



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

Criteria for the Sustainable Public Procurement of **Hydraulic Engineering Constructions**

Version: 1.5

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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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 Hydraulic Engineering Constructions 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 Procurement www.agentschapnl.nl/duurzaaminkopen/criteria, available in Dutch only.

1.1 Definition of the product group

The product group Hydraulic Engineering Constructions includes hydraulic engineering or 'wet' projects in the civil engineering sector, which are realised on the border between land and water. This comprises the construction, improvement and maintenance of dikes and quays, harbours, waterways:

- Dry and wet soil transfer for the purposes of dike reinforcement, quay improvement works, river bed enlargement, etc.;
- Coast and bank works including the construction of sheet pile constructions, stone facing, rubble layers, planted banks etc.;
- Dredging works and water bed remediations;
- Hydraulic engineering constructions such as sluices, braking and guide constructions, mooring facilities and quay constructions in harbours.

The product group includes works, services and supplies.

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:

Part	CPV codes	Description
General	45220000-5	Civil engineering and constructional activities.
Dams		

Part	CPV codes	Description
Design and consultation on new works and reconstruction	71322400-5	Dam design services.
Construction of new works and reconstruction	45243000-2	-
	45247200-2	Constructional activities for dams and similar permanent constructions.
Design and consultancy on management and maintenance	45246410-0	Maintenance of high water barriers.
Implementation of management and maintenance	71631460-2	Dam inspection services.
Demolition	45111100-9	Demolition activities.
Water systems and waterways		
General	45240000-1	Hydraulic engineering activities.
Design and consultation on new works and reconstruction	-	-
Construction of new works and reconstruction	45247100-1	Constructional activities for waterways.
Design and consultancy on management and maintenance	-	-
Implementation of management and maintenance (incl. dredging)	63721300-2	Exploitation of waterways.
Demolition	45111100-9	Demolition activities.

This product group has significant relationships with other product groups within the thematic workgroup Building/Civil Engineering:

- Soil (product groups Ground Works, Site Preparation for Building and Remediation/Soil sanitation);
- Public Lighting and Traffic Control Systems;
- Surfacing;
- Pumping stations;
- Construction Works;
- Green spaces;
- Preservation works;
- Mobile equipment and Heavy-duty motor vehicles;
- Materials: wood/concrete.

In the development of the procurement criteria for the product group Hydraulic Engineering Constructions, where useful and necessary, the necessary cross-connections have been made with the product groups listed above.

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, many choices are made 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 sustainable realisation at a higher level becomes possible.

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 Hydraulic Engineering Constructions product group are:

For this product group, Hydraulic Engineering Constructions, it is true that particularly in the planning stage there is much sustainability gain to be made. For large infrastructural works there is an EIA procedure in which the obligation to develop the Most Environment-friendly Alternative is included. In this procedure the obligation to consider sustainability applies.

The majority of smaller works in hydraulic engineering however fall outside this. For these works it also applies that making the consequences of design choices explicit with respect to sustainability during the planning and design stages can provide much insight and may possibly influence decision-making on this. A SCBA (Social Cost-Benefit Analysis, e.g. OEI) may provide a handle on this. The depth of such an analysis must be attuned to the type of work. Besides this, established frameworks for sustainability considerations are missing in such systems. The objectivity, assessability and transparency of the considerations of sustainability are thus also an important attention point in this.

Ensuring sustainability in the project

This approach demands that at an early stage, even before the formal start of the procurement phase, the sustainability aspects of the project are considered within the procuring organisation. 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).

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In the sustainable design of hydraulic engineering constructions, certain 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 (GWW = Civil Engineering; see also sources in section 4.1):

- 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);
- In comparing cost aspects, employ the Total Costs of Ownership approach by which means the sustainability aspect will obtain (more) weight.

Besides ensuring sustainability in the process, there are opportunities to safeguard sustainability in the design, in the execution of works, in the usage phase or at the end of the lifetime. Below are several attention points as listed in the National Civil Engineering Sustainable Building Package. The attention points are not always specific to hydraulic engineering constructions, but there are reference points for the product group Hydraulic Engineering Constructions included in the measures concerned:

- Attune the hydraulic engineering construction to its future use (NP GWW 800);
- Harmonise the material choice and design with the envisaged lifetime (NP GWW 805);
- Restrict unnecessary use of materials (NP GWW 807);
- Use secondary materials or materials which can be re-used later (NP GWW 808);
- Limit the production of waste in construction, use and management (NP GWW 513);
- Impose the principle of multiple space usage (NP GWW 802);
- Aim for energy saving in civil engineering works (NP GWW 503);
- Employ alternative energy sources (NP GWW 504);
- Attune the hydraulic engineering construction with (environmental) values and spatial plans in the surroundings (NP 801);
- Restrict damage to landscape, natural and historico-cultural values (NP GWW 803);
- Compare different building methods (NP GWW 806);
- Prevent nuisance from vibration and noise (NP GWW 809 and 810);
- Limit damage to hydraulic engineering constructions (NP GWW 811);
- Restrict disruption of the surface and ground water system and the natural level and course of groundwater during the construction and use of works, and the natural quality of the groundwater in the construction and use of works; avoid contamination of the water system (NP GWW 201, 202, 203, 204 and 205);
- Prevent barrier effects for fauna when constructing civil works (NP GWW 205);
- Compare different building methods (NP GWW 806).

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 Hydraulic Engineering Constructions. 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.

More information on the various types of criteria and the various tender options can be found in the Sustainable Procurement Manual.

Overview of criteria

The criteria apply to new construction, reconstruction and also to the management and maintenance of existing hydraulic engineering constructions. Distinction is made in the table among the different forms of contract, such as design-only, design and construct, and construct-only.

Table 3.1 Overview of criteria for hydraulic engineering constructions

Area of application	Design	Construct	Design & construct	Manage & maintain	Demolition/Removal
Criterion					
Minimum requirements for Hydraulic engineering constructions					
Sustainable design, wooden construction	X	-	X	-	-
Sustainable design, steel construction	X	-	X	-	-
Processing/removal of substances	-	X	X	X	X

Area of application	Design	Construct	Design & construct	Manage & maintain	Demolition/Removal
Criterion					
released					
Award criteria					
Sustainable material usage	O	O	O	O	O
Closed soil balance	O	O	O	O	O
Contract provisions					
Management and maintenance plan	-	X	X	X	-
Other product groups					
Transport services	-	O	O	O	O
Mobile equipment					
Contracting out, mobile equipment					
Preservation works	O	O	O	O	-

X = include in this phase

- = do not include in this phase

O= optional

In the 'procurement' of hydraulic engineering constructions, you cannot generally comply merely by including the criteria for Hydraulic Engineering Constructions. In general, the simultaneous carrying out of ground works, the use of heavy vehicles or mobile equipment, the installation of cables and pipelines and the purchase of electricity will also need to be considered. The criteria for these product groups may be found on the website: www.agentschapnl.nl/sustainableprocurement.

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

<p>Minimum requirement no. 1</p>	<p>(For the design and detailed design of constructions with wood which are exposed to weather and wind)</p> <p>Sustainable design, wooden construction</p> <p>The design and design detailing must comply with the sustainability principles below.</p> <p>For constructions which are exposed to weather and wind:</p> <ul style="list-style-type: none"> • No use must be made of film-forming paint systems on wooden surfaces. • End grain of wood must be protected from moisture. • The construction must be designed so that no water or rainwater can lie. • In using a wooden surface against another surface a distance of at least 8 mm must be maintained between these surfaces. <p>For constructions which are exposed to soil and/or water:</p> <ul style="list-style-type: none"> • No wood in contact with the ground must be used in the construction. • Wood to XX cm above the water level must not be closed in. <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement to be included in this tender by the tenderer to confirm compliance with this minimum requirement. 2. A description of the way in which the design principles are complied with.
<p>Notes for purchaser</p>	<p>This minimum requirement is only to be used for simple design tasks. If the task concerns more complex construction works, an award criterion will offer a solution. For example, the number of points where water or rainwater can lie may be considered.</p> <p>The principles described above form part of the CUR report 213 'Sustainable detailing of wood in the civil engineering sector' (<i>Hout in de GWW-sector duurzaam detailleren</i>). This report may be ordered via the website: www.cur.nl. By detailing properly and with suitable wood types, constructions with a long lifetime may be made. General rules for proper detailing are given in the report.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. The description of the way in which the design principles are complied with. 2. No further verification.

<p>Minimum requirement no. 2</p>	<p><i>(For the design and detailed design of the steel construction)</i></p> <p>Sustainable design of steel construction</p> <p>The design and design detailing must comply with the following sustainability principles:</p> <ul style="list-style-type: none"> • The steel construction must be designed so that no water or rainwater can lie or dirt can build up. • All sharp edges in the steel construction must be rounded off. <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement to be included in this tender by the tenderer to confirm compliance with this minimum requirement.
<p>Notes for purchaser</p>	<p>This minimum requirement is only to be used for simple design tasks. If the task concerns more complex construction works, an award criterion will offer a solution. For example, the number of points where water or rainwater and dirt can lie may be considered.</p> <p>The principles listed in this criterion are described in NEN-EN-ISO 12944-3 (1998) Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 3: Design considerations (NEN, 1998).</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. No further verification during tendering.

<p>Minimum requirement no. 3</p>	<p><i>(For construct, design & construct, management & maintenance and removal)</i></p> <p>Processing/removal of released substances</p> <ol style="list-style-type: none"> 1. If stony waste is broken up, the breaking must take place according to BRL 2506. 2. Tar-containing asphalt (granulate) must be transported away to a processing and treatment establishment in the Netherlands, licensed on the grounds of the Environmental Management Act, for the thermal cleaning of the tar-containing material. 3. <i>(In the case of a temporary establishment, which does not come within the Environmental Management Act and the Activities Decree)</i> <p>Provisions must be made on the implementation site to store separately or otherwise transport away separately the different types of waste arising from the activities. Provisions must also be made on the implementation site for the separate storage of released secondary raw materials.</p>
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	<p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Declaration from the tenderer that he complies with this minimum requirement. <p><u>Further means of proof with regard to an aspect mentioned under point 1.</u></p> <ol style="list-style-type: none"> 2. A description of the means by which the tenderer complies with this requirement. If the tenderer or subcontractor possesses a KOMO product certificate 'BRL 2506 <i>beton en/of menggranulaat</i>' (concrete and/or mixed granulate) in the name of the tenderer or subcontractor, this requirement is fulfilled.
Notes for purchaser	<p><i>Explanation of point 2 of this criterion</i></p> <p>The purchaser is advised to employ CROW publication 210 '<i>Richtlijn omgaan met vrijkomend asfalt – Aandacht voor de teerproblematiek</i>' (Guideline for dealing with released asphalt – Attention to the tar problem).</p> <p><i>Explanation of point 3 of this criterion</i></p> <p>The part of the requirement concerning the separation of waste substances is already a legal requirement for most establishments, arising from the Environmental Management Act, but because temporary establishments do not fall under this, said requirement is therefore stipulated here explicitly.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. No further verification. <p><u>Further means of proof documents with regard to an aspect mentioned under point 1.</u></p> <ol style="list-style-type: none"> 2. A description of the way in which the granulate is processed, from which can be deduced whether this conforms to BRL 2506 concrete and/or mixed granulate. 3. A statement from the entity processing the granulate. 4. Check of the certificate on www.bouwkwaliteit.nl.

2.2.3 Award criteria

Award criteria

Award criterion no.1	<p><i>(For design, construct, design & construct, management & maintenance and removal)</i></p> <p>Sustainable material usage</p> <p>The lower the environmental impact – calculated using an environmental lifecycle analysis – is than [XX], the higher the tender will be evaluated. The LCA analysis must be conducted according to NEN 8006 and the harmonised method for the determination of environmental impact.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. An LCA according to NEN 8006.
Notes for purchaser	<p>The LCA instrument for civil engineering, DuboCalc, is expected to become available during the course of 2009.</p> <p>In applying the LCA method, it is necessary that the contracting authority supplies a reference.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. No further verification.

Award criterion no.2	<p><i>(For design, construct, design & construct, management & maintenance and removal)</i></p> <p>Soil balance</p> <p>The less the transport of soil, which is suitable as a secondary building material, occurs over the boundaries of a work, the higher the tender will be evaluated.</p> <p>This criterion will be evaluated as follows:</p> <p>The larger the proportion of soil released from the work (possibly in combination with neighbouring works) which is used within the work (in volume percentage/m³ or mass percentage/ton) the higher the tender will be evaluated.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. A description of the tenderer's soil stream plan.
Notes for purchaser	<p>In the award, a tender with a completely closed soil balance (released soil which is suitable as secondary building material is completely re-used) may for example be evaluated higher than a tender which does not have a completely closed soil balance.</p> <p>The purchaser will determine the unit to be used (m³ or tons)</p>

	<p>depending on the nature of the work.</p> <p>The purchaser must determine in advance with which neighbouring works exchange can take place.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. No further verification.
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2.2.4 Contract

<p>Contract provision No.2</p>	<p><i>(For construct, design & construct, management & maintenance)</i></p> <p>Management and maintenance plan</p> <p>At the handover of a hydraulic engineering construction, a management and maintenance plan must be supplied, in which are described the maintenance measures required to keep the hydraulic engineering construction in good order. The plan should describe the means of management and maintenance, necessary to maintain the sustainable aspects of the hydraulic engineering construction.</p> <p>The plan should consist in any case of the following sections:</p> <ul style="list-style-type: none"> • Description of the management measures to be taken into account with inspection intervals for a period of XX years, with associated instructions (at least describing inspection points, methods, estimated number of person-hours); • Description of the maintenance intervals to be taken into account for a period of XX years, with associated instructions (at least describing maintenance activities and necessary materials and an estimate of number of person-hours and any relationship with other activities for which for example excavation is necessary).
<p>Notes for purchaser</p>	<p>The sustainable aspects of a hydraulic engineering construction may be relevant for example to the maintenance and management of certain materials and installations. Thus, a hydraulic engineering construction made of a certain low-maintenance material may require a modified maintenance regime.</p> <p>If a change takes place such that a new management and maintenance plan is necessary, separate agreements must be made with the tenderer for this. Provisions for this may also be laid down in the contract.</p>

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:

- Sustainable management of dams for example by ecological management and grazing of grass coverings;
- Ecological management of nature-friendly banks (reed fringes, riparian zones, natural wetlands);
- Regular cleaning of preserved surfaces to realise optimum operation of the preservation.