Engineering Sustainable Building Package ((**NP GWW = Civil Engineering** <http://www.crow.nl/zoek?q=nationaal+pakket&c=okt&c=pub&c=cur&c=con&c=fat> q):

- Organise sustainable building in the project (NP GWW 100);
- Take account of sustainable building in the project plan (NP GWW 101);
- Take account of sustainable building in the composition of the project team (NP GWW 103);
- Take account of sustainable building in communication (NP GWW 102);
- Take account of sustainable building in the financing of the project (NP GWW 104);
- Draw attention to risks in civil engineering projects, particularly with regard to the environmental effects to be realised (NP GWW 105);
- Take account during the design of future management and maintenance (NP GWW 106).

Besides ensuring sustainability in the process, there are opportunities to safeguard sustainability in the design, in the execution of works, in the utilisation stage or at the end of the lifetime. Below are some points for consideration:

- Aim for energy saving in civil engineering works (NP GWW 503);
- Employ alternative energy sources (NP GWW 504);
- Prevent lights burning unnecessarily (NP GWW 506);
- Employ energy-saving lighting (NP GWW 507);
- Aim for re-use of materials which are released (NP GWW 511);

- Prevent nuisance from vibration and noise (NP GWW 512);
- Limit the production of waste in construction, use and management (NP GWW 513);

2.2 Specification stage (criteria)

During the specification stage, the needs of the internal or external customer are translated into a tender document. This stage entails the formulation of:

- Criteria for supplier qualification. These could include grounds for exclusion, suitability requirements, i.e. requirements with regard to suppliers, and, in the case of restricted procedures, any selection criteria, i.e. wishes with regard to suppliers.
- A description of the minimum requirements pertaining to supply, service or task (the Schedule of Requirements).
- Award criteria, i.e. wishes regarding Supplies, Services and Public works. These are only applicable when the tendering process is based on the principle of the Most Economically Advantageous Offer ('Economisch Meest Voordelige Inschrijving' or EMVI).
- The contract stipulating the contract provisions.

More information on the various types of criteria and the various tender options can be found in the Sustainable Public Procurement Manual. Innovation is also included in the award criteria, where relevant. Innovation is oriented towards the development and introduction of new ideas and products.

The criteria in this document have been formulated to support the purchaser in the Sustainable Public Procurement of Public Lighting. The criteria have been subjected to legal review. However, every procurement and tender process is unique. For that reason, the drafting of a tender document remains the responsibility of the purchaser.

Overview of criteria

Distinction is made in the table below among the different forms of contract, such as design-only, design and construct, and construct-only.

Table 3.1 Overview of criteria for Public Lighting

Area of application	New installation and reconstruction of Public Lighting systems			Existing Public Lighting systems management and maintenance		
	Design	Design & construct	Construct	Design	Design & construct	Construct
Criterion						
Minimum requirements Public Lighting						
Public Lighting design, energy label	X	X	X	X	X	X
	X	X	X	X	X	X

Area of application Criterion	New installation and reconstruction of Public Lighting systems			Existing Public Lighting systems management and maintenance		
	Design	Design & construct	Construct	Design	Design & construct	Construct
Dimmable lighting	X	X	X	X	X	X
Award criteria						
Sustainable design of Public Lighting	O	O	-	O	O	-
Sustainable design of advertising lighting	O	O	-	O	O	-

X = include in this phase

- = do not include in this phase

O= optional

In the 'purchasing' of the product group Public Lighting it is not generally sufficient to merely include the Public Lighting criteria. In general, the simultaneous carrying out of ground works, the use of heavy vehicles or mobile machinery, the installation of cables and pipelines and the purchase of electricity will also need to be considered.

You can find the criteria for these products groups on the website: www.agentschapnl.nl/duurzaaminkopen/criteria.

2.2.1 Supplier qualifications

No criteria have been formulated for this specific product group with regard to supplier qualification. More information on the possibilities of incorporating sustainability at this stage of the process can be found in the Sustainable Public Procurement Manual.

2.2.2 Schedule of requirements

Public Lighting labelling system

When we consider the drafting of minimum requirements, the newly-developed system as described by the working group 'Public Lighting Energy Labelling' occupies a particular place. The uniform applicability of the system is a useful aid to the purchaser. It is sufficient for the purchaser to indicate the label which is required.

Minimum requirements

Minimum requirement no. 1	<p>Energy label</p> <p><i>(In design, supply and installation for new installations and complete replacement of fittings and lamps)</i></p> <p>The public lighting system must at least comply with the energy performance of label D in the Public Lighting Energy Labelling Manual,</p>
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	<p>April 2009, from NSVV (Netherlands Lighting Expertise Foundation) and Agency NL.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement to be included with this tender by the tenderer to confirm that tenderer complies with this requirement. 2. Specifications of the Public Lighting system to be included in this tender (mast plan, type of mast, fitting lamp and PSD¹) which demonstrate that this requirement is complied with.
Notes for purchaser	<p>The Public Lighting Energy Labelling Manual, April 2009 from the NSVV and Agency NL may be downloaded from the website: www.agentschapnl.nl/openbareverlichting/Publicaties/</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. In the specification of the system in the tender (mast plan, type of mast, fitting, lamp and PSD²). 2. No further verification.

Minimum requirement no. 2	<p>Dimmable lighting</p> <p><i>A. In new installation of public lighting systems and in complete replacement of lamps and fittings in existing public lighting systems along thoroughfares.</i></p> <p>The public lighting system must be dimmable.</p> <p><i>B. In new installation of public lighting systems and in complete replacement of lamps and fittings in public lighting systems in residential and living areas.</i></p> <p>The public lighting system must be technically suitable to be dimmed.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement to be included with this tender by the tenderer to confirm that tenderer complies with this requirement. 2. Specifications of the public lighting system (dimmer system, lamp type and PSD) provided by tenderer which demonstrate compliance.
Notes for purchaser	<p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. In the specification of the system in the tender. 2. No further verification.

¹ PSD means Pre-switching device

² PSD means Pre-switching device

Minimum requirement No. 3	Energy-efficient advertising lighting <i>In new installation and/or complete replacement of fittings and lamps with pre-switching device (PSD) for light mast advertising or commercial signposting.</i> The power of the lighting may not be greater than the target level listed in the following table. Targets for power consumption of light box adverts <table border="1"> <thead> <tr> <th>Dimensions</th> <th>Area</th> <th>Power presently</th> <th>Target power</th> <th>Saving</th> </tr> </thead> <tbody> <tr> <td>70 x 100 cm</td> <td>0.700 m²</td> <td>99 W</td> <td>30 W</td> <td>70%</td> </tr> <tr> <td>80 x 96 cm</td> <td>0.768 m²</td> <td>110 W</td> <td>36 W</td> <td>67%</td> </tr> <tr> <td>90 x 108 cm</td> <td>0.972 m²</td> <td>110 W</td> <td>39 W</td> <td>65%</td> </tr> <tr> <td>100 x 120 cm</td> <td>1.200 m²</td> <td>165 W</td> <td>45 W</td> <td>73%</td> </tr> <tr> <td>120 x 120 cm</td> <td>1.440 m²</td> <td>138 W</td> <td>60 W</td> <td>56%</td> </tr> </tbody> </table> <u>Means of proof:</u> <ol style="list-style-type: none"> Statement to be included with this tender by the tenderer to confirm that tenderer complies with this requirement. Specifications of the lighting system (fitting, lamp type and PSD) to be provided with this tender which demonstrate compliance. 	Dimensions	Area	Power presently	Target power	Saving	70 x 100 cm	0.700 m ²	99 W	30 W	70%	80 x 96 cm	0.768 m ²	110 W	36 W	67%	90 x 108 cm	0.972 m ²	110 W	39 W	65%	100 x 120 cm	1.200 m ²	165 W	45 W	73%	120 x 120 cm	1.440 m ²	138 W	60 W	56%
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2.2.3 Award criteria

Award criteria

Award criterion no.1	Sustainable design of the public lighting system <i>In design of public lighting:</i> The more energy-saving the public lighting system is than [X], the higher the tender will be evaluated. By energy-saving design is meant a public lighting system which in the utilisation stage consumes as little energy as possible. Assessment will take place based on the following elements: <ul style="list-style-type: none"> The energy consumption in the utilisation stage, expressed in kWh/year; The further the light pollution of the public lighting system is less than [X], the higher the tender will be evaluated. By light pollution is meant light emission upwards. Assessment will take place based on
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the light emission upwards per fitting, expressed in lux.

The **more sustainably** the public lighting system is manufactured, the higher the tender will be evaluated. By a sustainable public lighting system is meant a system which during manufacture and during its lifetime impacts the environment less than the reference system (appendix [X]). This part will be assessed on the following elements:

- The extent to which recycled raw materials are used during production: the higher the percentage, the better;
- Possibilities for re-use: the more, the better.

In the assessment of the three elements, the following will be considered:

- The technical reality content;
- Strength/solidity/lifetime of (the parts of) the system;
- Maintenance to be expected during the lifetime.

The tender may be evaluated for example as follows:

Weighting factors	Energy consumption in kWh/yr	Light emission upwards in lux (per fitting)	% recycled raw materials used in production	Possibilities for re-use
Reference	X	X	X	
Technical reality content	[X] [X] [X]			
Consequences for lifetime				
Consequences for maintenance and management				

Means of proof:

1. A description from which can be deduced the extent to which the criteria above (energy saving, light pollution and sustainability) are achieved, and how that happens.

Notes for purchaser

The contracting authority must itself further detail the aspects in this criterion.

You must yourself indicate the reference values for each part of the criterion or with a comparable public lighting system in which in any case the minimum requirements as listed in this document are

	<p>implemented. In the replacement of an existing situation, the energy consumption of the old situation may serve as reference and lower limit. Concerning the energy label, the minimum must be label D (see minimum requirement no 1). The more energy saving the installation, the higher the tender will be evaluated.</p> <p>For sustainable material usage, an objective assessment for parts is more difficult. Make use here for example of an assessment by an expert panel. Then you must indicate clearly in advance what the tenders will be assessed on by the panel.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. No further verification.
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Award criteria

Award criterion no.1	<p>Sustainable design of advertising lighting</p> <p><i>In design of advertising lighting.</i></p> <p>The more energy-efficient the advertising lighting is than [X], the higher the tender will be evaluated. By energy-saving design is meant advertising lighting which in the utilisation stage consumes as little energy as possible. Assessment will take place based on the following elements:</p> <ul style="list-style-type: none"> • The energy consumption in the utilisation stage, expressed in kWh/year; • <p>The more sustainably the advertising lighting is manufactured, the higher the tender will be evaluated. By sustainable advertising lighting is meant a system which during manufacture and during its lifetime impacts the environment less than the reference system (appendix [X]). This part will be assessed on the following elements:</p> <ul style="list-style-type: none"> • The extent to which recycled raw materials are used during production: the higher the percentage, the better; • Possibilities for re-use: the more, the better. <p>In the assessment of the two elements, the following will be considered:</p> <ul style="list-style-type: none"> • The technical reality content; • Strength/solidity/lifetime of (the parts of) the system; • Maintenance to be expected during the lifetime. <p>The tender may be evaluated for example as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Weighting Factors</th> <th style="text-align: center;">Energy consumption in kWh/yr</th> <th style="text-align: center;">% recycled raw materials used in the production</th> <th style="text-align: center;">Possibilities for re-use</th> <th></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Reference</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Technical reality content</td> <td style="text-align: center;">[X] [X]</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Weighting Factors	Energy consumption in kWh/yr	% recycled raw materials used in the production	Possibilities for re-use		Reference	X	X			Technical reality content	[X] [X]			
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Technical reality content	[X] [X]															

		[X]		
	Consequences for lifetime			
	Consequences for maintenance and management			
	<p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. A description from which can be deduced the extent to which the criteria above (energy saving and sustainability) are achieved, and how that happens. 			
Notes for purchaser	<p>The contracting authority must itself further detail the aspects in this criterion.</p> <p>Following the commission, the designer will be asked to quantify the energy consumption of the advertising lighting offered. In the tender, it will be sufficient to provide a description of the manner in which the energy consumption and material usage have been involved in the design.</p> <p>For the energy consumption for example a comparison may be made with a similar advertising lighting system in which in any event the minimum requirements as listed in this document are applied. In the replacement of an existing situation, the energy consumption of the old situation may serve as reference and lower limit.</p> <p>For sustainable material usage, an objective assessment for parts is more difficult. Make use here for example of an assessment by an expert panel. Then you must indicate clearly in advance what the tenders will be assessed on by the panel.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. No further verification. 			

2.2.4 Contract

The contract may be exploited prior to the execution by building in stimuli for sustainable execution. For example a bonus or discount which is dependent on the extent of the saving in energy consumption during the utilisation stage. Such conditions are particularly useful if the contract period is sufficiently long, for example for DBFM contracts.

No contract provisions have been formulated for this product group.

2.3 Utilisation stage (points for consideration)

Once the procurement stage has been concluded and a product or service has been purchased, there are opportunities for using the product in a sustainable manner. No specific points for consideration have been formulated for the utilisation stage of this product group.