



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

Criteria for the Sustainable Public Procurement of **Pumping Stations**

Version: 1.3

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).

For more information tel. +31 (0)88 602 93 00, duurzaaminkopen@agentschapnl.nl and www.agentschapnl.nl/sustainableprocurement.

Table of contents

1	Introduction.....	2
1.1	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.....	7
2.2.3	Award criteria.....	11
2.2.4	Contract	13
2.3	Utilisation stage (points for consideration)	14

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 Pumping Stations 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 Pumping Stations includes surface water and sewage pumping stations managed by government (water boards, Directorate-General for Public Works and Water Management, and municipalities). The design, building, renovation and demolition of pumping stations is contracted out to engineering bureaus and contractors so that government is a large purchaser in this product group. Important sustainability themes within the Pumping Stations product group are energy, material usage and biodiversity.

Complete information about the size of the budgets for pumping stations is not available. The budget for new building of pumping stations for water boards for 2008 comes to € 125 million for sewage pumping stations and € 100 million for polder pumping stations.

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:

71322000	Design and consultation on new works and reconstruction
71323200	Plant engineering design services
45220000	Engineering works and construction works
45350000	Mechanical installations
45300000	Building installation work

45232152	Pumping station construction work
31681200	Electric pumps
45111100-9	Demolition work

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 involved. 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 Pumping Stations product group are:

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).

In the sustainable design of pumping stations, certain conditions are of importance to a proper organisation and 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).

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 pumping stations, but there are reference points for the product group Pumping Stations included in the measures concerned:

- Avoid over- and under-dimensioning (NP GWW 501);
- Aim for energy saving in civil engineering works (NP GWW 503);
- Harmonise the design with future management and maintenance (NP GWW 505);
- Harmonise the material choice and design with the envisaged lifetime (NP GWW 509);
- 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);
- Limit pollution from water draining off (NP GWW 514);
- Restrict traffic nuisance during implementation and maintenance (NP GWW 515 and the manual *Slim reizen langs wegwerkzaamheden* ('Clever travelling past road works'), June 2007, Directorate-General for Public Works and Water Management;
- Restrict disruption of the surface and ground water system, the natural level, course and quality of the groundwater in the construction and use of works (NP GWW 201, 202, 203 and 204);
- Prevent barrier effects for fauna when constructing civil works (NP GWW 205);
- Attune the groundwork to the surroundings (NP GWW 400);
- Restrict damage to landscape, natural and historico-cultural values (NP GWW 401);
- Use secondary and reusable materials in ground works (NP GWW 403).

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

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 Pumping Stations. 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

The criteria apply to new construction and reconstruction of pumping stations as well as to the management and maintenance of existing pumping stations. 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 Pumping Stations

Area of application Criterion	Design	Construction	Design & construct	Management and maintenance	Demolition
Minimum requirements					
1. Energy efficiency of system	-	X	X	X	-
2. Energy efficiency of components	-	X	X	X	-
3. Lubricants	-	-	-	X	-
4. Processing/removal of stony substances	-	-	-	-	X
Award criteria					
1. Energy efficiency	O	O	O	O	-
2. Lubricants	-	-	-	O	-
Contract provision					
1. Management and maintenance plan	-	X	X	X	-
2. Energy efficiency	-	X	X	X	-

X = include in this phase

- = do not include in this phase

O= optional

In the 'procurement' of the product group Pumping Stations it is not generally sufficient merely to include the criteria for Pumping Stations. 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 hiring-in of external consultancy services and purchase of electricity will also need to be considered. The product group Pumping Stations may also form part of the product group Urban Architectural Design.

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

Minimum requirements

<p>Minimum requirement No. 1</p>	<p><i>(For new building or modification of a surface water or sewage pumping station)</i></p> <p>Energy efficiency of the system</p> <p>The system must have an energy efficiency of at least [X]% at operating point(s) [X] and a pumping head of [X] metres water column (mwc) for a period of [X] years.</p> <p>By the system should be understood:</p> <p>-</p> <p>[The contracting authority must fill in here which components are included in this call for tender, for example pump, electric motor, transmission and electrical system]</p> <p>[The contracting authority must enter the operating point(s) which have been determined based on the usage profile and add other relevant system characteristics]</p> <p>[The contracting authority should fill in the period within which the efficiency is to be guaranteed to avoid the efficiency indicated failing to be achieved in practice due for example to contamination. Guarantee measurements may be included in the contract].</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement from the tenderer that he complies with the requirement; 2. Statement of the efficiency by the tenderer, based on calculations, hydraulic modelling research, manufacturer's data and/or experience.
<p>Notes for purchaser</p>	<p>For determining the minimum efficiency X of the system, the contracting authority must assume best available technology. By 'best available technology' is meant here: 'the best available energy-saving technology and best energy-saving design solutions which can be used within current risk and reliability parameters'.</p> <p>If an EMVI (Most Economically Advantageous Tender) is opted for, this requirement may be linked to award criterion 1 in order to evaluate a higher efficiency during tendering. In place of efficiency, energy demand (for example kWh/1000m³) or energy costs (with previously determined tariffs) may be included here.</p> <p>The contracting authority must require the energy efficiency of the entire system at operating point(s) defined in advance. The operating points are determined based on the usage profile. For sewage pumping stations, these are often 'Dry Weather Rate' (DWR) [X] in m³/h for [X] hours/year, 'Wet Weather Rate' (WWR) during [X] hours/year and if necessary an increased DWR of [X] m³/h for [X] hours/year.</p> <p>Other system characteristics are the head (minimum/maximum)</p>

	<p>[mwc (metres water column)] and if present in a sewage pumping station the 'pressure pipework resistance' [mwc]. Requirements may also be included here with respect to reliability and availability.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. A document with a statement of the efficiency; 2. Check of the efficiency statement for completeness and reality content; 3. Check by a pump test or guarantee measurement.
--	---

<p>Minimum requirement No. 2</p>	<p>Energy efficiency of components</p> <ol style="list-style-type: none"> 1. <i>(if a pump is procured separately)</i> The hydraulic efficiency of the pump must be at least [X]% at operating point [X] m³/min and a static head of [X] mwc. 2. <i>(if an electric motor is procured separately)</i> The efficiency of the electric motor set up dry in a pump system, measured according to IEC 60034-2-1:2007-09, must be over 95%. For electric motors up to 90kW a class EFF1 motor will comply. 3. <i>(if a ventilation system is procured separately)</i> The ventilation system must at least comply with class SFP 2 according to EN 13779. <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement from the tenderer that he complies with the requirements; 2. Statement of the efficiency by the tenderer, based on calculations, hydraulic modelling research, manufacturer's data and/or experience.
<p>Notes for purchaser</p>	<p>Re 1) For the minimum efficiency, best available technology should be assumed (see minimum requirement 1). Moreover, the minimum efficiency must be greater than, or at least equal to, the efficiency of any pump to be replaced. For an EMVI, extra recognition may be given if the efficiency is higher than this minimum.</p> <p>The operating point of a pump is the head with associated flow for which are envisaged the most operating hours.</p> <p>Re 3) In the European standard for ventilation, EN 13779, categories are stipulated for the energy consumption of mechanical ventilation systems. The category is designated by SFP (Specific Fan Power). SFP 2 stands for a ventilation system energy consumption of 500 - 750 W/(m³/s). This designation means the energy consumption of the ventilation system including motor, fan and pipework system.</p>

	<p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. The document with a statement of the efficiency; 2. Check of the efficiency statement.
--	--

<p>Minimum requirement No. 3</p>	<p>Lubricants (lubricating oils and greases)</p> <p>Lubricating oils, (hydraulic) oils and greases must be easily biodegradable and non-toxic according to class II defined here.</p> <p>Oils and greases comply with the requirements of easy biodegradability and non-toxicity according to class II if:</p> <ol style="list-style-type: none"> a) the final biodegradability is over 60% according to OESO 301 B, C, D, F or over 70% according to OESO 301 A and E, or if the primary biodegradability is over 90% according to CEC-L-33-A-93. b) the acute aquatic toxicity (EC/LC50) is greater than 100 mg/L, according to both OECD 2.01 and OECD 2.02. c) If R sentences are applicable (included in the product safety sheet), then the product may not contain one, several or any combination of the following R sentences according to EC Directive 1999/45/EC: R39, R40, R42, R43, R45, R46, R48, R49, R60, R61, R62, R63, R64 or R68 <p><i>Products possessing 'Swedish Standard SS155434 or SS155470 Class A, B or C', 'NF Eco-label Blauer Engel RAL-UZ 79 or RAL-UZ 64', 'Nordic Swan 4.4' or 'European Eco-label' comply in any event with the requirements of class II defined here.</i></p> <p>A maintenance plan must be supplied on handover. This must contain at least a description of the maintenance intervals to be observed, with associated instructions.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement from the tenderer that he complies with this minimum requirement; 2. A statement of the oils to be used with brand and type names and the amounts to be used in performance of the contract and any quality marks.
<p>Notes for purchaser</p>	<p>A list of oils and greases may be found on www.senternovem.nl/mia. The hydraulic oils featured on the VAMIL list all comply with the requirements of the European Eco-label; the greases comply at least with the requirements of the Blauer Engel (and sometimes also with those of the European Eco-label).</p> <p>Current lists of products may be found on European Eco-label: www.eco-label.com, Nordic Swan: www.svanen.nu/eng, Swedish Standard: www.sp.se/km/grease and www.sp.se/km/hydraul, Blauer Engel: http://www.blauer-engel.de.</p>

	<p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. Certificates for the quality marks mentioned or a declaration from certifying body; 2. Check of the list of oils to be used; if necessary, request a list of all main ingredients (each substance making up more than 5 per cent by weight of the oil or grease), the names of these substances and where they are to be used, the unique European Eines or Elincs identification numbers of these substances and the concentrations in which they will be used; the product safety sheet (according to Directive 91/115/EC) and the product safety sheets for each main ingredient (according to Directives 91/115/EC and 67/548/EC); measurement reports on the degradability and toxicity according to the standards mentioned or comparable ones
--	--

<p>Minimum requirement No. 4</p>	<p>Processing/removal of stony substances according to BRL 2506</p> <p>If stony substances are broken up, the breaking must take place according to BRL 2506.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement from the tenderer that he complies with this minimum requirement. 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.
<p>Notes for purchaser</p>	<p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. No further verification; 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

<p>Award criterion No.1</p>	<p>Energy efficiency</p> <p>The more the system efficiency of the pumping station exceeds the efficiency required in minimum requirement no. 1, the higher the tender will be evaluated.</p> <p>The tender will be evaluated as follows: <to be completed further by the contracting authority>.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Declaration of the efficiency by the tenderer; 2. Statement of the efficiency by the tenderer, based on calculations, hydraulic modelling research and/or experience.
<p>Notes for purchaser</p>	<p>More information on the implementation of the evaluation system may be found in various manuals about for example "award on value" from CROW (information and technology centre for transport and infrastructure).</p> <p>To further detail the evaluation of the energy consumption, use may be made of comparable pumping stations. There may be a standard reference design available, or an energy level may be determined in a pre-investigation.</p> <p>In the replacement of an existing situation, the energy consumption of the old situation may serve as reference.</p> <p>A guarantee measurement on handover may be included in the contract.</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. A document with a statement of the efficiency; 2. Check of the efficiency statement for completeness and reality content.

<p>Award criterion No.2</p>	<p>Lubricants</p> <p>If the (hydraulic) oils, lubricating oils and greases to be used are easily biodegradable and non-toxic according to class I defined here, the tender will be evaluated more highly as follows: <to be completed further by the contracting authority>.</p> <p>Oils and greases comply with the requirements of biodegradability and non-toxicity according to class I:</p> <ol style="list-style-type: none"> a) if they comply with the requirements defined in minimum requirement 3 for class II <i>and</i>
---------------------------------	---

	<p>b) they have at least the following content of carbon originating from a renewable source (so originating from vegetable or animal fats):</p> <ul style="list-style-type: none"> - 50% (m/m) for hydraulic oils - 45% (m/m) for greases - 70% (m/m) for total loss lubricants <p><i>Products in possession of a 'European Eco-label', 'Swedish Standard SS 155470 class A for greases', 'Nordic Swan 4.4' or equivalent, comply in any event with the requirements of class I.</i></p> <p>A maintenance plan must be supplied on handover. This must contain at least a description of the maintenance intervals to be observed, with associated instructions.</p> <p><u>Means of proof:</u></p> <ol style="list-style-type: none"> 1. Statement from the tenderer that he complies with this minimum requirement. 2. A statement of the oils to be used with brand and type names and the amounts to be used in performance of the contract.
Notes for purchaser	<p>A list of oils and greases may be found on www.agentschapnl.nl/mia. The hydraulic oils featured on the VAMIL list all comply with the requirements of the European Eco-label; the greases comply at least with the requirements of the Blauer Engel (and sometimes also with those of the European Eco-label).</p> <p>Current lists of products may be found on European Eco-label: www.eco-label.com, Nordic Swan: www.svanen.nu/eng, Swedish Standard: www.sp.se/km/grease and www.sp.se/km/hydraul..</p> <p><u>Verification of means of proof:</u></p> <ol style="list-style-type: none"> 1. Certificates for the quality marks mentioned or a declaration from certifying body; 2. Check of the list of oils to be used; if necessary, request a list of all main ingredients (each substance making up more than 5 per cent by weight of the oil or grease), the names of these substances and where they are to be used, the unique European Einecs or Elincs identification numbers of these substances and the concentrations in which they will be used; the product safety sheet (according to Directive 91/115/EC) and the product safety sheets for each main ingredient (according to Directives 91/115/EC and 67/548/EC); measurement reports on the degradability and toxicity according to the standards mentioned or comparable ones.

2.2.4 Contract

Contract provisions

<p>Contract provision No.1</p>	<p>Management and maintenance plan</p> <p>At the handover of the pumping station, a management and maintenance plan must be supplied, in which are described the maintenance measures required to keep the pumping station in good order. The plan should describe the means of management and maintenance, necessary to maintain the sustainable aspects of the pumping station. [to be completed further by the purchaser]</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 the pumping station may be relevant for example to the maintenance and management of certain materials and installations. Thus, a pumping station featuring a certain low-maintenance material may require a modified maintenance regime.</p> <p>If a change takes place such that a new maintenance and management 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>

<p>Contract provision no.2</p>	<p>Energy efficiency</p> <p>On handover, the efficiency of the pump + electric motors + (if present) frequency regulator will be measured according to method ISO 9906. If it proves that the efficiency measured comes out lower than indicated in the tender, the supplying party will pay a penalty [X] for each percentage point the efficiency is lower.</p>
<p>Notes for purchaser</p>	<p>It is normal to include efficiency measurements in pumping station contracts and to link a bonus/penalty clause with these. The level of the penalty is generally related to the evaluation in the award. These penalties may thus be employed strategically to ensure that the tenderer employs realistic values.</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.

No specific points for consideration have been formulated for this product group.