



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

# Criteria for the sustainable public procurement of **Traffic Control Systems**

Version: 1.4

Date: 26th March 2010

Status: adopted

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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# Table of contents

1	Introduction.....	2
1.1	Potential.....	2
1.2	Definition of the product group .....	2
2	Sustainability in the procurement process .....	4
2.1	Preparatory stage (points for consideration) .....	4
2.2	Specification stage (criteria) .....	5
2.2.1	Supplier qualifications .....	6
2.2.2	Schedule of requirements .....	6
2.2.3	Award criteria .....	9
2.2.4	Contract .....	11
2.3	Utilisation stage (points for consideration) .....	11

# 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 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 Public Procurement ([www.agentschapnl.nl/sustainableprocurement](http://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 Traffic Control Systems product group, 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 Public Procurement [www.agentschapnl.nl/duurzaaminkopen/criteria](http://www.agentschapnl.nl/duurzaaminkopen/criteria), available in Dutch only.

## 1.1 Potential

The procurement of the design, building, maintenance and demolition of Traffic Control Systems forms an important part of the government tasks in the field of traffic and transport policy. In the Netherlands, there are around 5500<sup>1</sup> traffic control systems (in Dutch, VRIs), mainly on municipal roads. The Directorate General of Public Works and Water Management and the provinces together have around 800 traffic control systems under their management<sup>1</sup>. The number of traffic control systems managed by the water boards may be practically neglected.

The number of shipping signals is estimated at 30,000. The Directorate General of Public Works and Water Management is the largest user of traffic control systems – the shipping signals – on water, including on bridges and locks. The number of signals on the railway has not been considered in this product group. For the private principals – industrial estates, airports and seaports – it concerns relatively small numbers.

Government is a dominant player in this sector and has a great potential to influence the market.

## 1.2 Definition of the product group

The product group Traffic Control Systems (VRIs) includes the active control systems on the roads in the Netherlands for pedestrians, vehicles and cyclists and the shipping signals for waterways. Traffic Control Systems on roads form instruments for traffic management. The traffic management itself falls outside the scope of the product group Traffic Control Systems.

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.

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<sup>1</sup> Source: Traffic Control Systems Final Report (*Eindrapport Verkeers-Regel-Installaties*), ECN, July 2000

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:

<b>Subject</b>	<b>CPV code</b>	<b>Description</b>
Design and consultation on new works and reconstruction	71322500-6	Engineering-design services for traffic installations.
Construction of new works and reconstruction	34996100-6	Traffic lights.
	35262000-8	Crossing traffic control equipment
	45316200-7	Installation of signalling equipment
Implementation of management and maintenance	50232200-2	Traffic-signal maintenance services.
Demolition	45111100-9	Demolition work.
Shipping signals	34931500-7	Vessel traffic control equipment.

### **From policy to sustainable design and sustainable procurement of Traffic Control Systems**

According to current insights, CO<sub>2</sub> emissions and environmental impact are reduced when traffic can circulate at constant speed and vehicles do not accelerate, brake or remain stationary unnecessarily. It may for example be a policy goal to give public (bus) transport priority over ordinary road traffic. For this reason it is important to strive to keep the big picture always in sight and to come to a sustainable design for traffic circulation and then to a sustainable design of the traffic control system. The traffic and transport plan or mobility plan for a district or a whole municipality falls outside the scope of the product group Traffic Control Systems.

There are in this product group supplies (the actual traffic control systems), services (the design) and works (the design and construct or construct only) for new building, management and maintenance. There are different procurement forms such as Design only or Design and Construct, etc. The criteria included in the present document do not concern the steps prior to the procurement.

### **Railway signals and tram warning lights**

The signals used by Dutch Railways (*Nederlandse Spoorwegen*, including ProRail) are not included. Tram Warning Lights (TWL) are not included either.

### **Dynamic information provision**

On the State, provincial (including water board) and municipal roads, different types of active signalling and route indication are employed. This includes lit-up information signs, illuminated traffic signs and dynamic information provision (DIV). Into this come also the systems called DRIPs (Dynamic Route Information Panels), which may be separated into verge and vehicle DRIPs. Besides this there are information trucks and matrix signal indicators (90, 70, 50 km/h etc.). This signalling uses a lot of energy. For proper operation, heating may be used in the winter and cooling in the summer. For a sustainable design of these facilities, the criteria for sustainable design of a traffic control system may be applied. It should be borne in mind that safety and enabling traffic circulation are the primary objectives for these systems.

Integration and harmonisation with other directly-related product groups, such as Cables and Pipelines, Roads, Urban Architectural Design and Consultancy Services is still to be done.

## 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](http://www.agentschapnl.nl/sustainableprocurement).

### 2.1 Preparatory stage (points for consideration)

Every purchase or call for tender starts with drawing up the inventory of the needs of the internal or external customer. Sustainability can be incorporated into this stage by considering whether the purchase is truly necessary and whether a more sustainable alternative might be available. Specific points for consideration regarding procurement for the Traffic Control Systems product group are:

#### **From policy to initiative**

Quite often a call for tender is the consequence of a – sometimes protracted – preparation from policy to initiative to call for tender. After a choice has been made at policy level, for example to address traffic problems, the question is subsequently posed of how to solve this problem. Should the traffic circulation be modified, the existing infrastructure adapted or new infrastructure constructed? Once there is a decision for example about new infrastructure there are still the questions of capacity and route. All choices and decisions with a great impact on sustainability. The purchaser often has no influence on these choices. While those involved in the preparation have all the more. The realisation of sustainable projects thus begins with the inclusion of sustainability in the preparation and not only when works are put to tender.

The inclusion of sustainability in the preparation of projects is not yet usual practice. This may require additional policy from the government bodies concerned: policy which gives direction to the considerations and the making of choices. This is not detailed further in this document. By involving sustainability explicitly at all stages, sustainable calls for tender gain more content and a sustainable realisation at a higher level becomes possible.

#### **Initiative stage**

In considering possible conceptual solution directions for a certain problem, different alternatives may be lined up together and mutually compared on sustainability aspects.

A proper knowledge of the project environment is of great importance here. Which parties are involved, what are the preconditions and what qualities are present in the physical environment? Choices made are laid down in requirements and desires for further detailing in the design and call for tender.

Traffic control systems are closely linked to the traffic circulation policy of the road administrator. For the procurement team, it is of great importance to realise that each measure and every alteration in the traffic control systems may have consequences for traffic safety and mobility. We therefore recommend that all measures and amendments concerning traffic control systems are always presented to the road administrator's traffic experts.

## **Policy plan for existing traffic control systems**

Many procurements concern the execution of works on existing traffic control systems. The ambitions, assumptions and preconditions for management are often laid down in a policy plan. The policy plan thus forms an excellent basis in which to anchor sustainability. Any procurement of the policy plan falls outside the scope of this document.

There are criteria included in this document for the procurement of activities in management and maintenance and these come partially within other product groups. For the procurement of maintenance for existing Traffic Control Systems, it is possible to have the replacement of traffic lights, lamps and other components carried out by various suppliers. It must however be remembered that the responsibility for the system must lie straightforwardly with the system supplier in order to take advantage optimally of changes in the traffic situation.

Traffic Control Systems are complex systems which are designed as integrated systems by the system supplier. Interventions and alterations to parts of the system may have an influence on the operation of the entire system. We recommend that interventions and amendments to existing traffic control systems should be presented to the system supplier. Consequences to the system of the measures or amendments may then be assessed as a whole.

## **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 Traffic Control Systems. 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

application area	New construction and reconstruction of Traffic Control Systems			Existing Traffic Control Systems management and maintenance		
	design	design & construct	construct	design	design & construct	construct
Criterion						
Minimum requirements of Traffic Control Systems						
Dimming facility in control equipment	X	X	X	X	X	X
Energy-saving light sources	X	X	X	X	X	X
Energy-saving lamps in shipping signals	X	X	X	X	X	X
Award criteria						
<ul style="list-style-type: none"> <li>Sustainable design of Traffic control system</li> </ul>	X	X		X	X	
<ul style="list-style-type: none"> <li>Energy-saving light sources and control systems</li> </ul>		X	X		X	X

### 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

#### Minimum requirements

Minimum requirement No. 1	<p><b>Dimming facility in control device</b></p> <p>a) For <b>new installations</b> a control device with dimming facility must be used, according to section 2, paragraph 4 of the Traffic Light Regulation of 28 August 2001.</p> <p><u>Means of proof:</u></p> <p>a1. Enclose declaration from tenderer which demonstrates that tenderer complies with requirement.</p> <p>a2. Enclose specifications of the control device and dimming facility which demonstrate that this is complied with.</p> <p>b) For <b>existing Traffic Control Systems</b> a dimming facility must be used, if that is technically feasible without additional costs, and if the stop-light and lamp monitoring remain functional.</p>
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	<p><u>Verification of means of proof:</u></p> <p>b1. Enclose declaration from tenderer which demonstrates that tenderer complies with requirement.</p> <p>b2. Enclose specifications of the control device and dimming facility which demonstrate that this can be complied with, or justify why the dimming facility cannot be used.</p>
Notes for purchaser	<p>For new installation, the control device and light sources can be attuned with each other. The requirements with respect to dimming and stop-light and lamp monitoring can thus be fulfilled. The requirements for the light intensity of traffic lights are stipulated in the Traffic Lights Regulation of 28 August 2001, section 2, paragraph 5.</p> <p>Modification of an existing control device is costly. This requirement will therefore not be applicable in the ordinary maintenance situation.</p> <p><u>Verification of a) for new installation</u></p> <p>a1. In the specification of the system in the tender.</p> <p>a2. No further verification.</p> <p><u>Verification of b) for existing Traffic Control Systems</u></p> <p>b1. In the specification of the system in the tender.</p> <p>b2. No further verification if the dimming facility can be used. If no dimming facility can be used, verification of the justification.</p>

<p>Minimum requirement</p> <p>No. 2</p>	<p><b>Energy-saving light sources</b></p> <p>a) For a new installation or complete replacement of traffic control systems, class II light sources as defined in <i>Grensvlakdefinitie</i> ("Interface Definition") Issue 3-2, January 2004, from ASTRIN (Association of traffic industries in the Netherlands) must be installed.</p> <p><u>Means of proof</u></p> <p>a1. Enclose declaration from tenderer which demonstrates that tenderer complies with requirement.</p> <p>a2. Enclose specifications of the light sources, which demonstrate that this is complied with.</p> <p>b) For existing traffic control systems, class II light sources as defined in <i>Grensvlakdefinitie</i> ("Interface Definition") Issue 3-2, January 2004, from ASTRIN (Association of traffic industries in the Netherlands) must be installed, if the control device has the technical possibilities for this. The control device is suitable if it has a dimmer</p>
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	<p>facility and if the stop-light and lamp monitoring remain operational.</p> <p>If the control device is not suitable for the use of class II light sources, class I light sources may be installed, as defined in the <i>Grensvlakdefinitie</i> ("Interface Definition") from ASTRIN as mentioned above.</p> <p><u>Means of proof</u></p> <p>b1. Enclose declaration from tenderer which demonstrates that tenderer complies with requirement.</p> <p>b2. Enclose specifications of the light sources and the control device, which demonstrate that this is complied with and justify your choice if class I light sources are used.</p>
Notes for purchaser	<p>For existing traffic control systems, account must be taken of the stop-light monitoring and lamp monitoring. If this requires a greater power supply than that of the class II light sources, then a class I light source will have to be sufficient.</p> <p>Also consider that in using modern light sources, the light emission is much greater than that of traditional bulbs and a dimmer facility is in fact indispensable.</p> <p>The classification is laid down in the <i>Grensvlakdefinitie</i> ("Interface Definition"), a publication from ASTRIN (Association of traffic industries in the Netherlands) and adopted as product guideline for system suppliers. Because 90% of the system suppliers are members of ASTRIN, this is stipulated by them as a standard and is accepted by the market.</p> <p><u>Verification of a) for new installation or complete replacement</u></p> <p>a1. In the specification of the system in the tender.</p> <p>a2. No further verification.</p> <p><u>Verification of b) for existing systems</u></p> <p>b1. In the specification of the system in the tender and from any motivation.</p> <p>b2. No further verification.</p>

<p>Minimum requirement No. 3</p>	<p><b>Energy-saving lamps in shipping signals</b></p> <p>For new installations or complete replacement of shipping signals, LED2 lamps (or lamps with a comparable energy efficiency and lifetime, as defined in the specifications on <a href="http://www.led2.org">www.led2.org</a>) with two dimmed settings and a high efficiency dimmer transformer must be installed.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> <li>1. Enclose declaration from tenderer which demonstrates that tenderer complies with requirement.</li> <li>2. Enclose specifications of the lamps which demonstrate that this is complied with, for example by a KEMA hallmark.</li> </ol>
<p>Notes for purchaser</p>	<p>For more background information and technical specifications, see: <a href="http://www.led2.org">www.led2.org</a>.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> <li>1. In the specification of the system in the tender.</li> <li>2. No further verification.</li> </ol>

## 2.2.3 Award criteria

### Award criteria

<p>Award criterion No.1</p>	<p><b>Sustainable design of a Traffic control system</b></p> <p>The tenderer must detail in a plan of approach for the design of the Traffic Control System how he will achieve:</p> <ul style="list-style-type: none"> <li>- energy saving</li> <li>- sustainable material usage for a usage period of 10 years.</li> </ul> <p><i>Energy consumption</i></p> <p>A maximum energy consumption saving is envisaged in the utilisation stage of the work.</p> <p><i>Sustainable material usage</i></p> <p>An integral balance among the limitation of raw material consumption, energy consumption during manufacture, expected maintenance during lifetime, possibilities for re-use, impact resistance etc. will be aimed at.</p> <p>The more the energy consumption is restricted, the higher the plan will be evaluated.</p> <p>The less the environment is impacted by the material to be used,</p>
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	<p>the higher the plan will be evaluated.</p> <p>For this part, points will be awarded as follows: &lt;...&gt;</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> <li>1. The plan of approach.</li> </ol>
Notes for purchaser	<p>Following the commission, the designer will be asked to quantify the energy consumption of the traffic control system offered. In the tender, it will be sufficient to provide a description of the manner in which the energy consumption and material usage are involved in the design.</p> <p>You must yourself detail this criterion further by creating a point scale, taking account of the relative importance of this criterion.</p> <p>For the energy consumption for example a comparison may be made with a similar traffic control 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 a lower limit.</p> <p><u>Verification of means of proof</u></p> <ol style="list-style-type: none"> <li>1. The plan of approach will be assessed on completeness, reality content and the quality of the approach. Final check will take place on implementation and handover of the work.</li> </ol>

Award criterion No. 2	<p><b>Energy-saving light sources and control systems</b></p> <p>The less the energy used by the traffic control system (light sources and control devices), the more points will be awarded to the tender. The total energy consumption of the traffic control system will be considered in the assessment of the tenders.</p> <p>For this part, points will be awarded as follows: &lt;...&gt;</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> <li>1. Enclose the consumption specifications (from the suppliers) in kWh per year for the components.</li> </ol>
Notes for purchaser	<p>This criterion mainly concerns the differences in energy consumption between systems from different suppliers. In the choice among systems, the total energy consumption will be used as award criterion with a weighting factor.</p> <p>You must yourself detail this criterion further by creating a point scale, taking account of the relative importance of this criterion.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> <li>1. No further verification.</li> </ol>

#### **2.2.4 Contract**

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. Specific points for consideration for this product group are:

The most important gain for sustainability from a Traffic Control System during the utilisation stage lies in the periodic optimisation of the settings of the Traffic control system. The sustainability gain mainly lies in the best traffic circulation.