

# SUMMARY OF METHODOLOGY

## **OBJECTIVE OF THE STUDY**

The main objective of the study "Collection of statistical information on Green Public Procurement in the EU" (conducted by PricewaterhouseCoopers in cooperation with Significant and Ecofys) is to develop and implement a methodology for measuring Green Public Procurement in the EU. There are three sub-objectives:

1. to develop a suitable methodology for measuring quantitative levels of GPP;
2. to devise a suitable methodology for measuring CO<sub>2</sub> and the financial impact of GPP;
3. to measure the current level of GPP in the seven best performing Member States by implementing the methodologies developed in those Member States

The study describes the methodology that has been developed. It gives insight into how the level of GPP is calculated, and sets out the definitions used and criteria applied. It also includes a detailed description of the instruments (population definition, sample selection, methods of data collection) used to implement this methodology by way of a survey in the seven Member States. The survey ran from the beginning of June 2008 until the end of August 2008.

## **POPULATION AND SAMPLING METHODS**

Population is defined for each of the seven participating Member States. A distinction is made between central government and non-central government entities. Within the latter category, a further distinction is made between regional and local government entities, nationwide local and regional bodies and semi-public entities.

The aim is to make statistical statements with an acceptable precision level. This precision level is a measure of the level of certainty of the outcomes of this study. It is defined as the width of the confidence interval of the percentage of the core/comprehensive level of GPP. The precision level depends on the following variables:

- the number of institutions within the Member State (population size);
- the sample size;
- the expected percentage of the core/comprehensive level of GPP;
- the expected response rate.

Using a *desired* precision level of 20%, the sample size can be determined as a function of the above variables. Furthermore, by changing the expected response rate while keeping the sample size fixed, three scenarios can be drawn for the *expected* precision levels: a base scenario, an optimistic scenario and a pessimistic scenario.

## **DATA COLLECTION**

Several methods can be used to measure indicators of GPP (main possible methods: analysis of tender documents/contracts; digital questionnaires; tender database analysis). The instrument used to collect the data for this study is an online questionnaire. The questionnaire was sent to a contact database including 2907 contracting authorities in the seven participating Member States. These contacts were identified through (a) the personal network of the research team within each of the seven Member States; (b) the national purchasing associations; (c) GPP contact databases; and (d) the Tender Electronic Daily (TED) database.

The questionnaire consisted of three sections: A, B and C. Section A covered general questions on the respondent and his organisation. Section B included questions concerning environmental policy, procurement policy and the implementation of green procurement in the organisation. The answers to these qualitative questions give information on the relationship between the behaviour and the results of respondents. Section C of the questionnaire contained questions about the use of green criteria (based on the GPP training toolkit) within the most recent procurement contract. Section C also contained questions concerning the total amount of money an organisation spent on a product group during the last fiscal year.

### **SELECTION OF PRODUCT GROUPS AND RELATED PRODUCT TYPES**

The European Commission has identified ten product groups that are the most suitable for greening under Green Public Procurement. This is based on their importance in terms of financial and environmental impact, scope for improvement, example-setting function, availability of criteria and political sensitivity. They include the following product groups: cleaning products & services; construction; electricity; catering & food; gardening; office IT equipment; copying & graphic paper; textiles; transport; and furniture. For each of these product groups, the level of application of green criteria (core = compliant with most important environmental criteria and comprehensive = compliant, in addition, with more advanced environmental criteria) in public purchasing is measured.

The product groups/services on which the study focuses are the same as those developed in the EU GPP Training Toolkit. For each product group a **representative product type** was identified to represent the overall product group. The reason for this is that most product groups cover a great variety of products. If no pre-selection is made, each respondent might come up with different product types for each product group.

The selection of representative product types per product group/service is based on three criteria:

1. relevance of the product type for purchasing entities;
2. characteristics of the representative product type being demonstrative for other products in the same product group;
3. availability of relevant data for indicators 1 & 2 (green criteria) and indicators 3 & 4 (CO<sub>2</sub> and financial impact) for that product type.

Based on these criteria, the following product types per product group were selected:

<b>NO</b>	<b>PRODUCT GROUP</b>	<b>PRODUCT TYPE</b>
1.	Cleaning products & services	Cleaning services (including cleaning products)
2.	Construction	New buildings & offices
3.	Electricity	Electricity
4.	Catering & food	Catering services (including food)
5.	Gardening	Gardening services and machinery
6.	Office IT equipment	Computers (desktops & laptops) and monitors
7.	Paper	Copying & graphic paper
8.	Textiles	Clothing
9.	Transport	Passenger cars and light duty vehicles
10.	Furniture	Office furniture

## SELECTION OF CORE AND COMPREHENSIVE GPP CRITERIA

The Commission has developed a series of core and comprehensive GPP criteria for the 10 product and service groups selected. The criteria were selected on a life cycle basis, covering raw materials, production process, product design, use and disposal phase. Core criteria address the most important environmental aspects and should be relatively easy to apply by all contracting authorities; comprehensive criteria address, in addition, more advanced environmental aspects. Monitoring of targets will be based on compliance with core GPP criteria; the comprehensive criteria have been established to push the market towards ever better performing environmental products and services and can be used by more advanced contracting authorities.

Since the GPP toolkit criteria were not yet publicly available at the time of conducting the survey, the criteria used for the purpose of the study are not strictly copy/pasted from the toolkit criteria, but broadly based on these criteria. For the sake of completeness, respondents were also asked whether the product or service complies with the criteria of an ecolabel. For future monitoring, the questionnaire would need to relate directly to all specific toolkit criteria.

	PRODUCT GROUP	PRODUCT	CORE CRITERIA	COMPREHENSIVE CRITERIA
1.	Cleaning products & services	Cleaning services (including cleaning products)	<ul style="list-style-type: none"> <li>Use of cleaning products without hazardous substances</li> </ul>	<ul style="list-style-type: none"> <li>Training of employees</li> <li>Use of reusable microfibre cloths and/or dry-cleaning techniques</li> </ul>
2.	Construction	New buildings & offices	<ul style="list-style-type: none"> <li>Consideration of energy-saving measures in design and usage phase of building                             <ul style="list-style-type: none"> <li>Water-saving technologies in kitchen and sanitary facilities</li> <li>Use of materials without hazardous substances</li> <li>Use of timber from legal sources</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Use of localised renewable energy sources</li> </ul>
3.	Electricity	Electricity	<ul style="list-style-type: none"> <li>50% or higher electricity from renewable energy sources</li> </ul>	<ul style="list-style-type: none"> <li>100% electricity from renewable energy sources</li> </ul>
4.	Catering & food	Catering services (including food)	<ul style="list-style-type: none"> <li>Organic production of food products                             <ul style="list-style-type: none"> <li>Use of seasonal fruit, vegetables and fish</li> </ul> </li> </ul>	
5.	Gardening	Gardening services and machinery	<ul style="list-style-type: none"> <li>Fuel type use of gardening machinery                             <ul style="list-style-type: none"> <li>Use of soil improvers without peat and sewage sludge</li> </ul> </li> </ul>	*
6.	Office IT equipment	Computers (desktops & laptops) and monitors	<ul style="list-style-type: none"> <li>Energy star standards</li> <li>Accessibility and changeability of memory, hard disks and/or CD/DVD drives</li> </ul>	*
7.	Paper	Copying & graphic paper	<ul style="list-style-type: none"> <li>Production from recovered paper fibres                             <ul style="list-style-type: none"> <li>Use of ECF/TCF paper</li> <li>Pulp production from sustainably managed forests for paper based</li> </ul> </li> </ul>	*

			on virgin fibres	
8.	Textiles	Clothing	<ul style="list-style-type: none"> <li>• Öko-Tex Standard 100</li> </ul>	*
9.	Transport	Passenger cars and light duty vehicles	<ul style="list-style-type: none"> <li>• Maximum CO<sub>2</sub> emissions per vehicle segment</li> <li>• Euro 5 standard</li> </ul>	
10.	Furniture	Office furniture	<ul style="list-style-type: none"> <li>• Use of wood from legally sourced timber and sustainably managed forests</li> </ul>	

\* For these product groups no comprehensive criteria were included in the questionnaire, but the following labels and standards filled in by the respondents have been classified as comprehensive: EU Ecolabel (all), Blaue Engel and Nordic Swan (Office IT equipment and Paper), TCO 05 (Office IT equipment).

## **INDICATORS AND CALCULATING METHODS FOR MEASURING THE QUANTITATIVE LEVEL OF GPP**

This study aims to collect data on green public procurement from 2006 and 2007. It focuses on public, semi-public, central and decentral (i.e. regional and local) institutions. The contracting authority is asked to refer to the most recent contract, as being representative for all purchases within that product group over the last two years. In addition, the contracting authority is asked to provide the total annual value of contracts (€) within each of the ten priority product groups. As a result, if the most recent contract is considered as 'core green' or 'comprehensive green', then 100% of the total annual value is considered 'core green' or 'comprehensive green'. The reverse also holds true, i.e. a 'non-green' contract results in a 'non-green' total annual value.

### **Indicator 1: % GPP of total public procurement, in terms of monetary value**

This indicator gives the percentage of the amount spent on green public procurement contracts, compared to the total amount spent on public procurement contracts. Apart from green and non-green, a distinction is made between two levels of green based on core and comprehensive criteria. The study focuses on green criteria that were included in contracts (actual purchase), and not just in tender documents (intention). The GPP toolkit criteria include – for both core and comprehensive levels – technical specifications (minimum criteria that all bids need to meet), award criteria (criteria that will be taken into account by the contracting authority when choosing the bid providing the best value for money) and contract performance clauses (conditions related to the execution of the contract). The criteria used in this study cover all three types. It should be noted that even though a contracting authority would include green award criteria, the outcome of the procedure may not in all cases lead to the purchase of products complying with the award criteria.

### **Indicator 2: % GPP of total public procurement, in terms of number of contracts**

This indicator gives the percentage of the number of green public procurement contracts, compared to the total number of public procurement contracts. To measure the number of actual green purchases, the number of contracts – not tenders – is used. This means that every completed questionnaire will be counted as a 'contract' within the product group concerned. Depending on the criteria included, a certain contract will be indicated as 'non-green', 'core green' or 'comprehensive green'.

To arrive at an average GPP per country, the percentages per product group have been combined into one weighted percentage of comprehensive/core level contracts covering all ten product groups. When doing so, the weightings applied to the different product groups were based on the proportion of each product group within the total amount of purchasing (larger product groups outweighing the smaller ones). Indicator 2 has been calculated by dividing the total number of comprehensive and core level contracts in the sample by the total number of contracts (for a product group). As with indicator 1, the percentages per product group have been combined into one weighted percentage for all ten product groups. To do this, the weightings of the different product groups are based on how many times a product group has been filled in by the sample population per country.

## INDICATORS AND CALCULATING METHODS FOR MEASURING THE IMPACT OF GPP

### Indicator 3: % environmental impact of GPP, in terms of CO<sub>2</sub> emissions

This indicator gives the percentage of the environmental impact of green public procurement in terms of CO<sub>2</sub> emissions, compared to the impact of non-green public procurement. The CO<sub>2</sub> ratio determines the CO<sub>2</sub> impact of GPP per functional unit of a product group. An effective way of exploring the CO<sub>2</sub> impact of products and services is by using a Life Cycle Analysis (LCA). An LCA addresses CO<sub>2</sub> impacts throughout a product's life cycle (raw material, production process, use phase, disposal). The various life cycle phases of a product have been taken into account when seeking to identify the most relevant criteria (in terms of CO<sub>2</sub> impact) for each product group. It should be noted, however, that the final selection of criteria used for this part of the study might not always be related to the product's life cycle phase with the most CO<sub>2</sub> impact because of a lack of available data and time.

For catering and food, gardening, office IT equipment, textiles and transport no distinction was made between core and comprehensive levels (because, from a CO<sub>2</sub> perspective, there is no difference between both levels of GPP criteria selected). For furniture the CO<sub>2</sub> impact was not calculated since it was found that reliable CO<sub>2</sub> data were not available concerning compliance with the criteria included in the questionnaire.

	PRODUCT GROUP	LCA-relevant phase	Most relevant CO <sub>2</sub> Criterion /criteria	CO <sub>2</sub> / functional unit
1.	Cleaning products and <i>cleaningservices</i>	usage	<b>compr</b> use of microfibre cloths	kg CO <sub>2</sub> / m2 floor cleaning
2.	Construction - <i>new buildings &amp; offices</i>	usage	<b>core</b> energy efficiency of a building <b>compr</b> presence of localised renewable energy sources (L-RES) in buildings	kg CO <sub>2</sub> / building
3.	Electricity - <i>electricity</i>	production	<b>core</b> 50% use of RES-E <b>compr</b> 100% use of RES-E	kg CO <sub>2</sub> / kWh
4.	Catering and food - <i>catering services</i>	raw material acquisition	<b>core / compr</b> organic production of food	kg CO <sub>2</sub> / lunch prepared
5.	Gardening - <i>gardening services and machinery</i>	usage	<b>core / compr</b> use of peat	kg CO <sub>2</sub> / m2 gardening services
6.	Office IT equipment - <i>computers (desktops&amp;</i>	usage	<b>core / compr</b> energy star standards	kg CO <sub>2</sub> / computer

	<i>laptops) and monitors</i>			
7.	Paper - <i>copying &amp; graphic paper</i>	raw material acquisition and production	<b>core</b> <u>paper from recovered paper fibres</u> paper from 100% recycled fibres <u>paper from virgin fibres</u> fibres from sustainably managed forests <b>compr</b> <u>paper from recovered paper fibres</u> EU Ecolabel standards <u>paper from virgin fibres</u> <u>EU Ecolabel standards</u>	kg CO <sub>2</sub> / kg paper
8.	Textiles - <i>clothing</i>	raw material acquisition	<b>core / compr</b> use of organic cotton	kg CO <sub>2</sub> / kg textile produced
9.	Transport - <i>passenger cars &amp; light duty vehicles</i>	usage road tax fuel costs maintenance costs	<b>core / compr</b> CO <sub>2</sub> emissions of a vehicle	kg CO <sub>2</sub> / vehicle

#### Indicator 4: % financial impact of GPP, in terms of product Life Cycle Costs

This indicator gives the percentage of the financial impact of green public procurement compared to the financial impact of non-green public procurement. The Life Cycle Costs (LCC) can be grouped into three main categories:

1. purchasing and installation costs;
2. operating costs;
3. disposal costs.

LCC deals with costs whereas LCA addresses environmental impacts. The viewpoint of the analysis is also different. In an LCA, the viewpoint is the product itself. In an LCC, on the other hand, the viewpoint of the analysis is the viewpoint of the user of a product. An LCC takes only those costs into account that can directly be attributed to the user of a product.

The financial impact of GPP is calculated by comparing the price of a green product with that of a non-green product, in all stages of the user life cycle. For every relevant cost element the so-called cost ratios (i.e. the ratio of costs of a green product to the costs of a non-green product) are determined. The ratios are calculated for the core level of GPP and, where applicable, the comprehensive level of GPP.

	PRODUCT GROUP	LCC-RELEVANT COSTS
1.	Cleaning products and services - <i>cleaning services</i>	Labour costs Cleaning products Other costs
2.	Construction - <i>new buildings &amp; offices</i>	Investment cost Costs for heating Costs for electricity use Costs for water use Maintenance costs Disposal costs
3.	Electricity - <i>electricity</i>	Purchase price
4.	Catering and food - <i>catering services</i>	Labour costs Procurement of food Other costs (e.g. kitchen equipment)

		Management fee
5.	Gardening - <i>gardening services and machinery</i>	Labour costs Transport costs Machinery costs Other material costs Procured matter (soil improvers) Other procured matter
6.	Office IT equipment - <i>computers (desktops &amp; laptops) and monitors</i>	Purchase price Electricity use Maintenance costs
7.	Paper - <i>copying &amp; graphic paper</i>	Purchase price
8.	Textiles - <i>clothing</i>	Purchase price
9.	Transport - <i>passenger cars &amp; light duty vehicles</i>	Purchase price Road tax Fuel costs Maintenance costs
10.	Furniture – <i>office furniture</i>	Purchase price

## RESULTS

The results of this study refer to the seven best performing Member States (Austria, Denmark, Finland, Germany, the Netherlands, Sweden and the United Kingdom). Known as the Green 7, these Member States are currently implementing far more elements of GPP than the other twenty.

The indicative target set for the European Member States is 50% GPP as from 2010. So far, efforts undertaken by the Green 7 have led to an average overall level for all countries of 45% GPP of the total procurement value (indicator 1) and 55% GPP of the total amount of contracts (indicator 2). At country level, indicator 1 shows less variety between countries than indicator 2. On indicator 1 United Kingdom\* is the best performing country, scoring 75% on GPP, while the Netherlands scores lowest with 27%. On indicator 2 Austria performs best, with 62%, and Germany comes last in line, with 46%.

Overall, electricity, paper, office IT and furniture are the product groups where GPP is most practised; construction, gardening and transport are the lowest-scoring product groups. The levels of compliance with comprehensive green criteria are highest within the product groups of cleaning and paper.

By buying green products and services, their efforts lead to an average reduction of 25% of CO<sub>2</sub> emissions. Furthermore, it was found that buying 'green' has led to an average decrease in costs of 1%, taking into account the Life Cycle Costs (LCC) of a product or service.

*\*There are two interesting observations concerning the UK: (1) the level of GPP for construction is high compared to other countries and (2) the level of GPP differs a lot between indicator 1 and indicator 2. This is down to the fact that one respondent in the UK said he had spent a huge amount of money on construction, using comprehensive criteria. The figures have been verified with the organisation, which turned out to have embarked on a major capital rebuild programme. As a result, the organisation spent a substantial amount of money on various construction projects. This case clearly shows that it is important to measure both indicators in order to get a balanced view of the actual GPP situation in a given country: indicator 1 (based on procurement value) and indicator 2 (based on the number of contracts).*

*From an environmental point of view, indicator 1 makes most sense: a huge building project naturally has a huge environmental impact. Therefore, if green criteria are applied, this should be reflected in the overall figures. On the other hand, because of this one project, it might seem that the UK is already very much ahead concerning GPP, while this may only be based on 1 organisation distorting the figure. For this reason, indicator 2 is necessary as a complementary indicator. In conclusion, both indicators are equally important to measure the level of GPP in a certain country. Indicator 1 is more relevant from an environmental point of view, while indicator 2 is more appropriate in terms of the general implementation of GPP in a country (the change in mentality of public purchasers).*