PwC Sustainability

Collection of statistical information on Green Public Procurement in the EU

Report on data collection results

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By PricewaterhouseCoopers, Significant and Ecofys
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Management summary

Background

For the achievement of sustainable development, changes in production and consumption patterns are crucial. The European public service spends approximately 16% of European Union's Gross National Product on purchasing a large variety of products. By taking into account environmental criteria in its procurement procedures, contracting authorities promote modes of production that are more environmentally friendly and stimulate the supply of 'green' goods and services.

In the renewed Sustainable Development Strategy adopted in 2006, the leaders of the European Union (EU) have set forth a target for Green Public Procurement (GPP), stating that, by the year 2008, the average level of GPP should be at the current level of GPP in the best performing Member States. This target has been made more specific in a Commission's Communication adopted on 16 July 2008, in which the Commission proposes a 50% target for each Member State to be reached as from 2010. In September 2008, the European Council called upon the Commission to develop a practical evaluation methodology to measure progress made by 2010 and thereafter. This study, performed in 2008 by PricewaterhouseCoopers, Significant and Ecofys, contributes to this need.

Objective and scope

The main objective of this study is to monitor the current level of GPP in the seven best performing Member States by developing and implementing methodologies for:

1 Measuring quantitative levels of GPP (numbers and value of "green" contracts as compared to overall number and value of public procurement contracts)
2 Measuring the CO_2 and financial impact of GPP
3 Monitoring GPP in the Member States

This report presents the levels and impact of GPP measured in Austria, Denmark, Finland, Germany, The Netherlands, Sweden and the United Kingdom ('Green-7') in 2006/2007. The results are based on a digital questionnaire amongst 2907 contracting authorities in these Member States. The overall response was 1105 (38%).

For this study, a selection was made of ten product groups frequently procured by public institutions. Respondents were asked to indicate whether their most recently concluded purchasing contracts comply with certain 'green criteria'. These criteria are linked to the key environmental impacts of a product and are divided into 'core green' (addressing the most significant environmental impacts) and 'comprehensive green' (best environmental products).

Current levels of GPP

In 2006/2007, efforts undertaken by the Green-7 have lead to an average overall level of 45% 'green' of the total procurement value (indicator 1) and 55% 'green' of the total number of contracts (indicator 2). On indicator 1 the UK is the best performing country, scoring a percentage of 74% on GPP, while the Netherlands scores lowest with 26%. On indicator 2 Austria performs best with 62% and Germany comes last in line with 46%. Differences in percentages between the indicators can be explained by the fact that within indicator 1 a high value contract is of greater weight than a low value contract.

Figure 1: Overall scores on indicator 1

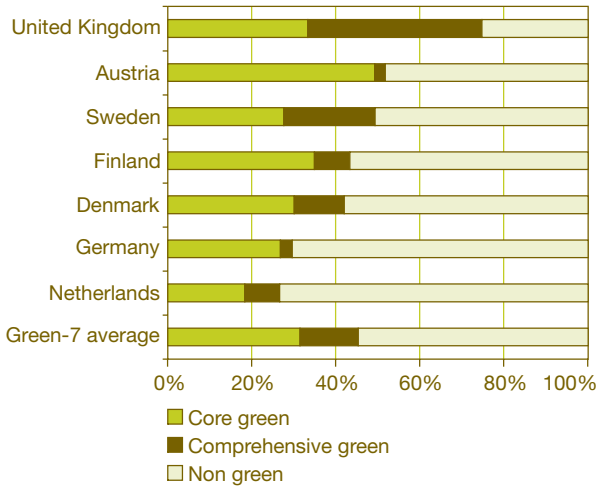
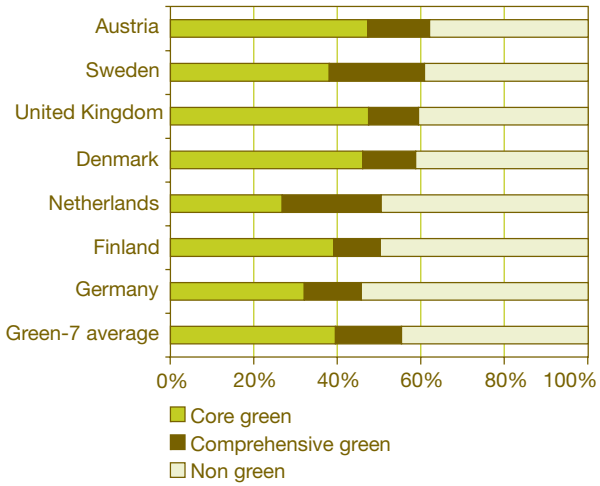


Figure 2: Overall scores on indicator 2



Within most countries a wide difference is shown on the level of GPP between the ten product groups. Overall electricity, office IT and furniture attain the highest scores in 2006/2007; construction, gardening and transport the lowest. Within product groups cleaning and paper, the levels of compliance with comprehensive green criteria are highest among all product groups, as can be seen from the figures 3 and 4.

Figure 3: Scores on indicator 1 per product group. The figures represent averages of the seven countries under scope.

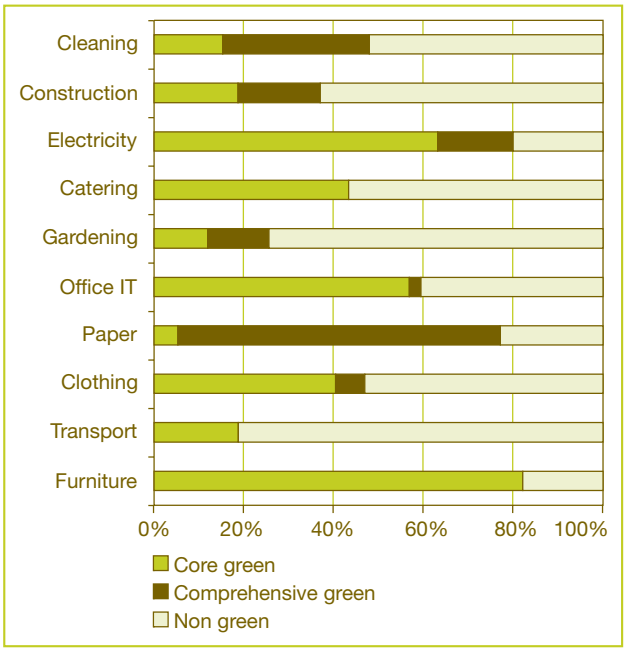
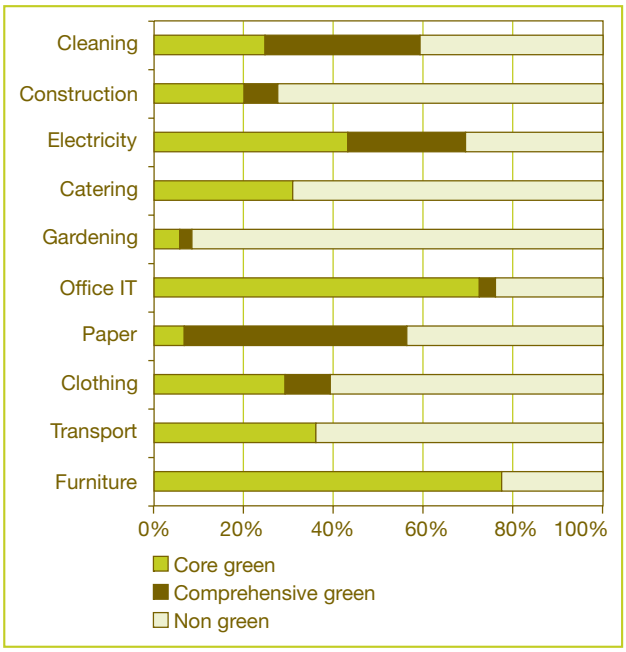


Figure 4: Scores on indicator 2 per product group. The figures represent averages of the seven countries under scope

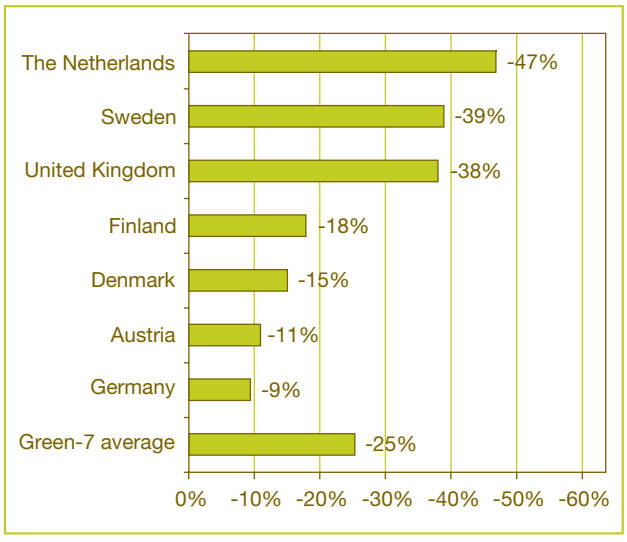


CO_2 benefits through GPP

It can be concluded that GPP contributes to an average reduction of CO_2 emissions of 25% in 2006/2007 when purchasing green for the ten product groups subject to this study. This means that public purchasers have the possibility to substantially reduce CO_2 emissions through GPP. The average CO_2 emissions impact in 2006/2007 varies from -9% in Germany to -47% in the Netherlands, depending on the country-specific levels of GPP per product group. Our study shows that for most product groups, GPP results in a reduction of CO_2 emissions; construction, gardening, paper and textiles attaining the highest reduction percentages.

Concerning the CO_2 impact of GPP, the reader should note that the above mentioned figures should be regarded as best estimates, since we have not performed full Life Cycle Analyses (LCA) in this study. A subsequent study could include an LCA for every product group, as well as an analysis of CO_2 equivalents. Further, other environmental indicators besides CO_2 could be studied, such as generation of waste, air pollution or ecotoxicity.

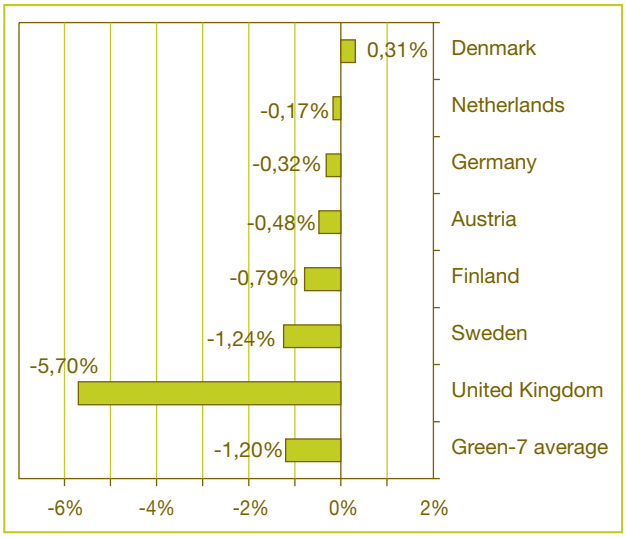
Figure 5: CO_2 impact of GPP per country. Negative numbers imply reductions in CO_2 emissions



Financial benefits through GPP

In contrast to common perception, this study shows that GPP can also lead to decreases in costs for the purchasing organisation instead of increases. When using a Life Cycle Costing (LCC) approach in calculating the financial impact of GPP, the outcome is that the average financial impact of GPP within the Green-7 is -1% in 2006/2007. This means that, although the use of environmental criteria in procurement procedures can lead to higher direct purchasing costs, it can result in an average decrease of overall costs for public organisations of around 1%. The reason behind this is that higher purchasing prices of green goods are compensated by lower operating costs. From our analysis we can conclude that there are mainly two product groups leading to cost reductions through GPP: construction and transport.

Figure 6: Financial impact of GPP. Negative numbers imply cost reductions and positive numbers imply increases in costs.

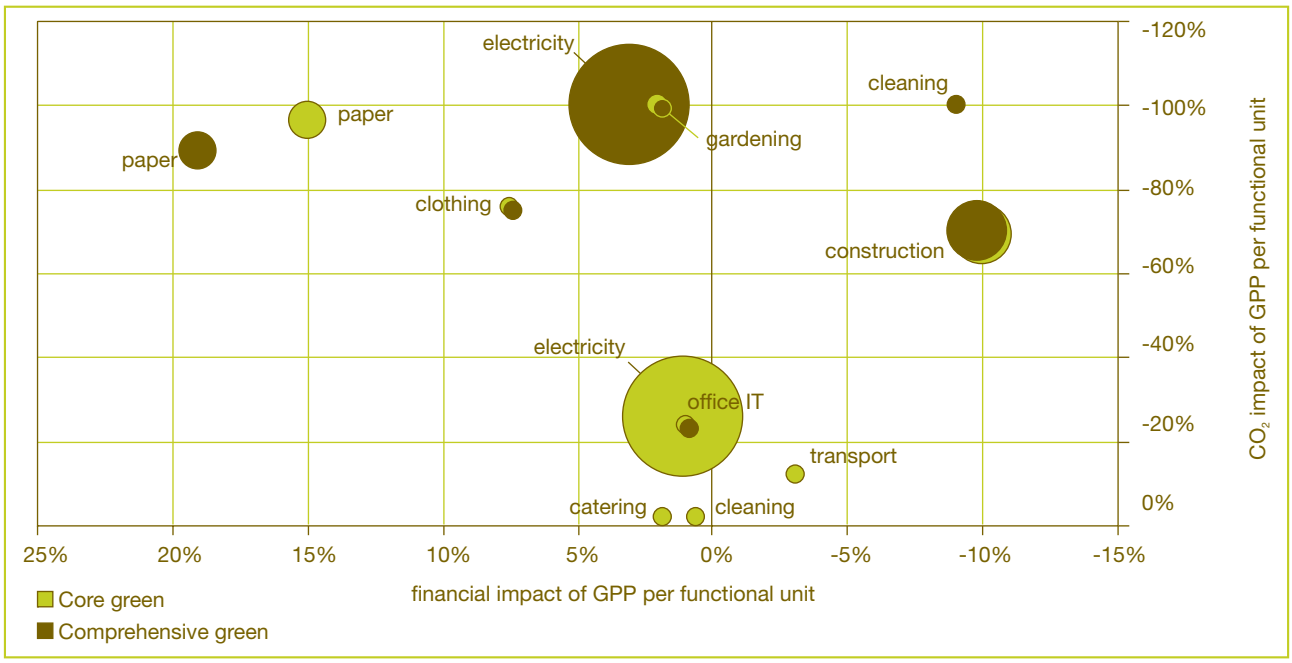


Combination of CO_2 impact and financial impact

On a product group level, a comparison has been made between the CO_2 impact and financial impact. Since the functional unit used for determining both impacts is the same, we can determine which product group leads to reductions in both CO_2 emissions and in costs, and whether this is optimal for core or comprehensive levels of GPP.

The result is that only for transport, construction and comprehensive green cleaning services, both the CO_2 impact and the financial impact are negative, as can be seen in figure 7. These are the product groups that public purchasers could focus on when implementing GPP.

Figure 7: CO_2 impact and financial impact of GPP per functional unit. Negative numbers imply lower CO_2 emissions or lower costs and positive numbers imply higher costs.



However, when also taking into account the product group that have the relatively higher CO_2 emissions (displayed by the size of the bubbles), construction and electricity are the product groups to focus on.

Reflection

Overall, we have found that the use of the questionnaire and sampling has proven to be an adequate tool for measuring the levels and impact of Green Public Procurement in a Member State. With limited resources we have been able to reach a broad and representative sample population that has provided us with the necessary data for this study. The methodologies can be applied to assess statistically sound levels of GPP in all European Members States. What is more, our methodology allows for a first estimation of the CO_2 impact and the financial impact of GPP.

1 Introduction

1.1 Background

For the achievement of sustainable development, changes in production and consumption patterns are crucial. The European public service spends approximately 16% of European Union's GNP (Gross National Product) on purchasing goods such as furniture, office equipment and transport. By taking into account environmental criteria in its procurement procedures, the European Union (EU) can promote modes of production that are more environmentally friendly and stimulate the supply of 'green' goods and services on the market.

Recognition for the potential of Green Public Procurement (GPP) as an effective instrument for stimulating sustainable development has grown over the last few years. In 2003 the European Commission (EC) recommended the Member States to adopt national action plans on GPP before the end 2006. In the renewed Sustainable Development Strategy adopted in 2006, the EU leaders have set forth a GPP target, stating that, by the year 2008, the average level of GPP should be at the current (=2006) level of GPP in the best performing Member States.

This target has been made more specific in the Commission's Communication on public procurement for a better environment adopted on 16 July 2008 (COM(2008)400), in which the Commission proposes a 50 % target for each Member State to be reached as from 2010. This target is linked to a series of priority sectors and a process to facilitate the implementation of GPP on a European level, including the use of a common set of green criteria and increased information on the benefits and life cycle costs of environmental friendly products. In September 2008, the European Council welcomed the 50% target and called upon the Commission to develop a practical evaluation methodology to measure progress on GPP made by 2010 and thereafter.[1]

This study by PricewaterhouseCoopers, Significant and Ecofys aims to contribute to these developments. A methodology for collecting the statistical data and monitoring the level of GPP in each Member States was developed during the first half of 2008. A detailed description of this methodology can be found in the separate report 'Collection of statistical information on Green Public Procurement in the EU – Report on methodologies'.

This report includes the results of implementing the developed methodology in the seven best performing Member States, the so-called Green-7, in the second half of 2008. It presents the levels and impact of GPP measured in Austria, Denmark, Finland, Germany, The Netherlands, Sweden and the United Kingdom. For a reflection on the methodology for measuring GPP we refer the reader to the conclusions of this report in chapter 7.

1.2 Objective and scope

1.2.1 Objective

The main objective of this study is to measure the current level of GPP in the seven best performing Member States by implementing the developed methodologies.
These methodologies include:

1 A methodology for measuring quantitative levels of GPP (numbers and value of "green" contracts as compared to overall number and value of public procurement contracts)
2 A methodology for measuring the CO^2 and financial impact of GPP
3 A methodology for monitoring GPP in the Member States

The monitor has been implemented in a broad range of public and semi-public, central and non-central (i.e. regional and local) institutions in the seven participating Member States. A detailed overview of the type of public institutions included in this study can be found in the separate report on methodologies - section 4.1.

1.2.2 Selected product groups

The variety of products procured by European public institutions is broad. Products consumed, used and invested in by a public institution are subject to public procurement. This can range from paper to a computer, from cars used by civil servants to the purchase of public infrastructure. For measuring the level of GPP a selection was made of ten product groups frequently procured by public institutions. The product groups are the same as the product groups for which a product sheet in the GPP Training Toolkit[2] has been developed. Secondly for each product group a representative product type was

1 Council Conclusions on public procurement for a better environment. Council meeting, Brussels, 25 September 2008
2 For the GPP training toolkit please go to http://ec.europa.eu/environment/gpp/toolkit_en.htm

identified. The selection procedure of these ten product groups and types is described in the separate report on methodologies - section 1.3.1.

Table 1.1: Selected product groups with related product types

	Product group	Product type
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

1.3 Methodologies for measuring GPP

1.3.1 Defining GPP

For measuring the level of green in public procurement practices, a clear and measurable definition of Green Public Procurement is needed. The definition of GPP as formulated by the European Commission is as follows:

Definition of GPP[3]:

"Green Public Procurement (GPP) is a process whereby public and semi-public authorities meet their needs for goods, services, works and utilities by seeking and choosing outcomes and solutions that have a reduced impact on the environment throughout their whole life-cycle, as compared to comparable products/solutions. A procurement procedure will be considered as 'green' only if it has led to the purchase of a substantively 'greener' product and only if the environmental characteristics of this product go beyond what needs to be complied with on the basis of European or national environmental legislation."

This definition focuses on the process of green procurement and defines a green product as a product with specific environmental characteristics. In order to give procurement officers more guidance in identifying green products, a practical GPP Training Toolkit was developed by the European Commission. This toolkit describes in detail which product characteristics define a product as green. These 'green criteria' are linked to the key environmental impacts of a product and are divided into 'core green' (addressing the most significant environmental impacts and/or easy to verify) and 'comprehensive green' (best environmental products which may require more efforts to procure in terms of verification).

It has not been considered appropriate to examine compliance with all training toolkit criteria at this stage, considering the fact that the training toolkit was not yet publicly available at the time of the launching and conclusion of the contracts subject to the monitoring exercise. However, in the future, monitoring will be based on compliance with the core criteria of the training toolkit. In table 2 we give an overview of the selected product groups and green criteria which have been applied in this study.

3 Collection of statistical information on Green Public Procurement in the EU. Invitation to tender, May 2007. Reference ENV.G.2./SER/2007/0038

Table 1.2: Selected product groups and green criteria (core & comprehensive)

	Product group	Product	Core criteria	Comprehensive criteria
1	Cleaning products & services	Cleaning services (including cleaning products)	• Use of cleaning products without hazardous substances	• Training of employees • Use of reusable microfiber cloths and/or dry-cleaning techniques
2	Construction	New buildings & offices	• Consideration of energy-saving measures in design and usage phase of building • Water-saving technologies in kitchen and sanitary facilities • Use of materials without hazardous substances • Use of timber from legal sources	• Use of localized renewable energy sources
3	Electricity	Electricity	• 50% or higher electricity from renewable energy sources	• 100% electricity from renewable energy sources
4	Catering & food	Catering services (including food)	• organic production of food products • Use of seasonal fruit, vegetables and fish	
5	Gardening	Gardening services and machinery	• Fuel type use of gardening machines • Use of soil improvers without peat and sewage sludge	*
6	Office IT equipment	Computers (desktops & laptops) and monitors	• Energy star standards • Accessibility and changeability of memory, hard disks and/or CD/DVD drives	*
7	Paper	Copying & graphic paper	• Production from recovered paper fibres • Use of ECF/TCF paper • Pulp production from sustainably managed forests for paper based on virgin fibres	*
8	Textiles	Clothing	• Öko-Tex Standard 100	*
9	Transport	Passenger cars and light duty vehicles	• Maximum CO_2-emissions per vehicle segment • Euro 5 standard	
10	Furniture	Office furniture	• Use of wood from legally sourced timber and sustainably managed forests	

* No comprehensive criteria were included in the questionnaire, however 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).

1.3.2 Measuring the level of GPP

The level of Green Public Procurement is measured based on two indicators:

- Indicator 1: % GPP of total public procurement in terms of monetary value
- Indicator 2: % GPP of total public procurement in terms of the # of contracts

In our calculations for both indicators the distinction between core green and comprehensive green has been taken into account.

Indicator 1 indicates the percentage of the amount of money spent on green public procurement, compared to the total amount spent on public procurement. Indicator 2 indicates the percentage of the number of green contracts, compared to the total annual number of contracts.

The data used for the calculation of indicator 1 and 2 was provided by the contracting authorities that participated in our study. This data was collected through an online questionnaire. Information was asked on the total annual procurement value (€) and the green criteria used in the most recent contract within each product group. The years of reference are 2006 and 2007. This means that the respondents have been asked to fill in the questionnaire for the most recent purchasing contract concluded in 2006/2007. The contract information received for each product group represents all purchases within that product group over the last two years. That means that if the most recent contract is considered green, then 100% of the total annual value is considered green.

The resulting total percentage level of green per product group per country represents the percentage level of green public procurement for the entire public sector in that country. We have applied a sampling method allowing us to base ourselves on the results from our sample population for calculating the levels of GPP for the whole population (see also section 1.4.1). The results from the sample population have been corrected so that the proportion of central and de-central organisations aligns with the actual proportions in the total population.

Indicator 1 has been calculated by dividing the total amount (€) of comprehensive and core level purchases in the sample by the total amount (€) of purchases in the sample (for a product group). To have an average for 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 weights awarded to the different product groups have been 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 in the sample (for a product group). Comparable to indicator 1, the percentages per product group have been combined into one weighted percentage for all ten product groups. In order to do so, the weights of the different product groups are based on how many times a product group has been filled in by the sample population per country.

Results of this study on indicators 1 and 2 are presented in chapter 3 and 4 of this report. Chapter 3 includes comparisons between countries, chapter 4 comparisons between product groups at country level.

For a more detailed description of the definitions and methods for calculating indicator 1 and 2 we refer to the separate report on methodologies – chapter 2.

1.3.3 Measuring the impact of GPP

Indicator 3: % CO_2 impact of GPP

Because of the current public awareness on climate change, the correlation between CO_2 emissions from human activity and global warming, and taking into account the availability of data, indicator 3 focuses on the impact of GPP on CO_2 emissions. Criteria are being applied that relate to reduced CO_2 emissions in a products' life cycle. Indicator 3 is calculated by comparing the CO_2 emissions of a green product with those of a non-green product.

Because of the complexity and resource intensity of the calculations as well as the limited data available, the method applied has several limitations which should be mentioned beforehand:

1. CO_2 equivalents are not included (i.e. we do not convert emissions of other greenhouse gases such as methane into CO_2 equivalents)
2. Climate change is only one of the various environmental impacts

3. The study does not include a full Life Cycle Analysis which would allow to identify the most important environmental impact based on a life cycle perspective

Our analysis focuses on the production and/or consumption phase which has the most CO_2 impact. From the GPP Training Toolkit, criteria have been selected that allow for distinguishing between the CO_2 impact of a green and a non-green product. CO_2 related criteria which make a distinction between core and comprehensive levels of GPP were only available for electricity, construction, cleaning services and paper.

After having selected the criteria, non-green and green products have been identified meeting those criteria, for each product group. A so-called CO_2 ratio has been calculated for each product as follows:

a Selection of a functional unit for every product group (e.g. number of computers or m^2 floor cleaned);
b Determination of CO_2 emissions per functional unit, both for the green and a non-green product within each product group;
c For those product groups of which the calculation of the CO_2 emissions is partly based on energy use[4], we make us of country-specific CO_2 emissions per kWh for all countries under scope.

The CO_2 ratio determines the CO_2 impact of GPP per functional unit of a product group. If we link this CO_2 impact per functional unit to the results of indicator 1, we can determine for all countries the CO_2 impact of GPP in 2006/2007. For more details on this calculation, we refer to the separate report on methodologies. Results of this study are presented in section 5.1 of this report. We present comparisons between countries, as well as comparisons between product groups at country level.

Indicator 4: Financial impact of GPP

The financial impact of GPP is calculated by comparing the costs of a green product with those of a non-green product. Our analysis is based, as far as possible, on the concept on Life Cycle Costs (LCC). This means that we do not only take into account costs that result from the purchase of a product or service, but also operational costs and costs for disposal. Thus, the financial analysis is performed for all stages of the life cycle that are related to the user of a product.

For each stage, we have determined so-called cost ratios, which are defined as the ratio of costs of a green product as compared to the costs of a non-green product. This is done both for core and comprehensive levels of GPP. A cost ratio of 0.90 for a certain product in a certain stage of the life cycle means that a green version of this product leads to 10% lower costs at this stage than the non-green version.

When calculating cost ratios within the various stages of the life cycle of a product group, it becomes clear that not all stages account for the same percentage of the total cost for the user of a product. For example, operational costs of a computer during its 4-year life are lower than costs of purchasing. For this reason, we have determined the so-called costs structures for every product group, in which we determine the percentage that every element contributes to the total costs.

The cost ratios for all relevant life cycles stages determine, together with the cost structure, the financial impact of GPP per functional unit of a product group. If we link these results of our analysis to the results of indicator 1, we can determine the actual financial impact of GPP in 2006/2007. For more details on this calculation, we refer to the separate report on methodologies. The results of this study are presented in section 5.2 of this report. We present comparisons between countries, as well as comparisons between product groups at country level.

1.4 Methodology for monitoring GPP

1.4.1 Surveying and sampling methods

Surveying

The instrument we used for collecting 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.

4 These product groups are: construction (electricity use of a building), electricity, office IT equipment (electricity use of a computer or monitor, paper (electricity use during pulping process).

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 the environmental policy, procurement policy and the implementation of green procurement in the organisation. The answers to these qualitative questions give us information on the relationship between the behaviour and the results of respondents. The most valuable insights for this study are presented in chapter 2 of this report. 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. In addition, section C contained questions concerning the total amount of money an organisation has spent on a product group during the last fiscal year.

The questionnaire was online from the 4th of June until the 31st of August 2008. During that time, response-increasing methods were applied to make sure a sufficiently high response was achieved. Actions taken included:

a) Clear communication to respondents. Announcements in relevant newsletters were placed and an announcement letter signed by the minister responsible for environmental affairs and/or the EC head of unit Environment and Industry. A project website was launched containing information and a FAQ list about this study.
b) Professional help desk. Five days a week a professional helpdesk was available for questions and support in filling out the questionnaire.
c) Reminders per email and telephone. One invitation and four reminders were sent out per email. In total 1.360 calling sessions were performed, 50 to 400 calling sessions per country. In countries where the response rate kept behind, respondents were stimulated extra through emails and relevant networks.

Verification

In order to verify the answers given in the questionnaire we selected 14 respondents, 2 per Member State, for a verification interview by telephone. With the selection of respondents a balanced distribution of product groups and type of institution was taken into account. In total 14 interviews were performed, of which 2 central, 10 local, 1 regional and 1 semi-governmental authority have been interviewed in the seven Member States. For an overview of the outcomes we refer to Appendix G.

Sampling

The sampling method used in this study aims to collect data which is representative for the total population of public institutions. This way, valid statements on the level and impact of GPP can be made for the complete public sector based on the data received from our sample population. For this we determined the necessary gross sample size (number of questionnaires to be sent out) to reach the required net sample population (actual number of respondents) based on:

- Actual number of public institutions in all countries.
- Estimated response rates per country (based on experiences with similar surveys).
- A 20% precision level (a measure of the uncertainty of the estimated level of GPP that we find acceptable to make statistical statements. We vary this precision level in order to define an optimal, a base and a pessimistic scenario.)
- A confidence level of 95% (The level of uncertainty is chosen such that we can have a 95% confidence that the true level of GPP lies within the boundaries of the precision level.)

The base scenario with a 20% precision level has a required total net sample size (# respondents) of 635. Apart from this an optimistic and pessimistic scenario were sketched. In the optimistic scenario a total net sample size of 794 gives a precision level of 17%. The pessimistic scenario has a total net sample size of 476 and a precision level of 23%.

As is shown in the separate report on methodologies, the required net sample size differs per country, depending on the total population size of that country. The differences is a very small, even though there are great difference in the total population size. This is a result of the fact that from statistical theory, we found that although there is a relation between the size of the population and the required net sample size, the influence is not very high. For more explanation on the numbers and definitions used in the sample size we refer to the report on methodologies – chapter 4.

Aiming at a 20% precision level, 2.907 contacts (the calculated gross sample size) at public institutions were identified and received our questionnaire. Based on the actual response the precision levels per country were calculated. This required a complex calculation taking into account the spreading on central and non-central level and was based on the actual respondents with at least one contract in a product group in section C. For an overview of the response rate numbers per product group per country we refer the reader to Appendix A.

From the actual response, we have found that with achieved precision levels we can make statistically sound statements on the level of GPP for all countries on indicator 2 and for three countries on indicator 1. For this, a maximum precision level of 20% has been taken into account in order to make valid statement from a statistical point of view. On indicator 2, a very optimistic scenario was reached with precision levels lower (i.e. better) than 17% for all countries. On indicator 1, Denmark, The Netherlands and Sweden scored optimistic precision levels of 17% or lower (i.e. better). Austria, Germany, Finland and UK however did not reach the pessimistic scenario with precision levels higher (i.e. not better than 23%). The differences in precision level between these countries are explained by the number of respondents: Germany, Finland and UK achieved a lower response rate than Denmark, The Netherlands and Sweden. The precision levels for indicator 2 are better than indicator 1 because of the wider spreading of the data on procurement values (indicator 1) than the spreading of data in number of contracts (indicator 2). For the exact precision levels per country (broken down for core and comprehensive levels as well) we refer to Appendix B of this report.

1.4.2 Overall response rates

The table below gives an overview of

1) the number in sample: total of 2.907,
2) the number of respondents: the number of respondents that filled in section B of the questionnaire as a minimum,
3) the response rate: the percentage of responses compared to the sample size,
4) the number of organisations that respondents purchase on behalf of: in each country there are several purchasing organisations that purchase on behalf of other public institutions. These so-called centralized purchasing organisations have filled in the questionnaire on behalf of more than one institution.

1.5 Contents of this report

This report provides an overview of the results of the collection of data on Green Public Procurement in the seven participating Member States. In chapter 2 the results of section B of the questionnaire (concerning the qualitative questions) are presented. They give us an indication of the level of implementation of GPP policy in the participating organisations. Chapter 3 shows us the main results on the quantitative levels of Green Public Procurement per country. Chapter 4 includes some more detailed results per product group. Chapters 5 and 6 present the results on the impact of Green Public Procurement, respectively on CO_2 and financially. In the final chapter 7 overall conclusions are drawn on all results presented.

Table 1.3: response rates

Country	No. in sample	No. of respondents	Response %	No. of organisations respondents purchase on behalf of
Austria	384	136	35%	155
Denmark	341	90	26%	167
Finland	387	162	42%	246
Germany	490	103	21%	151
The Netherlands	414	248	60%	266
Sweden	430	267	62%	308
United Kingdom	461	99	21%	113
All countries	2.907	1.105	38%	1.406

2 Organising Green Public Procurement

The progress of Member States on Green Public Procurement has been measured by means of quantitative, result-oriented indicators (indicator 1 and 2). Chapters 3 and 4 deal with the results of these indicators. In addition, the questionnaire which was used for this study, contained a set of qualitative, process- and policy-oriented questions. The answers to these questions show what measures have been taken by governmental organisations to attain a certain level of GPP. This gives some indication of future 'GPP-potential'. In this chapter we present the results of this process-oriented part of the questionnaire, for each of the seven separate Member States. The questions are related to the environmental and procurement policies of governmental organisations, and on the implementation of GPP. Appendix C includes some results on background information and breakdowns of results between central and non-central organisations.

2.1 Summary

Within the majority of organisations, the procurement policy contains a section on the environmental aspects of procurement. Responsibility for realizing ambitions on green procurement is mostly in the hands of the middle management (for instance head of the procurement unit) or a higher level.

Furthermore, to keep the level of knowledge and information up to date, respondents name intergovernmental cooperation and seminars as the most important sources. In addition, organisations use country specific sources, mostly reachable through the internet. A substantial part of the respondents (16 % on average) use the GPP website of the European Commission as an additional source.

Finally, this study shows that methods for Life Cycle Costing (LCC) are not yet fully incorporated into the procurement process. Organisations evaluate proposals more often on purchasing costs than on the outcome of LCC. Decisive arguments for choosing 'green' during the procurement process, are the environmental impact of the purchase, and the availability of and the familiarity with green alternatives.

2.2 Environmental policy

Table 2.1: Percentage of organisations having an environmental management system[5]

	Central	Non-central	Total
Austria	35%	9%	10%
Denmark	30%	26%	26%
Finland	29%	27%	27%
Germany	8%	9%	9%
The Netherlands	29%	21%	22%
Sweden	75%	33%	38%
United Kingdom	50%	32%	33%
	36%	22%	24%

The table above shows the percentage of organisations that have implemented an environmental management system (EMS). On average, less than a quarter of the organisations has an EMS. Within most countries, percentages are higher for central government. Sweden ranks highest among the seven countries.

2.3 Procurement policy

Table 2.2: Percentage of organisations having an environmental component to their procurement policy

	Central	Non-central	Total
Austria	87%	61%	61%
Denmark	89%	90%	90%
Finland	35%	34%	34%
Germany	42%	73%	72%
The Netherlands	55%	69%	67%
Sweden	62%	87%	84%
United Kingdom	100%	89%	89%
	67%	72%	71%

5 The percentages equal the number of 'yes'-answers as part of the total number of respondents. Percentages at the bottom of the table are the arithmetic means over all seven member states.

Within the majority of organisations, the procurement policy contains a section on the environmental aspects of procurement. Finland is an exception to this general rule.

2.4 Implementation of Green Public Procurement

2.4.1 Tasks and responsibilities

Table 2.3: Percentage of organisations having an action plan for meeting goals on green procurement

	Central	Non-central	Total
Austria	40%	11%	12%
Denmark	28%	38%	37%
Finland	21%	16%	16%
Germany	23%	20%	20%
The Netherlands	40%	30%	31%
Sweden	27%	38%	37%
United Kingdom	100%	58%	61%
	40%	30%	31%

This question draws a divergent picture. The majority of the governmental organisations from the UK have an action plan for meeting goals on green procurement. Other countries rank lower.

Table 2.4: Percentage of organisations for which green procurement is part of the regular Planning & Control cycle

	Central	Non-central	Total
Austria	53%	14%	15%
Denmark	39%	41%	41%
Finland	31%	34%	34%
Germany	17%	12%	12%
The Netherlands	26%	21%	21%
Sweden	37%	38%	38%
United Kingdom	100%	49%	52%
	43%	30%	31%

green procurement being part of the Planning & Control cycle means that green procurement has been put into the (financial) processes within the organisation. It is an indication that GPP is taken seriously. The results in the table above show a picture which is similar to the previous table. Again, UK organisations rank highest.

When being asked who is responsible for realizing ambitions on green procurement, most organisations reply ‘middle management’ (for instance head of the procurement unit) or a higher level. Relatively large differences can be seen between countries.

Table 2.5: Responsible level for meeting goals set for making procurement more sustainable (% of organisations)

Total	Management / directorate of organisation (e.g. minister, municipal executive)	Middle management (e.g. procurement coordinator, procurement department)	Procurers	Other / unknown
Austria	49%	23%	9%	18%
Denmark	7%	77%	0%	17%
Finland	19%	41%	18%	22%
Germany	36%	8%	24%	32%
The Netherlands	22%	32%	10%	36%
Sweden	20%	46%	25%	9%
United Kingdom	10%	66%	7%	18%
	23%	42%	13%	22%

2.4.2 Empowerment and sources of information

Table 2.6: Measures taken to empower the responsible people to meet the green procurement goals (multiple options possible)

Total	Training and education of procurement officers in the field of green procurement	Active communication towards the organisation about set goals in making procurement more sustainable	Formally appointed powers to the responsible officers	Political support	Other (incl. 'nothing has been done')
Austria	9%	22%	24%	6%	12%
Denmark	28%	32%	14%	17%	10%
Finland	17%	15%	12%	2%	15%
Germany	9%	21%	25%	6%	4%
The Netherlands	24%	35%	15%	12%	28%
Sweden	39%	22%	13%	16%	16%
United Kingdom	57%	49%	9%	24%	13%
	26%	28%	16%	12%	14%

To support the responsible people in meeting the organisational goals on green procurement, several measures have been taken. Training and education, and active communication are mentioned most frequently by the respondents, especially by UK governmental organisations. In most cases, political support for the responsible people is low.

Table 2.7: External sources being used to find information about green procurement (multiple options possible)

Total	European Commission GPP website	Procura+ website	Ecolabel	Country specific sources	Other
Austria	9%	4%	5%	21%	23%
Denmark	24%	2%	33%	72%	30%
Finland	18%	7%	4%	16%	15%
Germany	18%	4%	5%	33%	8%
The Netherlands	9%	4%	15%	78%	19%
Sweden	14%	33%	38%	67%	17%
United Kingdom	22%	14%	24%	67%	40%
	16%	10%	18%	51%	22%

For green procurement information, most organisations rely on country specific sources, mostly reachable through the internet. This applies in particular to Denmark and the Netherlands. A substantial part of the respondents use the GPP website of the European Commission as an additional source.

Table 2.8: Most frequently consulted country specific sources (% of organisations)

Total	External source		External source	
Austria	Take it! (www.oekoweb.at/takeit)	11%	Check it! (www.ifz.tugraz.at/oekoeinkauf)	21%
Denmark	Staten og Kommunernes Indkøbscentral	55%	Miljøvejledninger (Miljøstyrelsen)	69%
Finland	Syke (Finnish Environment Institute)	16%	Hymonet	13%
Germany	Website Blauer Engel	33%	Website des Umweltbundesamts (beschaffung-info.de)	33%
The Netherlands	Milieukeur	20%	SenterNovem	78%
Sweden	Nordiska ministerrådet	4%	Miljöstyrningsrådet	67%
United Kingdom	DEFRA (Department for Environment, Food and Rural Affairs)	48%	OGC Buying Solutions	67%

The table above shows which country specific sources are consulted. SenterNovem (Dutch agency on sustainability and innovation) has been consulted most frequently. Other popular sources include the Office of Government Commerce from the UK, the Swedish Miljöstyrningsrådet (Environmental Management Council) and Miljøvejledninger (Ministry of the Environment) from Denmark.

Table 2.9: Means to keep the level of knowledge and information on green procurement up to date (multiple options possible)

Total	Training and education	Seminars	By cooperating with other (governmental) organisations	Internet	Other (incl. 'nothing has been done')
Austria	11%	13%	21%	9%	14%
Denmark	9%	37%	54%	42%	18%
Finland	27%	21%	27%	18%	11%
Germany	12%	7%	25%	19%	7%
The Netherlands	19%	42%	40%	52%	15%
Sweden	34%	56%	40%	32%	6%
United Kingdom	50%	49%	42%	29%	10%
	23%	32%	36%	29%	12%

To keep knowledge and information up to date, again internet sources are being used frequently by sustainable procurers. But even more frequently, respondents mention 'cooperation' and 'seminars' as important sources to stay up to date. Training and education seem to be slightly less important.

In the table below, we list the internet sources most frequently used by the respondents (open question). By far the most frequently mentioned sources are www.senternovem.nl (Dutch) and www.msr.se (Swedish). This is in agreement with the question on the external sources being used.

Table 2.10: Internet sources most frequently used (% of organisations)

Total	Internet source most frequently used		
Austria	www.oekokauf.wien.at	www.ifz.tugraz.at	www.bbg.gv.at
Denmark	www.elsparefonden.dk	www.mst.dk	www.ecolabel.dk
Finland	www.hymonet.com	www.ymparisto.fi	www.hansel.fi
Germany	www.umweltbundesamt.de	www.beschaffung-info.de	www.iclei.org
The Netherlands	www.senternovem.nl	www.pianoo.nl	suppliers websites
Sweden	www.msr.se	www.avropa.nu	suppliers websites
United Kingdom	www.ogc.gov.uk	www.defra.gov.uk/sustainable/government/	www.eauc.org.uk

2.4.3 Procurement process

Table 2.11: Percentage of organisations comparing environmental aspects compared with price and other criteria during the procurement process

Total	Yes, always	Yes, most of the time	Yes, sometimes	Seldom	Never
Austria	5%	39%	34%	16%	6%
Denmark	17%	41%	37%	6%	0%
Finland	7%	17%	30%	40%	6%
Germany	17%	29%	38%	14%	2%
The Netherlands	14%	34%	36%	13%	4%
Sweden	3%	33%	43%	18%	3%
United Kingdom	25%	28%	35%	6%	6%
	13%	31%	36%	16%	4%

In general, governmental organisations take environmental aspects into account within part of their tender processes ('sometimes' or 'most of the time'). Within the UK and Denmark, the environmental aspects are most frequently part of the award process, within Finland least frequently.

Table 2.12: Percentage of organisations evaluating proposals on Life Cycle Costing or on the procurement costs of the product/service only

Total	Mostly evaluation on LCC	Sometimes evaluation on LCC, sometimes evaluation on purchasing costs	Mostly evaluation on purchasing costs
Austria	9%	46%	45%
Denmark	12%	57%	31%
Finland	14%	38%	48%
Germany	14%	49%	37%
The Netherlands	11%	40%	49%
Sweden	7%	30%	62%
United Kingdom	26%	58%	16%
	13%	45%	41%

In an LCC analysis, various cost elements in the user life cycle of a product are taken into account. This means that not only purchase prices are analyzed, but also other cost elements for the user, depending on the nature of the product or product group. From the table above, it appears that methods for LCC are not yet fully incorporated into the procurement process. Organisations evaluate proposals more often on purchasing costs than based on the outcome of LCC (see, for instance, the Netherlands and Finland). Again, the UK is an exception to this general rule. Within this country, evaluation on LCC occurs more frequently than on purchasing costs only.

Table 2.13: Decisive criteria for asking for "green" goods by including green criteria as minimum technical specifications or as award criteria (multiple options possible)

Total	Volume of the tender, only the larger tenders	Volume of the tender, only the smaller tenders	Environmental impact of the purchase	Availability of green alternatives	Familiarity with green alternatives	Familiarity with suppliers that offer green goods/services	The impact of the green alternative on the processes of the organisation - only choosing for the green alternative when impact is minimal	Other
Austria	7%	2%	19%	45%	22%	18%	9%	7%
Denmark	17%	5%	48%	41%	38%	31%	3%	11%
Finland	4%	1%	36%	29%	28%	14%	3%	8%
Germany	5%	2%	25%	29%	20%	11%	10%	3%
The Netherlands	8%	1%	44%	53%	41%	23%	19%	13%
Sweden	2%	2%	54%	57%	39%	21%	6%	6%
United Kingdom	11%	4%	50%	45%	18%	15%	9%	4%
	8%	2%	40%	43%	29%	19%	8%	7%

Finally, we asked the respondents which considerations are decisive for choosing 'green' during the procurement process. Most decisive are the environmental impact of the purchase, and the availability of and the familiarity with green alternatives. The volume of the tender and the impact on the organisation are considered least important by the respondents.


1
2

3 Green Public Procurement per country

This chapter reports on the main results of indicators 1 and 2. First, the results will be presented on an aggregated level over the seven participating countries. In paragraph 3.2 and further the results will be presented broken down per country and product group. Appendix D gives information on the results of scores per country broken down by central and decentralised government organisations.

Almost all figures in this chapter show a core level of GPP, a comprehensive level of GPP and a non-green level of GPP per country or per product group. A core level of GPP represents the percentage of GPP meeting core criteria only. The comprehensive level of GPP represents the percentage of procurement value or number of contracts meeting core criteria as well as comprehensive criteria. The total percentage of green procurement is calculated by adding the percentage core level of GPP to the percentage of comprehensive level of GPP.

3.1 Summary

The four figures below show the total amount of GPP per country expressed as a percentage of the total procurement value and as a percentage of the total amount of contracts per country. In the first two figures, we have indicated the levels of GPP of green purchases (i.e. core plus comprehensive), as well as the precision levels indicated by the length of the uncertainty bars. In the subsequent two figures, we have broken down the levels of GPP into core levels and comprehensive levels. Also, the averages of the Green-7 are shown in these figures.

Figure 3.1: Overall scores on indicator 1. The precision levels are indicated by the length of the uncertainty bars.

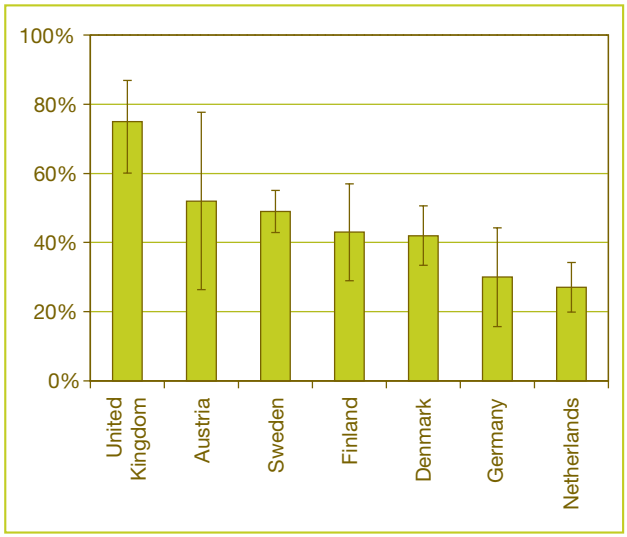


Figure 3.2: Overall scores on indicator 2. The precision levels are indicated by the length of the uncertainty bars.

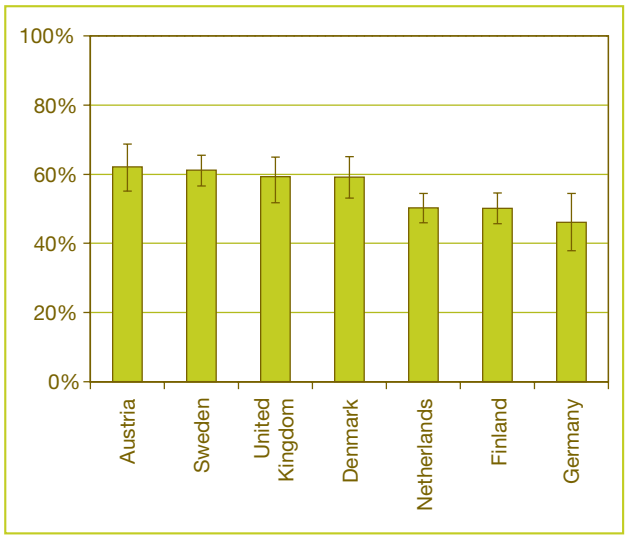


Figure 3.3: Overall scores on indicator 1, broken down by core and comprehensive levels of GPP. Also the average of the Green-7 is shown.

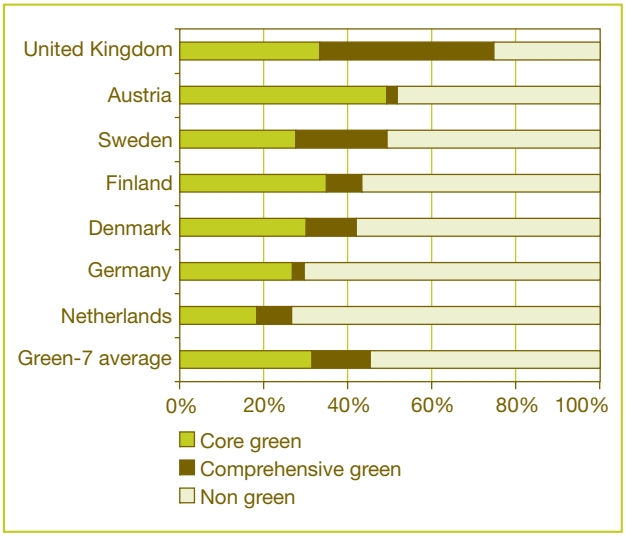
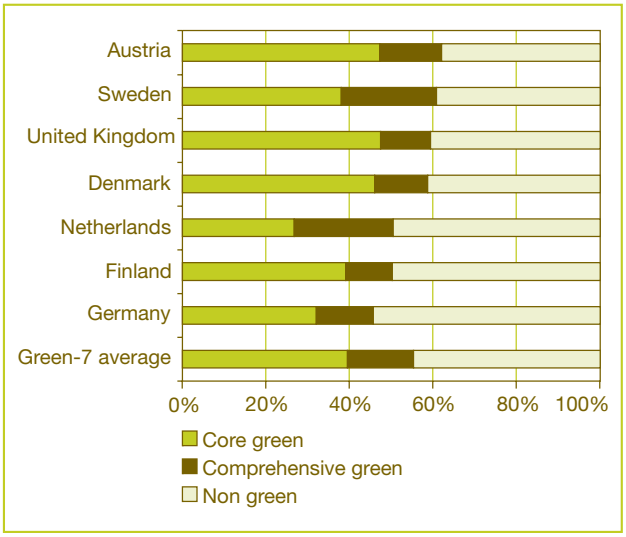


Figure 3.4: Overall scores on indicator 2, broken down by core and comprehensive levels of GPP. Also the average of the Green-7 is shown.



These four figures show a number of striking results. First of all, figures 3.3 and 3.4 show that the level of GPP in these seven countries shows an average overall level of 45% green level of GPP when expressed as a percentage of the procurement value of which is 31% core level and 14% comprehensive level of GPP. This means that 55% of the procurement value in the seven participating countries has been procured non-green.

For indicator 2 the overall results show a score of 55% green level of GPP when expressed as a percentage of the total amount of contracts, of which is 39% core level of GPP and 16% comprehensive level of GPP.

Concerning the precision levels, we see that for indicator 2, all countries have very low uncertainties, while for indicator 1 the uncertainties are much higher. This is a result of the weighing of product groups on the basis of procurement value (indicator 1), which increases the spreading of the data and henceforth the precision level. In Austria, this has even led to high levels of uncertainty for indicator, which results in less reliability of the data. Further, we see that in the Netherlands, Sweden and Finland, the uncertainties for indicator 1 are quite low due to the high response rates in these countries.

What is also striking is that indicator 1 shows a different ranking of the seven countries compared to indicator 2. For indicator 1 the United Kingdom is the best performing country whereas indicator 2 shows Austria to be the best performing country. The difference between the highest scoring country and the lowest scoring country is bigger for indicator 1 than for indicator 2. Indicator 1 shows United Kingdom as the highest scoring country (75% green purchases of total procurement value) and the Netherlands as the lowest scoring country (27% green purchases of total procurement value). Indicator 2 shows Austria as the highest scoring country (62% green purchases of total number of contracts) and Germany as the lowest scoring country (46% green purchases of total number of contracts).

In the textbox on page 36 a specific case illustrates how the results of indicator 1 and 2 should be interpreted and how the differences between the two indicators complement each other. In the following sections, we will present results of the levels of GPP at country level.

3.2 Austria

Figure 3.5: Overall scores Austria on indicator 1

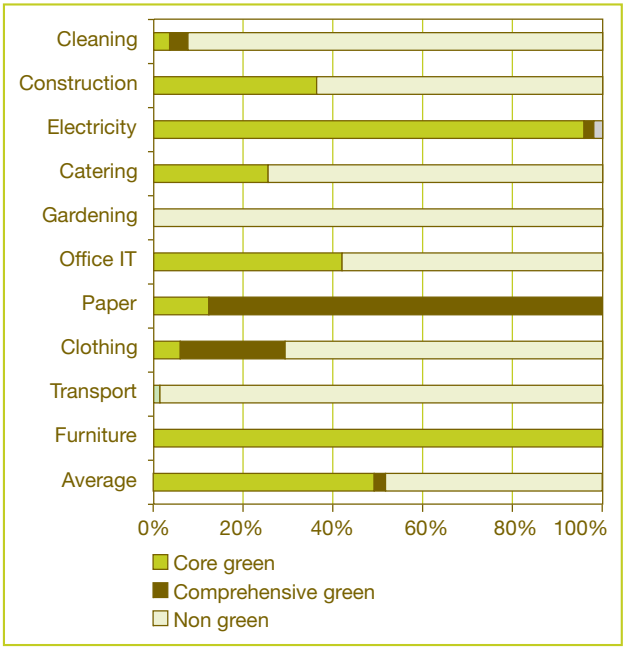
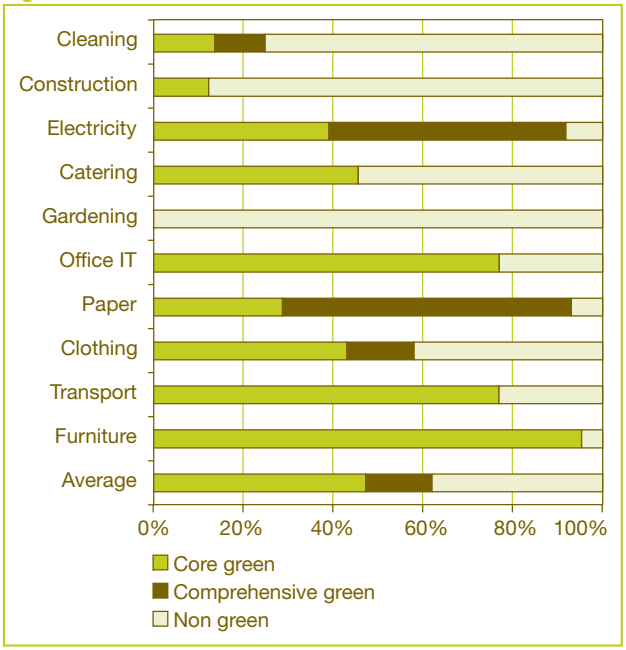


Figure 3.6: Overall scores Austria on indicator 2



* Austria's results for clothing might be skewed because of low response

Austria's average results for indicator 1 show 52% of green purchasing, which is divided in 49% core level of GPP and 3% comprehensive level of GPP. Hence 48% of the purchasing can be considered as having a non-green level of GPP. The average results for indicator 2 are 62% green purchasing (47% core level of GPP and 15% comprehensive level of GPP) and 38% non-green level of GPP.

The levels of GPP for indicator 1 and 2 for Austria show a number of interesting results. Austria scores very well on several product groups. 98% of the procurement value of electricity has been spent on core or comprehensive green. When expressed in indicator 2, 53% of the number of tenders for electricity in Austria can be considered as comprehensive green. For the product group gardening, Austria scores for indicator 1 as well as for indicator 2 100% non-green. The results might be skewed by the relatively low response on this product group in Austria. A few responses then heavily influence the final scores for a product group.

Another remarkable result is Austria's score for the product group paper. Austria scores a 100% green level of GPP for indicator 1 on paper, of which 88% is comprehensive green.

A last interesting result is that Austria scores 100% green level of GPP on furniture for indicator 1 and 95% green level of GPP for indicator 2. One contract contributes 5% to Austria's score for indicator 2. That specific contract only has a small procurement value. Therefore the value of this contract completely disappears when compared with the total procurement value for this product group.

3.3 Denmark

Figure 3.7: Overall scores Denmark on indicator 1

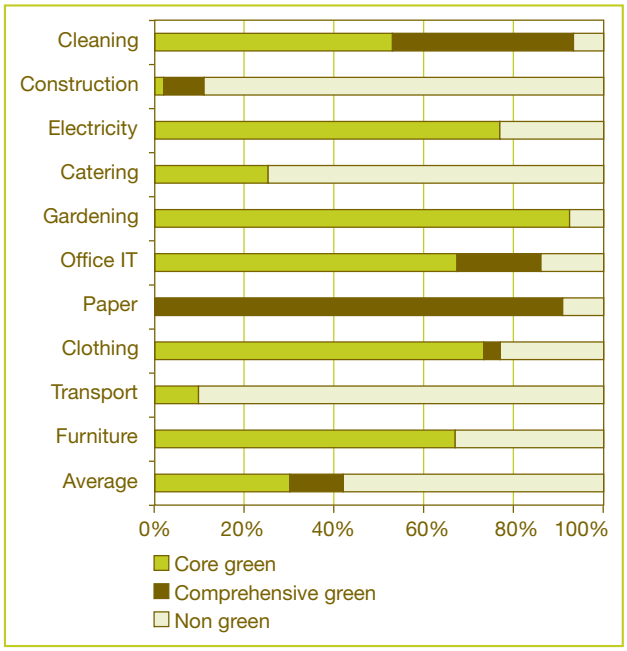
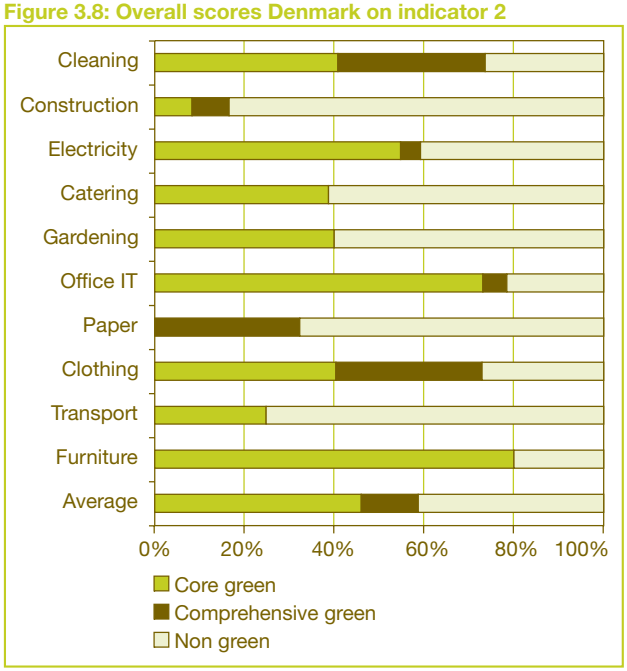


Figure 3.8: Overall scores Denmark on indicator 2



* Denmark's results for gardening might be skewed because of low response

Denmark's average results for indicator 1 show 42 % of green purchasing (30% core level and 12% comprehensive level of GPP) and 58% non-green level of GPP. The average results for indicator 2 are 46% core level of GPP, 13% comprehensive level, which sums to a total of 59% of green purchasing. Hence 41% of the procurement in Denmark can be considered as non-green.

The results of Denmark for indicator 1 and 2 show a great variety in scores for the ten product groups. On the product group cleaning Denmark scores 93% green for indicator 1, while for product group office IT Denmark scores 86% green level of GPP. On the other hand there are low scores on construction (11% green for indicator 1), catering (25% green on indicator 1) and transport (10% green for indicator 1).

The difference between indicator 1 and 2 is shown again by the scores for product groups gardening (92 % core level for indicator 1 and 40% core level for indicator 2), paper (91% comprehensive level for indicator 1 and 32% comprehensive level for indicator 2) and clothing (73% core level for indicator 1 and 40% core level for indicator 2).

3.4 Finland

Figure 3.9: Overall scores Finland on indicator 1

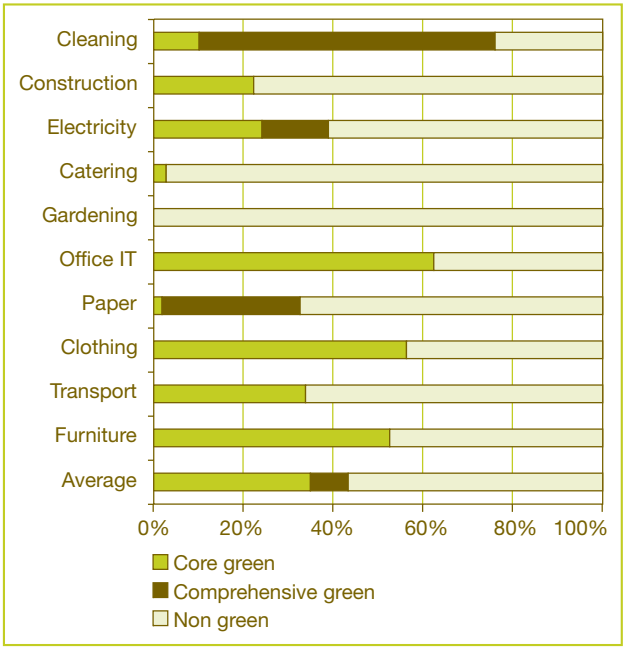
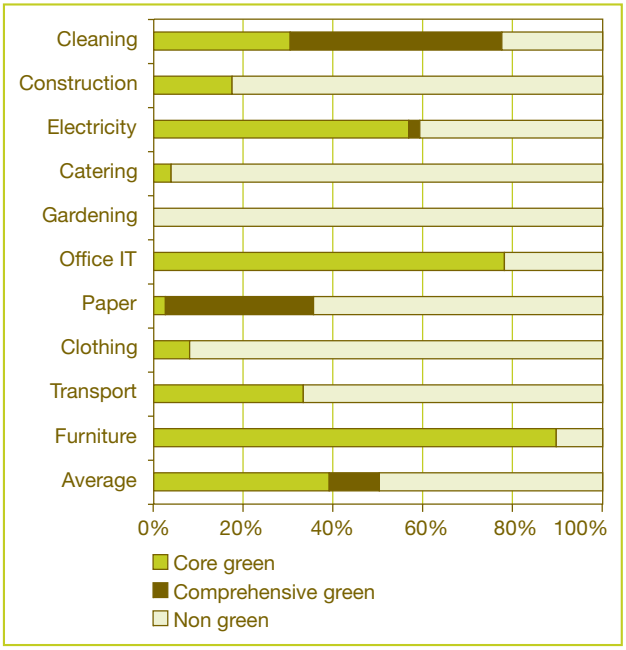


Figure 3.10: Overall scores Finland on indicator 2



Finland's average results for indicator 1 show 43% green purchasing, which is divided in 35% core level of GPP and 8% comprehensive level of GPP. The average results for indicator 2 are 39% core level of GPP, 11% comprehensive level of GPP (total green purchases are 50%) and 50% non-green level of GPP.

The results of Finland show high scores on the product groups cleaning, office IT and furniture. 66% of the total amount of contracts for cleaning is comprehensive level (indicator 1). 78% of the contracts for office IT are on core level of GPP (indicator 2).
There are also a couple of product groups that show low scores of GPP: catering (4% core level for indicator 2), gardening (0% green for indicator 2) and clothing (8% core level on indicator 2).

3.5 Germany

Figure 3.11: Overall scores Germany on indicator 1

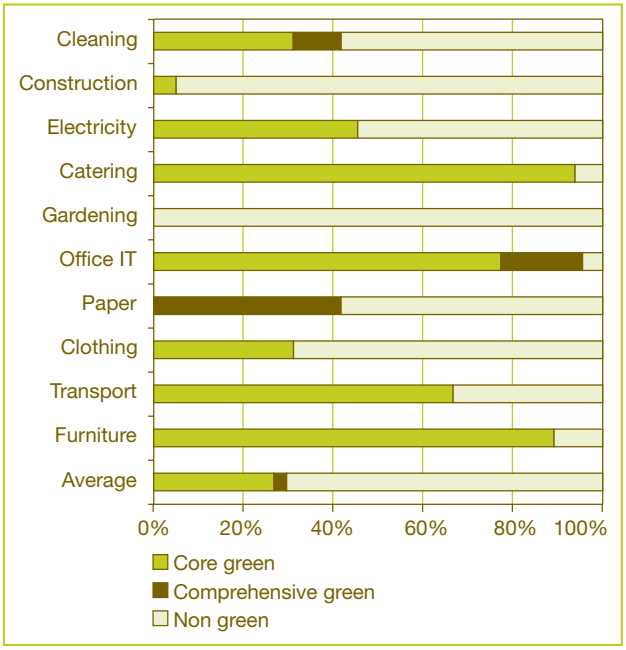
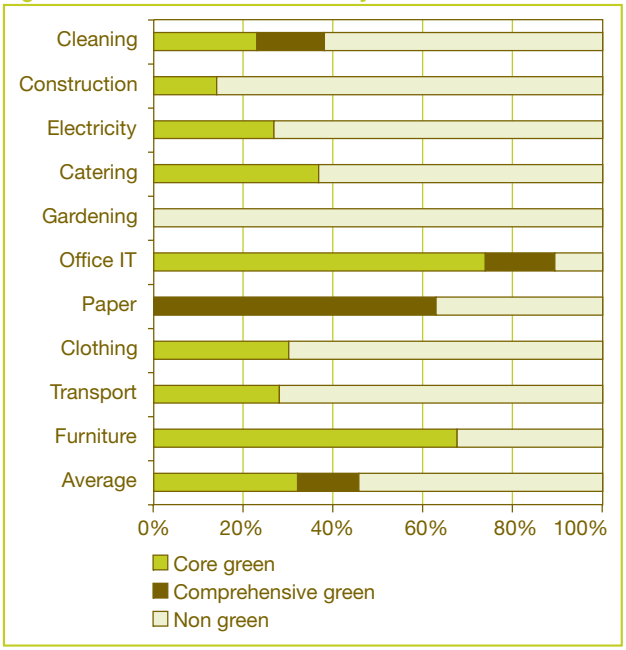


Figure 3.12: Overall scores Germany on indicator 2



* Germany's results for construction and gardening might be skewed because of low response

Germany's average results for indicator 1 show 30% of green purchasing (27% core level of GPP and 3% comprehensive level of GPP) and 70% non-green level of GPP. The average results for indicator 2 are that 46% of the contracts can be considered as green (32% core level of GPP and 14% comprehensive level of GPP) and 54% can be considered as having a non-green level of GPP.

The results of Germany show a high level of GPP for office IT (96% green for indicator 1) and furniture (89% core level for indicator 1). The results show an average or lower score of GPP for the product groups construction (5% core level on indicator 1), gardening (0% green on indicator 1) and clothing (31% core level on indicator 1).

Germany's results for catering show again how measuring levels of GPP by procurement value leads to different results compared to measuring by the number of contracts. Germany scores 94% core level for indicator 1 and 37% for indicator 2.

3.6 The Netherlands

Figure 3.13: Overall scores The Netherlands on indicator 1

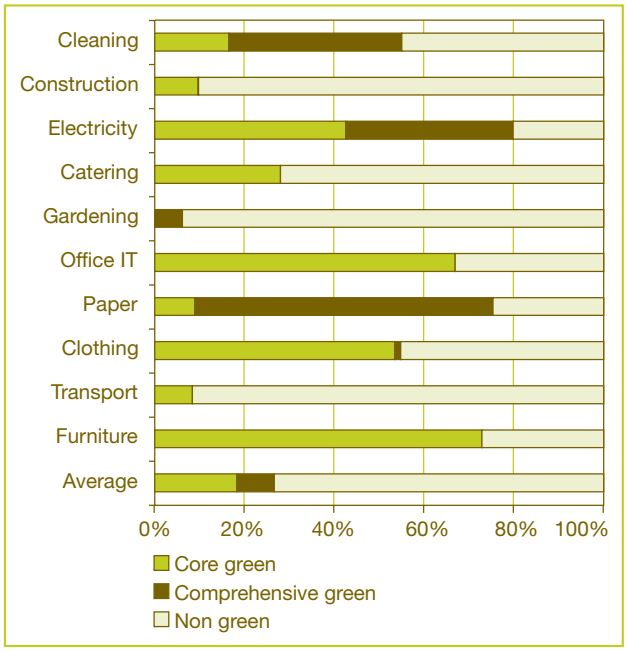
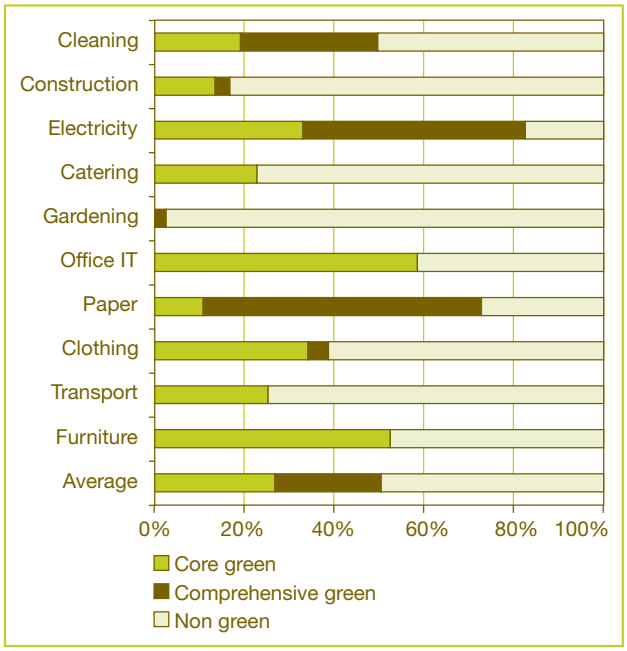


Figure 3.14: Overall scores The Netherlands on indicator 2



The average results of the Netherlands for indicator 1 show 18% core level of GPP and 8% comprehensive level of GPP which results in a total percentage of green procurement of 27%. The average results for indicator 2 are 50% green purchasing (27% core level of GPP and 24% comprehensive level of GPP) and thus also 50% of non-green purchases.

The results of the Netherlands show a number of high scores on the comprehensive levels of GPP: 39% for cleaning (indicator 1), 50% for electricity (indicator 2), 66% for paper (indicator 1). There are also some Dutch results that show average or low scores: 10% core level GPP for construction (indicator 1), 23% core level GPP for catering (indicator 2), 3% comprehensive level GPP on gardening (indicator 2) and 8% core level GPP for transport (indicator 1).

3.7 Sweden

Figure 3.15: Overall scores Sweden on indicator 1

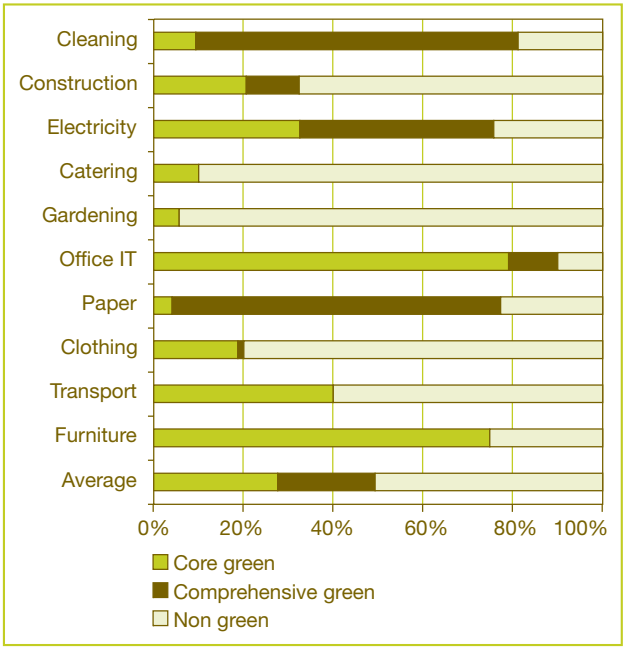
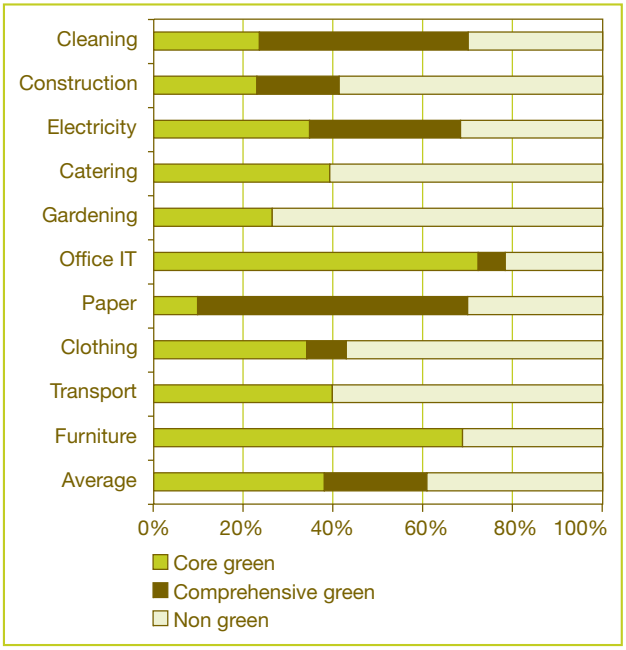


Figure 3.16: Overall scores Sweden on indicator 2



Sweden's average results for indicator 1 show 28% core level of GPP and 22% comprehensive level of GPP which sums up to 49% of green purchases. Hence, 51% of the procurement value can be considered as being non-green. The average results for indicator 2 are 61% green contracts (38% core level of GPP and 23% comprehensive level of GPP) and 39% non-green contracts.

Sweden's results show a couple of high scores: cleaning (81% green level of GPP for indicator 1), electricity (76% green level of GPP for indicator 1), office IT (90% green level of GPP for indicator 1), paper (77% green level of GPP for indicator 1) and furniture (75% green level of GPP for indicator 1).
Sweden's results show significantly lower scores for the product groups construction (33% green level of GPP for indicator 1), catering (10% green level of GPP for indicator 1), gardening (6% green level of GPP for indicator 1) and clothing (20% green level of GPP for indicator 1).

3.8 United Kingdom

Figure 3.17: Overall scores United Kingdom on indicator 1

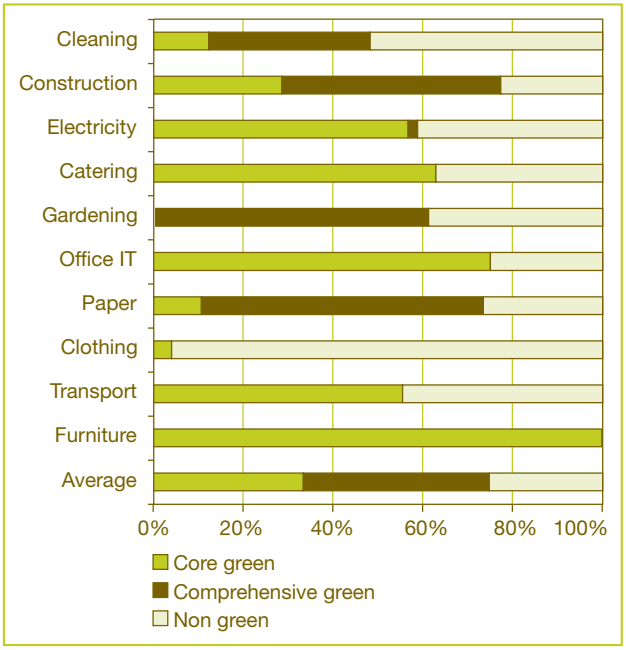
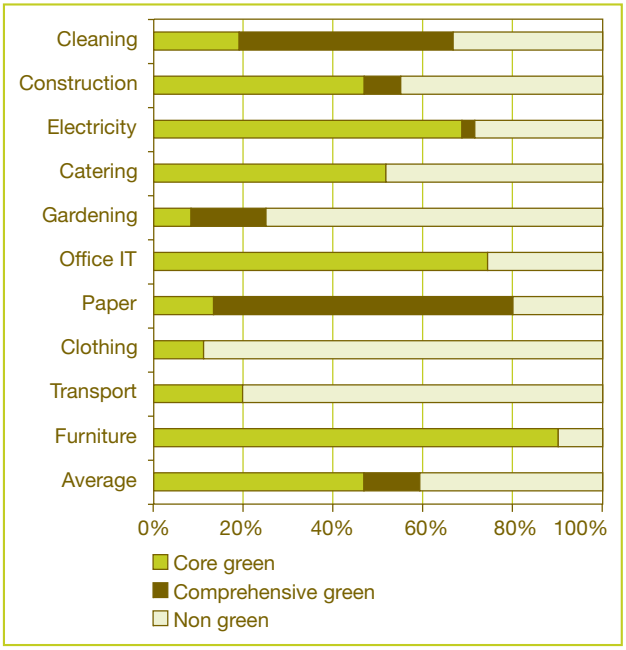


Figure 3.18: Overall scores United Kingdom on indicator 2



United Kingdom's average results for indicator 1 show total green purchases of 75% (33% core level of GPP and 41% comprehensive level of GPP) and 25% of non-green purchases. The average results for indicator 2 are 47% core level of GPP and 12% comprehensive level of GPP, which sums up to 59% green contracts. Hence 41% of the contracts can be considered as being non-green.

The results of the United Kingdom vary widely on the different product groups. In six out of ten product groups the green level of GPP for indicator 1 (core and comprehensive level combined) exceeds 60% green level of GPP (from 61% for gardening and 63% for catering to 77% for construction and 100% for furniture). The other four product groups score from as high as 59% on electricity to as low as 4% on clothing.

Concerning construction in the UK, there are two interesting observations: (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 behaviour is the result of the fact that one respondent in the UK indicated to have 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 a major capital rebuild programme. As a result of the new buildings in the year of our study, the organisation spent an substantial amount of money on various construction projects.
This case is a good example of the difference between 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 indicate 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 when one is interested in the general implementation of GPP in a country (the change in mentality of public purchasers).

4 Green Public Procurement per product group

Chapter 3 presented an overall picture of the quantitative levels of Green Public Procurement per country. The current chapter provides some more detailed information per product group. For each product group, we compare the results of the seven Member States (indicators 1 and 2). Furthermore, we report how often (%) respondents said to have used a certain green criterion in their procurement contracts. These criteria are linked to a core or comprehensive level of GPP. A respondent complying with all core criteria within a product group is said to have a core level of GPP. If, in addition, the respondent complies with the comprehensive criteria, he or she attains a comprehensive level of GPP. This chapter shows to what extent the respondents comply with the green criteria.

The results for indicators 1 and 2 basically follow from the 'score' (core green, comprehensive green or non-green) of a respondent on a product group. For indicator 1, these scores are multiplied with the corresponding volume spent by the respondent. For indicator 2, the scores are multiplied with the number of organisations a respondent purchases on behalf of (1 or higher)[6].

4.1 Summary

The figures and tables below show that the levels of GPP differ widely between the ten product groups (weighted average on the seven Member States). Electricity, office IT and furniture attaining the highest scores; product groups construction, gardening and transport the lowest. Within product groups cleaning and paper, the levels of compliance with comprehensive green criteria are highest among all product groups. Differences in the level of GPP are caused by differences in scores on the underlying core and comprehensive green criteria. We will examine this within the remaining part of this chapter.

Figure 4.1: Overall scores per product group on indicator 1

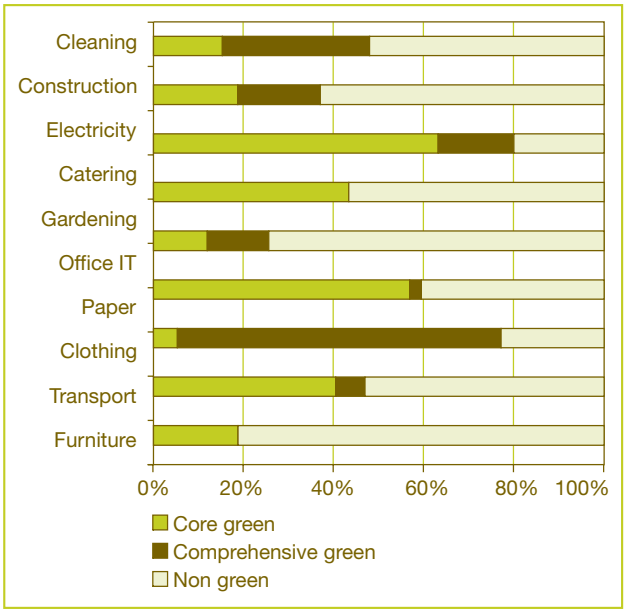


Table 4.1: Overall scores per product group on indicator 1

Indicator 1	Core green	Comprehensive green	Non-green
Cleaning	15%	33%	52%
Construction	19%	18%	63%
Electricity	63%	17%	20%
Catering	43%	0%	57%
Gardening	12%	14%	74%
Office IT	57%	3%	41%
Paper	5%	72%	23%
Clothing	40%	7%	53%
Transport	19%	0%	81%
Furniture	82%	0%	18%

6 For more details on the computation of indicators 1 and 2, we refer to the separate report on methodologies.

Figure 4.2: Overall scores per product group on indicator 2

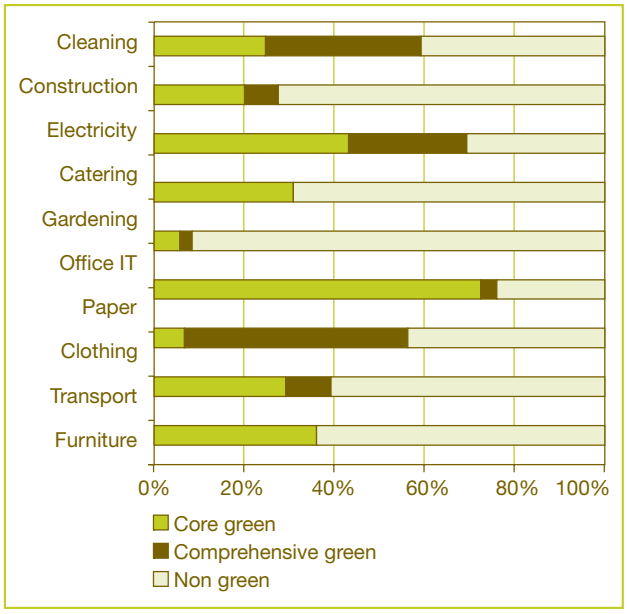


Table 4.2: Overall scores per product group on indicator 2

Indicator 2	Core green	Comprehensive green	Non-green
Cleaning	25%	35%	41%
Construction	20%	7%	72%
Electricity	43%	26%	31%
Catering	31%	0%	69%
Gardening	6%	3%	92%
Office IT	72%	4%	24%
Paper	7%	50%	44%
Clothing	29%	10%	61%
Transport	36%	0%	64%
Furniture	77%	0%	23%

4.2 Cleaning products & services

For this product group 351 out of 601 respondents concluded a procurement contract in 2006 or 2007. Variation in the level of GPP between the member states is high[7]. As for Austria and Germany, levels of GPP are low, due to the relatively low score on the sole core green criterion (on the avoidance of hazardous substances). In case the contracted services comply with an appropriate ecolabel, such as the European Ecolabel, the contract is identified to be core green too[8]. Within most Member States, scores on the two comprehensive green criteria are remarkably high (see Table 4.3).

In addition, we analysed the correlation between the GPP level of a respondent and the way he has implemented Green Public Procurement within his organisation (see Chapter 2). For some product groups, this leads to significant results[9]. For the product group cleaning for example, the GPP level is significantly higher within organisations that have an environmental component in their procurement policy. 62% of the organisations having such a policy attains a core or comprehensive level of GPP. With regard to the other organisations, only 41% attain those levels.
Hence: for this product group, implementation efforts pay off.

Figure 4.3: Overall scores product group cleaning

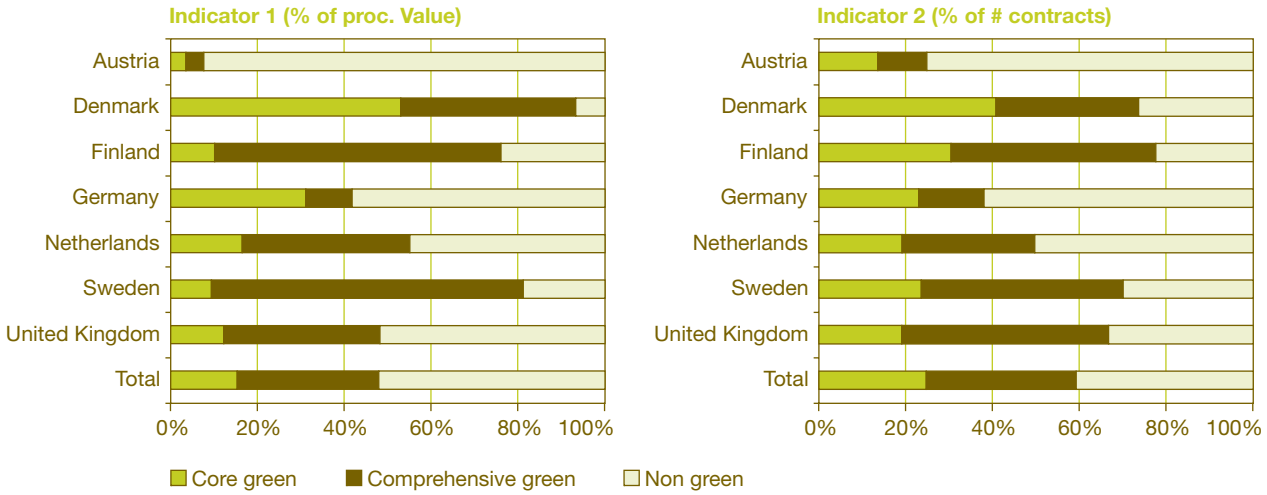


Table 4.3: Percentage of organisations complying with a green criterion for product group cleaning

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Does the contractor avoid the use of hazardous substances?	35%	55%	48%	39%	44%	66%	56%	Core
Are all cleaning staff employed in carrying out the service regularly trained for their various tasks?	52%	87%	81%	47%	79%	79%	95%	Compre-hensive
Does the contractor use reusable microfibre cloths and/or apply dry-cleaning techniques for linoleum flooring where appropriate?	60%	67%	66%	48%	66%	80%	56%	Compre-hensive
Is the acquired product or service being certified by an ecolabel or does it comply with underlying criteria of an ecolabel?	42%	80%	41%	42%	48%	61%	39%	Core (for certain ecolabels)

7 'Total' in the figures below refers to the weighted average over all countries.

8 The tables in this chapter contain the percentages of all respondents who indicated that their product or service was certified by an ecolabel or did comply with the underlying criteria. It must be noted, that a 'yes'-answer to this question does not automatically lead to a green level of public procurement. This depends on the actual ecolabel or applied criteria.

9 Based on a so-called Pearson Chi-Square statistical test. Only statistical significant results are presented in this report. This means that with high confidence (95%), the found results are 'real' and not based on statistical chance.

4.3 Construction

For this product group 188 out of 532 respondents concluded a procurement contract in 2006 or 2007. For most Member States, the GPP levels are relatively low, except for the UK. A closer look at the percentages per criterion, shows us that the majority of the constructed buildings are not guaranteed free of hazardous materials. This explains the overall low level of GPP to a considerable extent.

It appears that most buildings have been designed so as to reduce the energy consumption. What are these energy-saving measures that have been taken? The table below shows that double glazing and insulation have been applied most frequently.

Figure 4.4: Overall scores product group construction

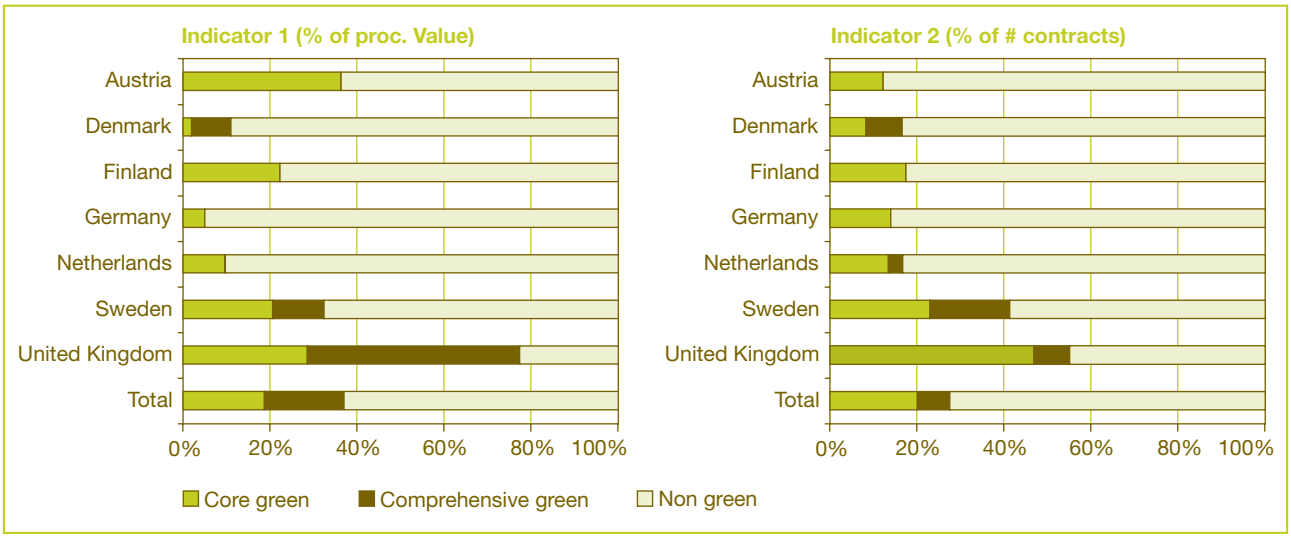


Table 4.4: Percentage of organisations complying with a green criterion for product group construction

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Has the building been designed and built to reduce the amount of energy consumed in use?	85%	68%	92%	100%	91%	98%	100%	Core
Are all sanitary and kitchen water facilities being equipped with the latest water-saving technologies available on the market?	40%	51%	48%	63%	44%	59%	55%	Core
Has the contracted party declared that the no hazardous materials/substances have been used in the construction?	33%	33%	17%	42%	28%	37%	35%	Core
Does all timber used in the building come from legal sources?	44%	27%	75%	56%	60%	65%	89%	Core
Has a minimum of the energy demand been defined that has to be provided by localised renewable energy sources?	13%	15%	0%	28%	15%	12%	22%	Compre-hensive

Table 4.5: Energy saving measures taken in product group construction (% of organisations)

What are these energy-saving measures (multiple options)?	Austria	Denmark	Finland	Germany	The Netherlands	Sweden	United Kingdom
Natural ventilation	32%	39%	0%	58%	30%	24%	75%
Double glazing	56%	70%	39%	86%	67%	67%	90%
Insulation	68%	70%	55%	86%	63%	71%	90%
Design to make best use of natural light	44%	51%	13%	86%	40%	37%	75%
Other	12%	21%	23%	28%	23%	31%	40%

4.4 Electricity

For this product group 320 out of 551 respondents concluded a procurement contract in 2006 or 2007. The country differences on the level of GPP are clearly reflected in the scores on the separate green criteria. Austria and the Netherlands attain the highest levels of GPP; within these countries a large majority of the governmental organisations procured electricity from renewable sources (for at least 50%).
Based on a correlation analysis, it follows that organisations having an action plan for meeting goals on green procurement, attain significantly higher levels of GPP. 75% of the organisations having such a plan, buys green, against 61% for the other organisations only.

For some countries, large differences can be seen in the levels of GPP based on the procurement value on the one hand (i.e. indicator 1), and based on the number of contracts on the other (indicator 2). For Austria, this difference is large in particular: comprehensive green is high on indicator 2, whereas core green is the dominant level on indicator 1. This is due to the fact, that in Austria one governmental organisation has a very large contract. The contract that was concluded by this organisation, matches a core green level. This explains the high percentage of core green public procurement on indicator 1. On indicator 2, the impact of this contract is much smaller.

Figure 4.5: Overall scores product group electricity

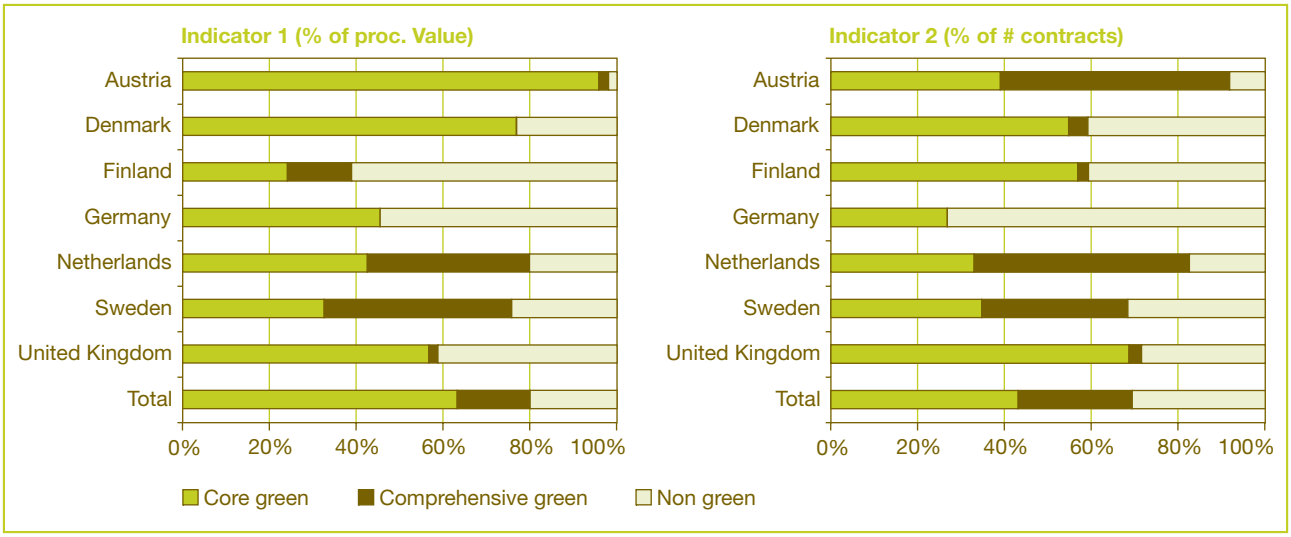


Table 4.6: Percentage of organisations complying with a green criterion for product group electricity

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Does (part of) the supplied electricity come from renewable energy sources?	88%	49%	35%	26%	80%	62%	66%	Core (50-99%) or comprehensive (100%)
Is the acquired product or service being certified by an ecolabel or does the product or service meet its underlying criteria?	33%	4%	17%	7%	43%	46%	13%	Core (for certain ecolabels)

4.5 Catering & food

For this product group 141 out of 527 respondents concluded a procurement contract in 2006 or 2007[10]. In this study, no comprehensive green criteria have been taken into account. So respondents could attain a core green level of GPP only. Differences on indicator 2 are relatively small, except for Finland. Within this country, a small part of the supplied products was produced organically (29% against a Green-7 average of 57%) and selected according to the natural season (19% against 42%). As can be seen from a comparison between indicators 1 and 2, in Germany, one or more large organisations concluded core green catering contracts.

Large differences can be seen between organisations. For example, 46% of the organisations having an environmental component in their procurement policy, buys green catering, against 6% for other organisations only. Similar relations exist between organisations that have an action plan for green procurement and the attained level of GPP.

Figure 4.6: Overall scores product group catering & food

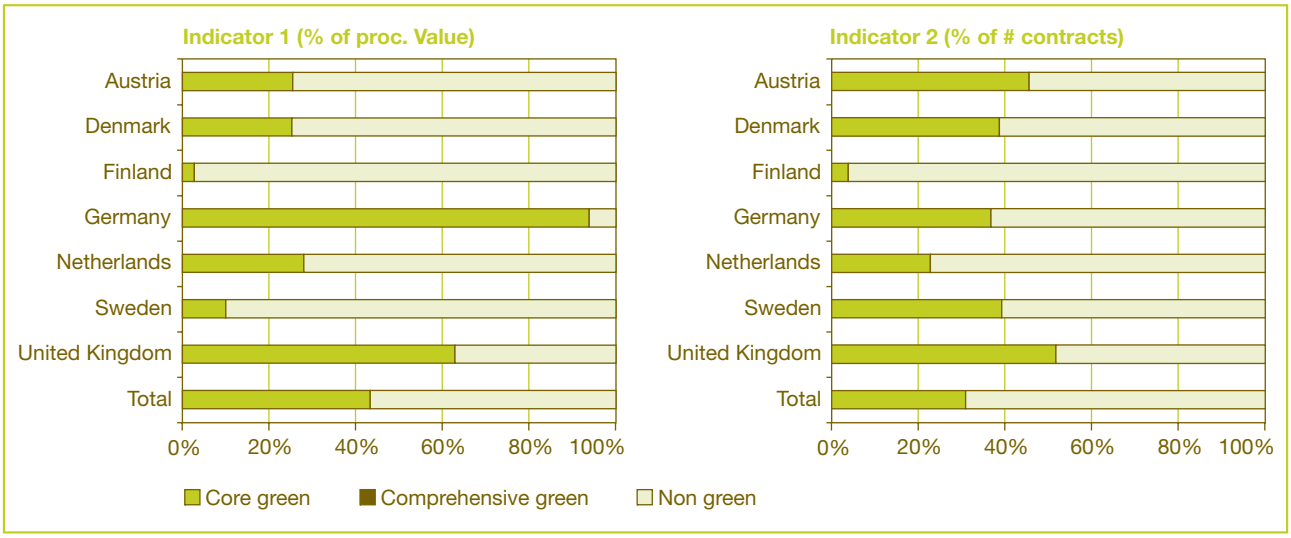


Table 4.7: Percentage of organisations complying with a green criterion for product group catering & food

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Has part of the range of products been produced organically?	63%	84%	29%	56%	42%	57%	67%	Core
Are the main fruit, vegetables and fish that are used whenever possible, being selected according to the season based on the geographical location in which the assignment is performed?	39%	45%	19%	61%	34%	22%	74%	Core
Is the acquired product or service being certified by an ecolabel or does the product or service meet its underlying criteria?	26%	14%	19%	25%	24%	22%	29%	Core (for certain ecolabels)

10 Results for Sweden are based on less than 10 observations.

4.6 Gardening

For this product group 109 out of 504 respondents concluded a procurement contract in 2006 or 2007[11]. The overall level of GPP for gardening is relatively low, compared to other product groups. Results between countries differ widely, on the level of a single criterion too. A comprehensive level of GPP can be attained only in case the acquired soil improvers comply with (underlying criteria of) a certain ecolabel, such as the European Ecolabel.

Figure 4.7: Overall scores product group gardening

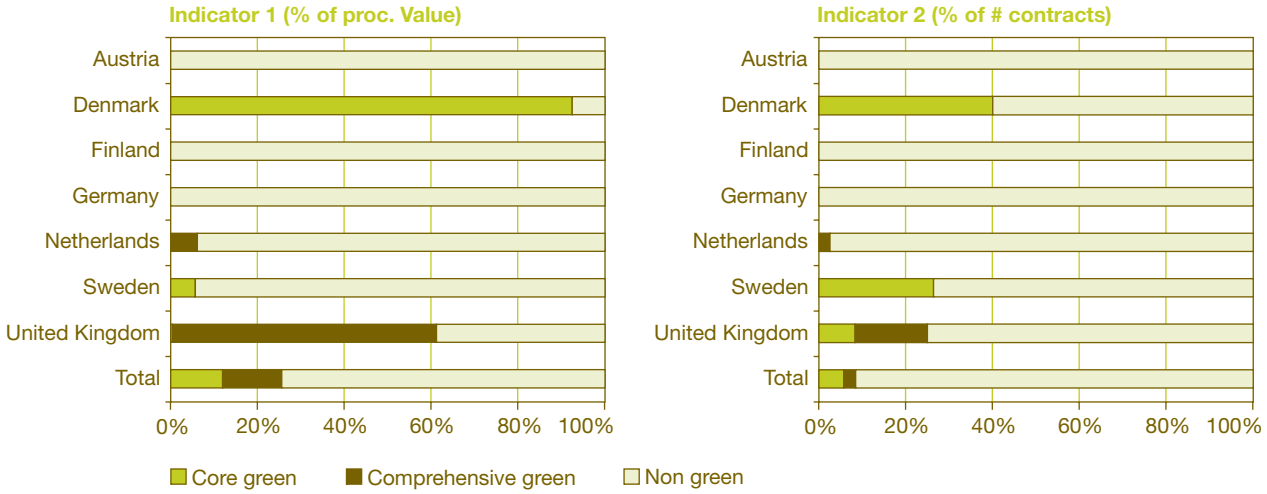


Table 4.8: Percentage of organisations complying with a green criterion for product group gardening

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Did you purchase gardening machines that can run on unleaded petrol with a benzene content of <1.0 % by volume, alkylate petrol, class A diesel oil, or biofuel-based engine fuel?	22%	46%	27%	28%	8%	43%	39%	Core
Are the following substances being excluded from the purchased products? Peat, Sewage sludge	14%	46%	0%	42%	27%	45%	63%	Core
Are the acquired soil improvers being certified by an ecolabel or does the product meet its underlying criteria?	20%	23%	48%	16%	20%	28%	52%	Comprehen-sive (for certain ecolabels)

11 Results for Denmark are based on less than 10 observations.

4.7 Office IT Equipment

For this product group 278 out of 524 respondents concluded a procurement contract in 2006 or 2007. As can be clearly seen, overall levels of GPP for this product group are high. Germany scores highest of the Green-7; 93% of the respondents acquired IT equipment meeting the latest Energy Star standards, and/or has a sustainable design. Within some countries, organisations acquired equipment complying with ecolabel standards like Nordic Swan or Blaue Engel.

Again, the level of GPP is highly correlated to the way respondents have implemented sustainable procurement within their organisation. 76% of the respondents who said to have a procurement policy containing environmental aspects, attains a green level (core or comprehensive). This holds for 45% of the other organisations only. Similar percentages hold for the question whether an organisation has a sustainable procurement action plan.

Figure 4.8: Overall scores product group office IT equipment

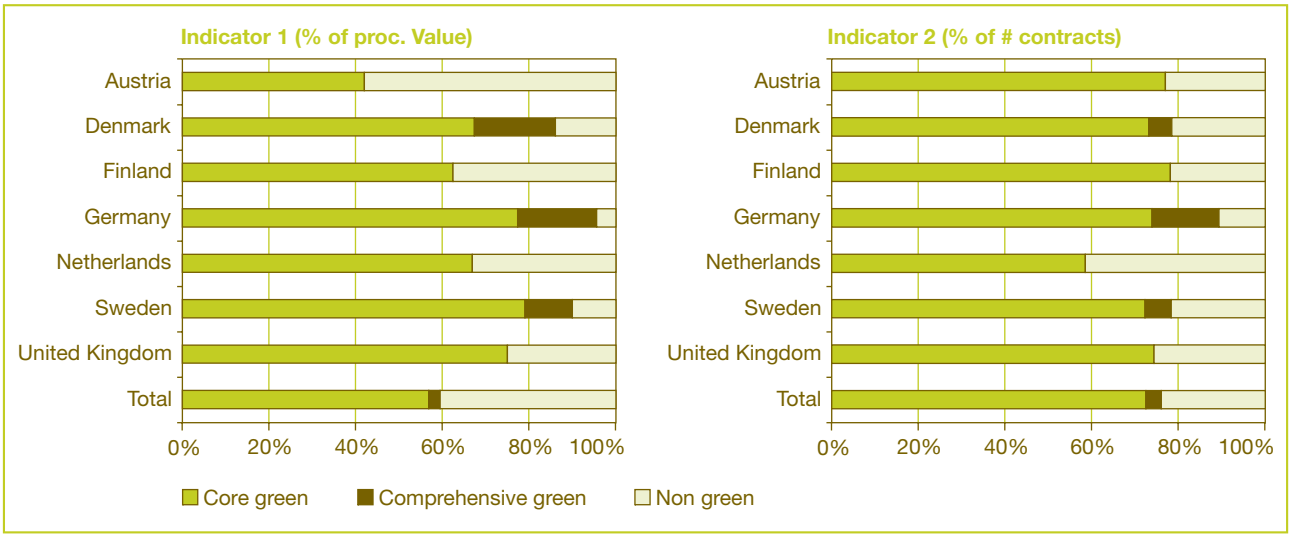


Table 4.9: Percentage of organisations complying with a green criterion for product group office IT equipment

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Do (part of the) products meet the latest ENERGY STAR standards for energy performance?	69%	70%	60%	93%	59%	82%	70%	Core
Have PCs and notebooks been designed so that: The memory is readily accessible and can be changed; The hard disk and, if available, the CD drive and/or DVD drive, can be changed?	96%	50%	70%	93%	77%	82%	81%	Core
Is the acquired product or service being certified by an ecolabel or does the product or service meet its underlying criteria?	24%	36%	31%	44%	22%	52%	30%	Core or compreh. (depending on ecolabel)

4.8 Paper

For this product group 285 out of 541 respondents concluded a procurement contract in 2006 or 2007. Overall levels of GPP are relatively high for the product group paper. Remarkably, the level of comprehensive green procurement is highest of all product groups. This is due to the very high percentage of organisations that acquired ecolabel compliant paper (European Ecolabel, Blaue Engel or Nordic Swan).

Figure 4.9: Overall scores product group paper

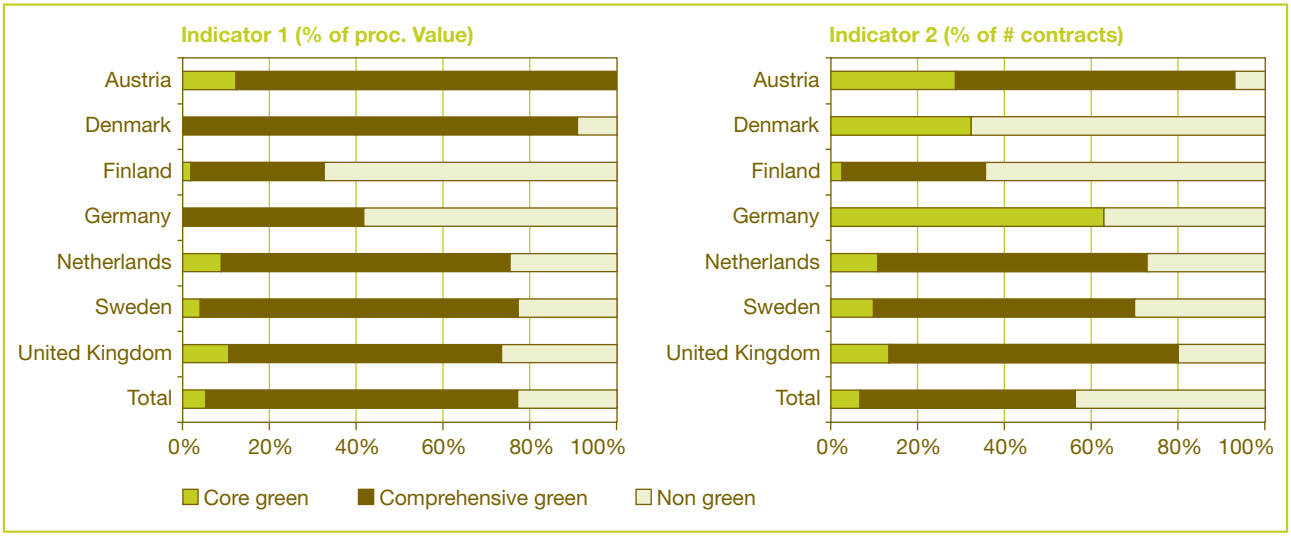


Table 4.10: Percentage of organisations complying with a green criterion for product group paper

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Has all (recycled) office paper been made from 100% recovered paper fibres?	23%	35%	20%	9%	34%	36%	7%	Core
Is all paper at least Elementary Chlorine Free (ECF) or Totally Chlorine Free (TCF)	92%	68%	33%	80%	74%	78%	80%	Core
In case of paper based on virgin fibres, do the virgin wood fibres for pulp production come from sustainable management forests?	32%	47%	41%	47%	55%	13%	87%	Core
Is the acquired product or service certified with an ecolabel or does the product or service meet its underlying criteria?	77%	80%	75%	90%	72%	87%	87%	Comprehensive (for certain ecolabels)

4.9 Textiles

For this product group 137 out of 514 respondents concluded a procurement contract in 2006 or 2007. Country differences are relatively high for this product group. In Denmark, the majority of the acquired clothing meets ecological criteria of certain ecological standards or ecolabels. Within Finland and the UK, a small part of the products meets such criteria.

Figure 4.10: Overall scores product group textiles

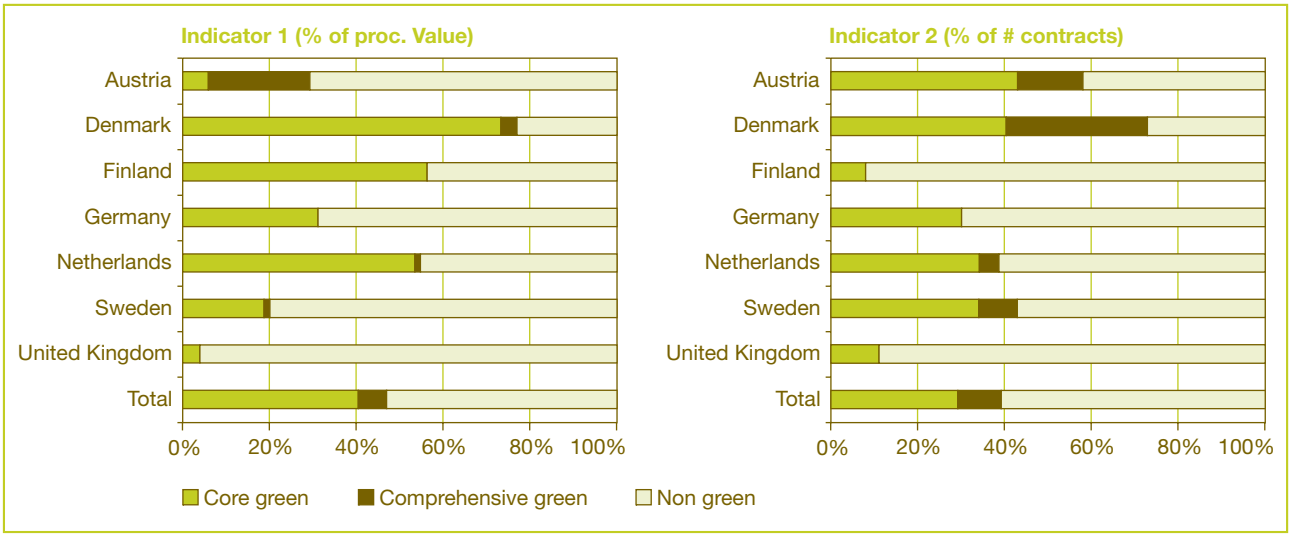


Table 4.11: Percentage of organisations complying with a green criterion for product group textiles

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Do the products meet the ecological criteria relating to the product itself and production processes of the Öko-Tex Standard 100 or European Ecolabel?	18%	69%	17%	25%	25%	32%	0%	Core
Is the acquired product or service being certified by an ecolabel or does the product or service meet its underlying criteria?	50%	50%	11%	16%	29%	21%	11%	Core or compreh. (depending on ecolabel)

4.10 Transport

For this product group 195 out of 511 respondents concluded a procurement contract in 2006 or 2007. The level of core GPP for transport is relatively high. The majority of the acquired vehicles comply with certain maximum CO_2 levels. The EURO 5 standard criterion appears to be less complied with, as can been seen from the table. In this study, no comprehensive green level could be attained for this product group.

For Austria and Germany, differences between indicator 1 and 2 results are high. This can be explained (again) by few major buyers within these countries. In Austria the acquired vehicles did not meet the core level criteria. In Germany, on the other hand, they did.

Figure 4.11: Overall scores product group transport

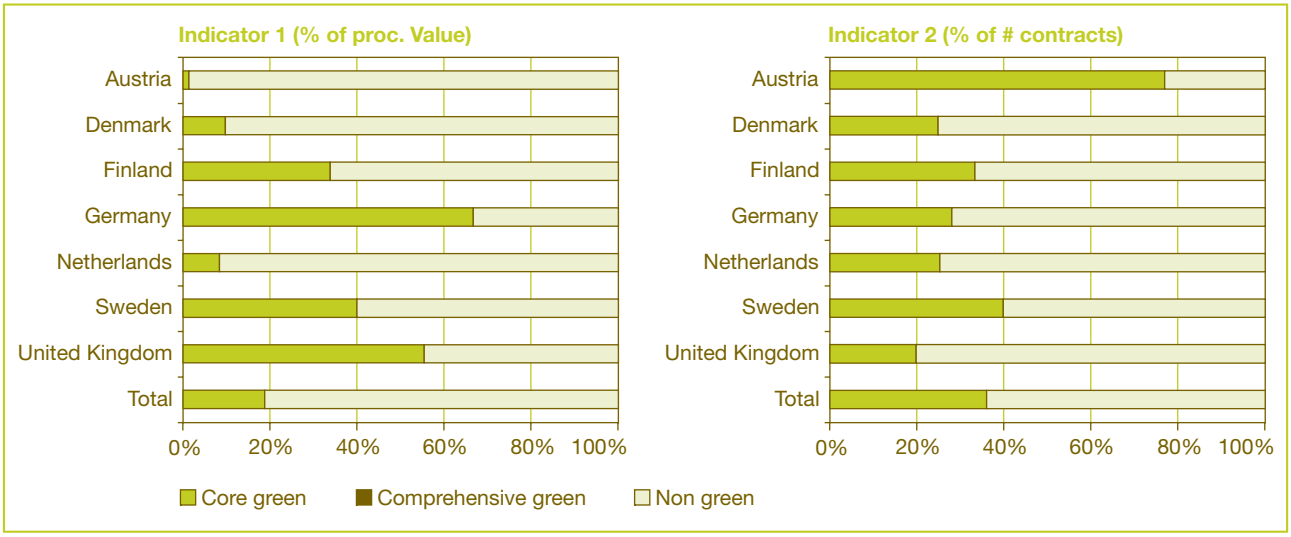


Table 4.12: Percentage of organisations complying with a green criterion for product group transport

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Do (part of) the vehicles comply with the following maximum average CO_2 emissions per vehicle segment (see methodologies report)?	85%	77%	60%	53%	47%	81%	59%	Core
Do the purchased vehicles comply with the EURO 5 standard?	67%	27%	46%	40%	26%	51%	31%	Core

4.11 Furniture

For this product group 219 out of 522 respondents concluded a procurement contract in 2006 or 2007. As for transport, no comprehensive level of GPP could be attained on furniture. However, as can be seen from the figures, the large majority of the organisations meet the core level criteria. This is partly due to the fact that quite a large part of the acquired furniture has been certified by appropriate ecolabels, such as Bra Miljöval, Green Guard, and Blaue Engel.

From the correlation analyses it appears that (again) organisations having an environmental oriented procurement policy, buy green furniture more often (70%) than others (50%). Similar (significant) correlations can be seen between the level of GPP and the tendency to evaluated supplier proposals on Life Cycle Costing (instead of on the procurement costs only).

Figure 4.12: Overall scores product group furniture

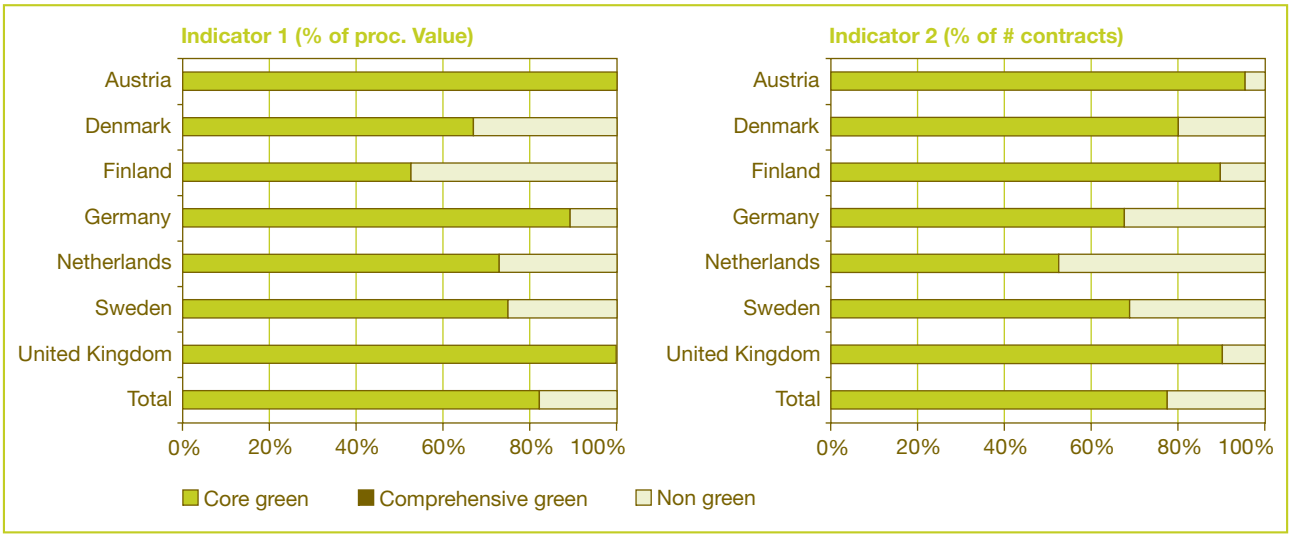


Table 4.13: Percentage of organisations complying with a green criterion for product group furniture

Criterion	AU	DK	FIN	GER	NL	SWE	UK	GPP-level
Do all wood and wood-based materials come from legally sourced timber?	100%	57%	72%	74%	56%	78%	93%	Core
Is the acquired product or service being certified by an ecolabel or does the product or service meet its underlying criteria?	18%	48%	41%	53%	27%	46%	40%	Core (for certain ecolabels)


4433
4434
4436

5 CO_2 impact of Green Public Procurement

Apart from indicators that measure the levels of GPP, we also have developed two indicators that measure the impact of GPP in terms of CO_2 and in terms of costs for the user of a product (indicator 3 and 4 respectively). This chapter describes the main results on indicator 3, broken down by country, while results on indicator 4 are presented in chapter 6. More detailed data sheets are presented in Appendix E.

5.1 CO_2 impact of GPP per functional unit

The CO_2 impact of Green Public Procurement is determined by the difference in CO_2 emissions between a green product and a non-green product. The following limitations apply to our analysis:

- We only focus on CO_2 emissions; other environmental impacts are not taken into account
- CO_2 equivalents are not included in our analysis
- The study does not include a full Life Cycle Analysis per product group

For a more detailed description of these limitations, we refer to the separate report on methodologies.

The differences in CO_2 emissions between a green product and a non-green product allow us to calculate the CO_2 per functional unit of a product group. "Per" functional unit means for example per vehicle for the product group transport or per m^2 floor cleaned for cleaning services. The table below illustrates the difference in CO_2 impact of the ten product groups, both for the core and comprehensive levels of GPP. The percentages indicate the difference between the CO_2 emissions of a core and comprehensive green product compared to a non-green product.

The table shows that for all product groups, GPP results in a reduction of CO_2 emissions. Only for core green cleaning services and catering, we have found that GPP has no CO_2 impact. Electricity, construction, cleaning services and paper are the only product groups where a distinction between a core and comprehensive product is made. For furniture the CO_2 impact was not calculated since it was found that reliable CO_2 data was not available concerning compliance with the criteria included in the questionnaire. For the other product groups only core criteria were applied and therefore the percentage between core and comprehensive is equal (as comprehensive is at least core).

Table 5.1: CO_2 impact of GPP per functional unit. Negative numbers imply reductions in CO_2 emissions.

Product group	unit	core	compre-hensive
Cleaning services	m^2 cleaned	0%	-100%
Construction	building	-69%	-70%
Electricity	kWh	-26%	-100%
Catering & food	lunch prepared	0%	
Gardening	m^2 garden	-100%	-100%
Office IT equipment	computer	-24%	-24%
Paper	kg paper	-97%	-89%
Textiles	kg textile	-76%	-76%
Transport	vehicle	-12%	

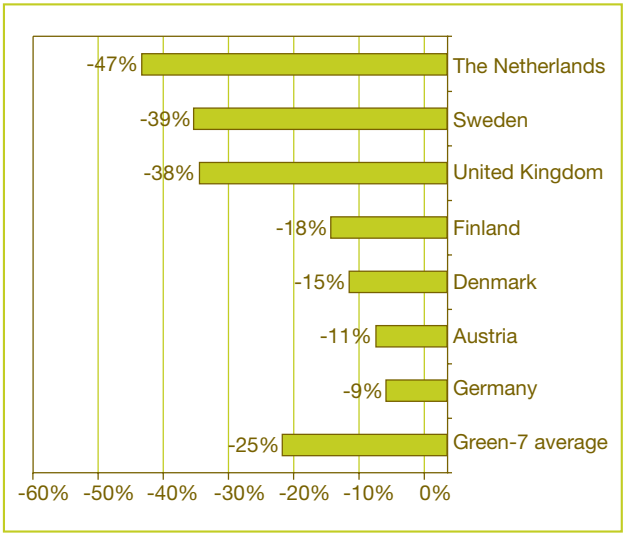
5.2 CO_2 impact of GPP in 2006/2007

In this section, we have linked the results of the CO_2 impact per functional unit to the results of indicator 1 (level of green procurement in terms of procurement value). This link allows us to determine the actual CO_2 impact of GPP in 2006/2007. It must be noted that no results are shown for the product group furniture, since it was found that no reliable financial data was available concerning the criteria asked in the questionnaire. Firstly, we will give a summary of the results for all countries and then we will break down the results on a country level.

5.2.1 Summary of results

The CO_2 impacts of GPP in the Green-7 in 2006/2007 are shown in Figure 5.1. These results are averaged for all product groups and weighted on the basis of the relative total CO_2 emissions per product group per country. The numbers in the figure should be interpreted in the following way: **a negative percentage means that CO_2 emissions are reduced because of GPP. Therefore, a negative CO_2 impact means that less CO2 is emitted.**

Figure 5.1: CO_2 impact of GPP per country. Negative numbers imply reductions in CO_2 emissions.



As can be seen in the figure, the average reduction of CO_2 emissions because of GPP in the Green-7 is a substantial 25%. It is important to note that this 25% specifically relates to the green purchase of the ten product groups subject to this study. The average CO_2 emissions impact varies from -9% in Germany to -49% in the Netherlands. Three out of the seven countries (i.e. The Netherlands, Sweden and the United Kingdom) have a large CO_2 impact of around -40% or higher. In the other four countries, the CO_2 impact of GPP is a bit lower at around -13%

In order to explain these differences between countries, we need to examine the various parameters that determine the overall CO_2 impact of GPP in a country. These parameters are (see section 1.3 for a more detailed description):

1. The country-specific levels of green procurement per product group. If this level is zero, then the CO_2 impact of this product group logically is also 0%. The higher the level of GPP, the higher the CO_2 impact can become.
2. The country-specific CO_2 impact per functional unit of a product group (e.g. CO_2 impact per purchased vehicle or per m^2 cleaning services). Some product groups have a higher CO_2 impact per functional unit (e.g. paper), while the CO_2 impact of GPP for other product groups may be zero (e.g. catering)

With the use of these two parameters, we determine the 2006/2007 CO_2 impact per product group for a specific country. These results will be presented in subsequent paragraphs. To aggregate all product groups on a country level, a third parameter is used:

3. The country-specific relative total CO_2 emissions per product group, which are used to weigh the product groups into one figure per country. The higher a relative CO_2 emissions volume of a product group, the more the overall CO_2 impact of GPP in the country is determined by the financial impact of this product group. Below we show the results for the average CO_2 emissions. As can be seen from the table, **electricity, construction and paper are essentially the only three product groups that determine a country's overall CO_2 impact of GPP.**

Table 5.2: Average relative CO_2 emissions per product group

product group	Relative CO_2 emissions
Cleaning services	0%
Construction	31%
Electricity	63%
Catering & food	0%
Gardening	0%
Office IT equipment	0%
Paper	5%
Textiles	0%
Transport	0%

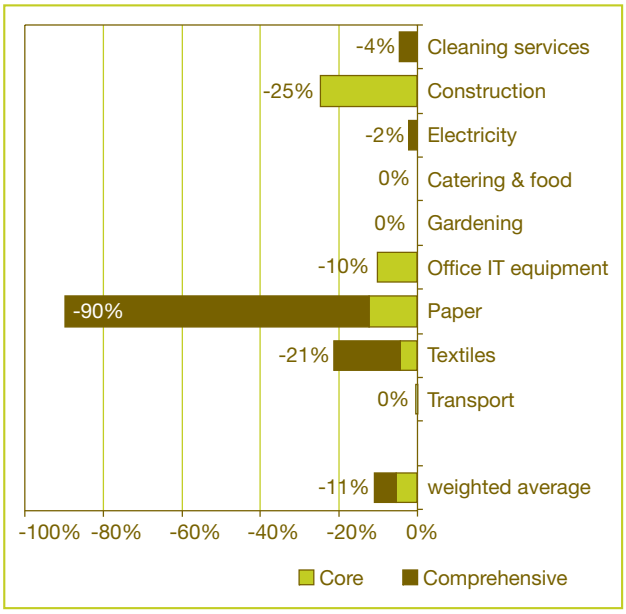
These three parameters allow us to explain the high CO_2 impact of GPP in the Netherlands as compared to the other countries. It is a result of the fact that for electricity, the level of green purchases is high in the Netherlands (see chapter 3). Especially the purchasing of comprehensive green electricity (i.e. 100% RES-E) is high compared to the other countries. The purchasing of electricity, which has a comprehensive green CO_2 impact per kWh of -100%, weighs heavily in the determination of the overall figures. The same applies for Sweden. In the UK, the large impact is explained by the large percentage of green procurement for construction. In the following sections, we will examine the CO_2 impacts per product group more closely on a country level. It should be noted that for catering services, the CO_2 impact is zero in every country, since it was found that the use of green criteria (i.e. procurement of food that is produced organically) does not have a CO_2 impact for this product group. For more details, we refer to the separate report on methodologies.

5.2.2 Austria

In Austria, the use of green criteria in purchasing has led to a reduction of CO_2 emissions of 11%. The largest CO_2 impact can be found for paper, of which 100% of the purchases are green, as was found in chapter 3. The CO_2 impact of GPP of transport and gardening is 0%, since the level of GPP for these product groups is also 0% in Austria.

It is interesting to note that for electricity, of which 96% of the purchases are core green, the CO_2 impact is low. This is a result of the fact that the energy mix of Austria already contains a large percentage of RES-E. Therefore, the CO_2 impact for core green electricity in Austria is zero. The 2% impact is completely attributed to the comprehensive green purchases of electricity.

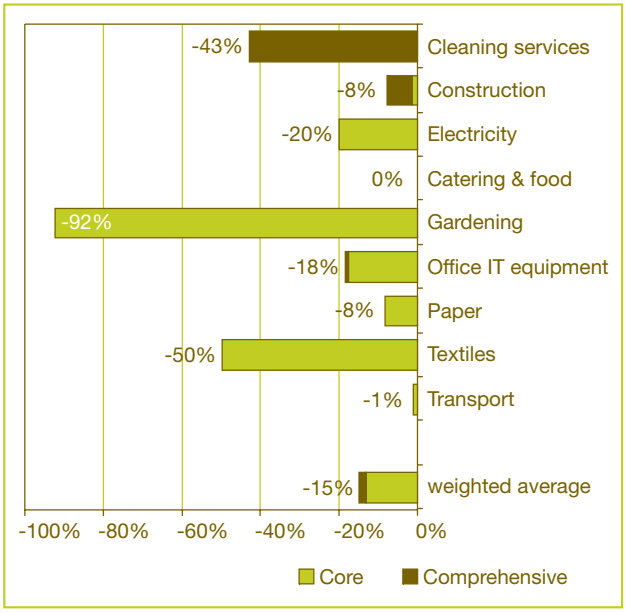
Figure 5.2: CO_2 impact of GPP in Austria. Negative numbers imply reductions in CO_2 emissions.



5.2.3 Denmark

Denmark has an average CO_2 impact of GPP of -15%. The product groups with the higher impact are gardening, textiles and cleaning services, of which the levels of GPP in terms of procurement value are 92%, 77% and 93% respectively. The reason why cleaning services does not have the largest CO_2 impact is because there is only a CO_2 impact for comprehensive green purchases (i.e. the use of microfiber cloths), of which the level is 40% in Denmark. Transport has, as in Austria, a low CO_2 impact from GPP. This is because only 9% of the publicly purchased cars in Denmark can be considered to be green.

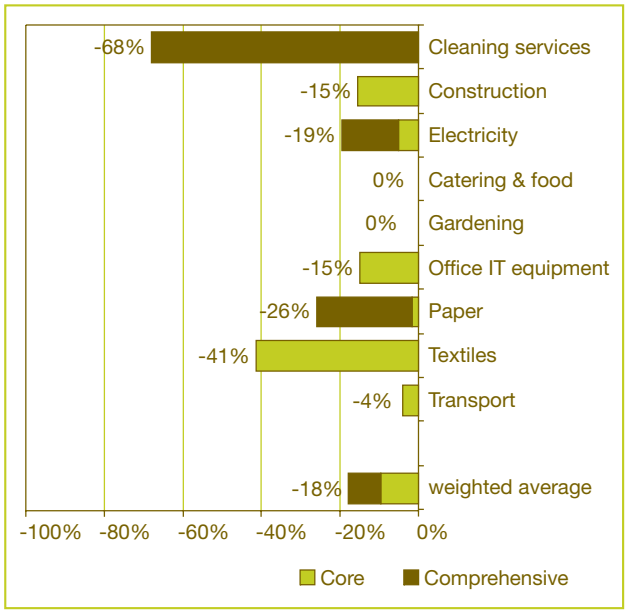
Figure 5.3: CO_2 impact of GPP in Denmark. Negative numbers imply reductions in CO_2 emissions.



5.2.4 Finland

Finland has a CO_2 impact from GPP of -18%. It is interesting to note that for cleaning services, the comprehensive level of GPP is 66%, which results in a high CO_2 impact for this product group. The reason why this does not show in the overall (average) figure, is because the CO_2 emissions of cleaning services are relatively low compared to those of construction and electricity. The CO_2 impact of gardening is 0%, since none of the purchases in Finland can be considered as green for this product group. Again we see that CO_2 reductions resulting from the green procurement of transport is low. This is again a result of the fact that the level of GPP for transport is only 34%. This percentage is even lowered in terms of CO_2 emissions, since the CO_2 impact per vehicle is -12%, which is low compared to other product groups.

Figure 5.4: CO_2 impact of GPP in Finland. Negative numbers imply reductions in CO_2 emissions.

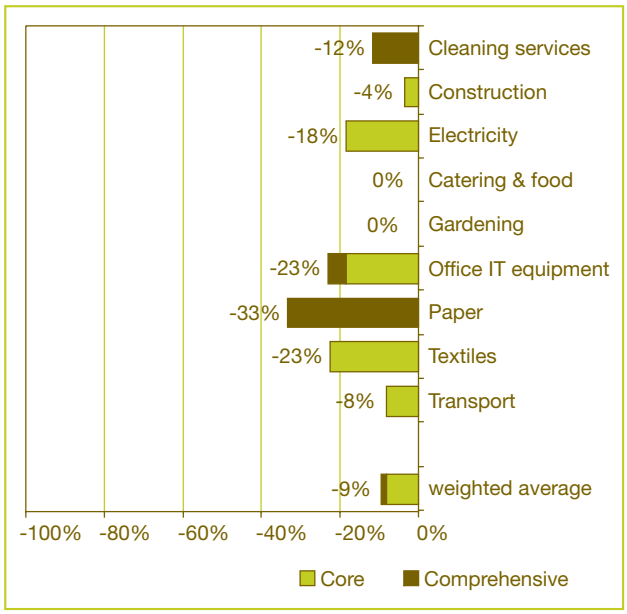


5.2.5 Germany

The country with the lowest CO_2 impact from GPP, compared to the other countries in the Green-7, is Germany. However, the impact can still be considered as substantial with a 9% reduction of CO_2 emissions. The reason why it is not as high as in the other countries, is because the CO_2 impact of those product groups which determine the total CO_2 impact in Germany (i.e. construction and electricity), are low at -4% and -18% respectively.

On the positive side, the CO_2 impact of office IT equipment is highest in Germany compared to the other countries. This is a result of the fact that 96% of the computers and monitors purchased in Germany are green.

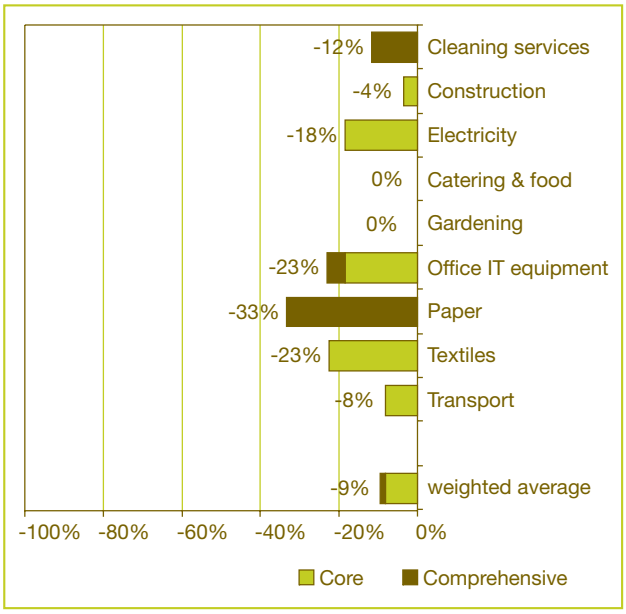
Figure 5.5: CO_2 impact of GPP in Germany



5.2.6 The Netherlands

Although the level of GPP in terms of procurement value in the Netherlands is the lowest of the Green-7, the amount of CO_2 reductions is the highest at 47%. This results from the large amounts of comprehensive green purchases of electricity. 43% of the purchased electricity in the Netherlands has at least 50% electricity from renewable energy sources, and 37% of the electricity is 100% RES-E. Since the fuel mix in the Netherlands does not contain a large proportion op RES-E, the CO_2 reductions can be high, even if only 50% of the electricity is from RES-E.
Furthermore, the CO_2 impact of textiles, cleaning services and paper are also high in the Netherlands. Furthermore, we see again that the CO_2 impact of transport is low, only -1%, since only 8% of the purchased cars are considered as green.

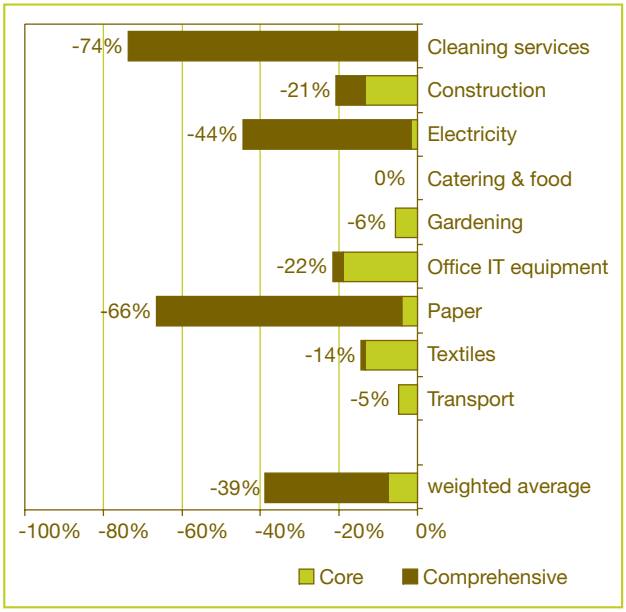
Figure 5.6: CO_2 impact of GPP in the Netherlands. Negative numbers imply reductions in CO_2 emissions.



5.2.7 Sweden

As can be seen in the figure below, the purchasing of comprehensive green products and services has led to a large CO_2 impact of GPP in Sweden. As was explained in section 5.1.1, the high overall CO_2 impact is mainly caused by the purchasing of electricity from 100% electricity from renewable energy sources. What is also striking is that 74% of the cleaning services in public organisations in Sweden can be considered as comprehensive green. This leads to a high CO_2 impact of GPP for this product group. The same applies for the comprehensive purchasing of paper.

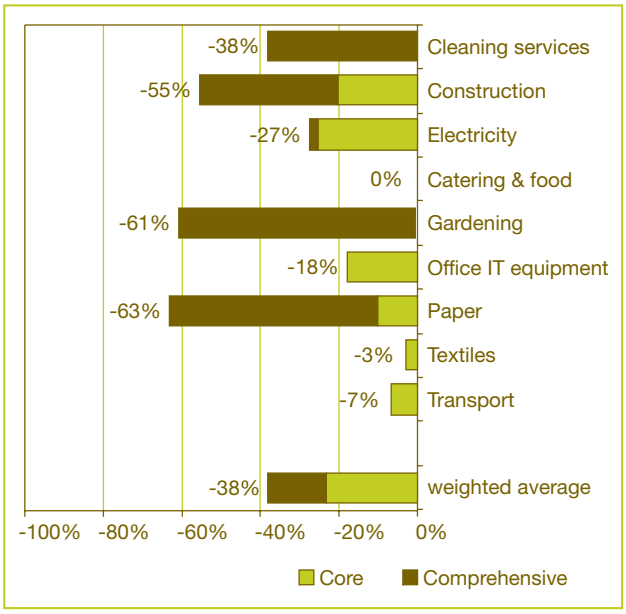
Figure 5.7: CO_2 impact of GPP in Sweden. Negative numbers imply reductions in CO_2 emissions.

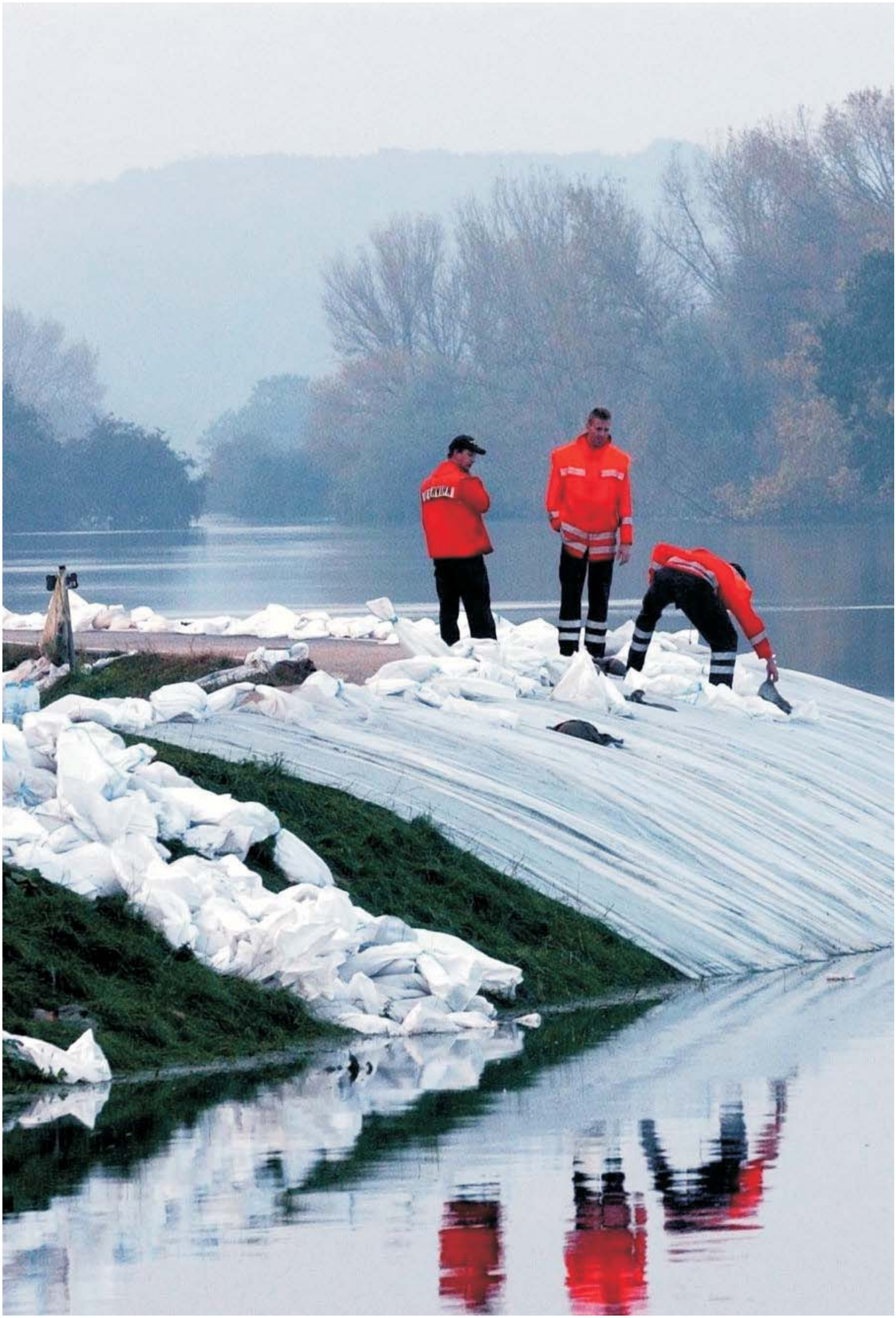


5.2.8 United Kingdom

In the United Kingdom, 38% CO_2 reductions are achieved through GPP compared to the situation in which no GPP would be applied. The main part comes from compliance with core criteria, which is a result of the large amounts of core green electricity in the UK. Furthermore, the amount of comprehensive green buildings in terms of procurement value (see textbox in section 3.1 for a more detailed explanation) is also large in the UK at 49%. Textiles on the other hand, have a low CO_2 impact. Only 4% of the publicly purchased clothing can be considered as green.

Figure 5.8: CO_2 impact of GPP in the United Kingdom. Negative numbers imply reductions in CO_2 emissions.





6 Financial impact of GPP

The previous chapter describes the various impacts of GPP in terms of CO_2. In this chapter, we will present the results for the financial impact of GPP (indicator 4). More detailed data sheets are presented in Appendix F.

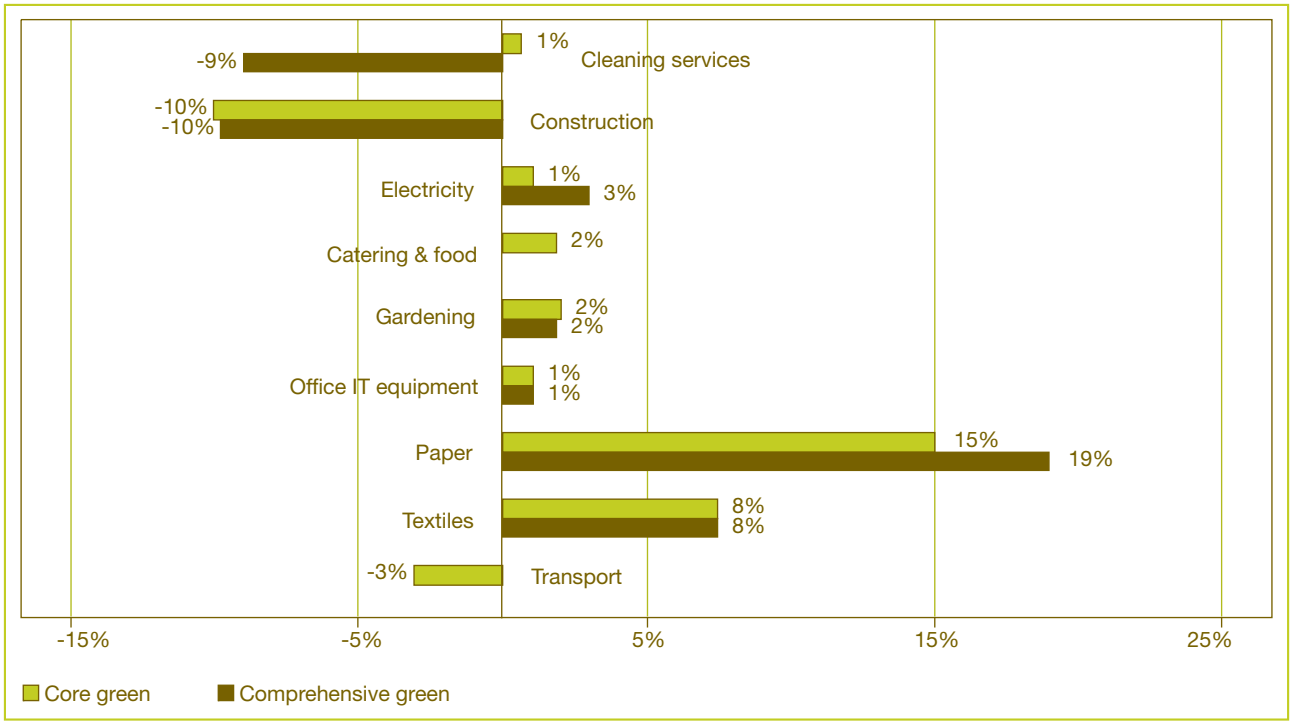
6.1 Financial impact of GPP per functional unit

The financial impact of Green Public Procurement is determined by the differences in costs between a green product and a non-green product. These costs not only relate to purchasing costs, but also to operational costs or costs for disposal. In the separate report on methodologies we have performed Life Cycle Cost (LCC) analyses in order to determine both the cost structure of a product (i.e. the relative percentages of the various elements that make up the total costs for the user of a product) and, for all relevant elements in the user life cycle, the cost ratios of green products as compared to non-green products.

The results of these cost ratios (i.e. the financial impact per functional unit) are shown in the figure below, both for the core and comprehensive levels of GPP. The graph shows how a product group can positively or negatively determine the overall financial impact of GPP, and also to what extent. **If a figure is negative, this means that cost reductions can be achieved for that product group by purchasing green. On the other hand, positive numbers indicate increases in costs from GPP.**

From the graph, we conclude that procurement of green construction, green transport or cleaning services with green comprehensive criteria can result in a negative financial impact (i.e. cost reduction), while procurement of green textiles, green paper or 100% electricity supplied from Renewable Energy Sources (RES-E) can lead to non-negligible increases in costs. Furniture is not included in this analysis, since it was found that no reliable financial data was available concerning the criteria asked in the questionnaire.

Figure 6.1: Financial impact of GPP per functional unit. Negative numbers imply reductions in costs and positive numbers imply increases in costs.



6.2 Financial impact of GPP in 2006/2007

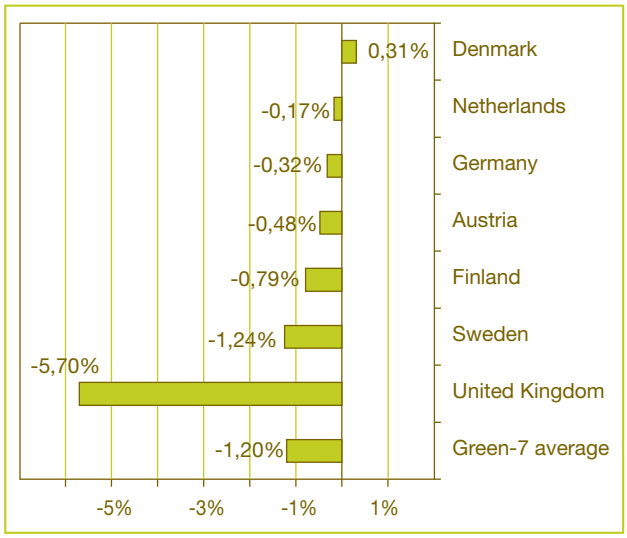
In this section, we have linked the results of the cost ratios and cost structures to the results of indicator 1 (level of green procurement in terms of procurement value). This link allows us to determine the actual financial impact of GPP in 2006/2007. It must be noted that no results are shown for the product group furniture, since it was found that reliable financial data was not available concerning the criteria included in the questionnaire. We will first of all give a summary of the results for all countries and then break the results down further on a country level.

6.2.1 Summary of results

The financial impacts of GPP in the Green-7 in 2006/2007 are shown in Figure 6.2. These results are averaged for all product groups and weighted on the basis of the relative total procurement value per product group per country. The numbers in the figure should be interpreted in the following way: **a negative percentage means that costs are reduced because of GPP. A percentage larger than zero means that costs are increased compared to the situation in which none of the purchases would be green.**

In the Green-7, for which we have found in chapter 3 that around 50% of the purchases are green, the average financial impact of GPP in 2006/2007 is -1%. This means that the use of green criteria in around 50% of the tendering procedures results in an average decrease of costs for public organisations of around 1%. Thus, when taking into account user life cycle considerations, Green Public Procurement does, in contrast to the common perception, not necessarily lead to increases in costs[12]. Better yet, our results show that GPP has actually led to decreases in costs for public organisations in 2006/2007. The reason behind this is that higher purchasing prices of green goods are compensated by lower operating costs.

Figure 6.2: Financial impact of GPP in the Green-7. Negative numbers imply reductions in costs and positive numbers imply increases in costs.



On a country level, the figures vary from -5,70% in the United Kingdom to +0,31 in Denmark. In order to explain these differences, we recapitulate the parameters that influence the financial impact of GPP in a country (see section 1.3 for a more detailed description):

1. The country-specific levels of green procurement per product group. If this level is zero, then the financial impact of this product group is logically 0%. The higher the level of GPP, the higher the financial impact can be, either positive or negative;
2. The financial impact per functional unit of a product group (e.g. financial impact per purchased vehicle or per m^2 cleaning services). Some product groups lead to cost reductions (e.g. construction and transport), while other product groups lead to increases in costs (e.g. paper and textiles).

With the use of these two parameters, we determine the 2006/2007 financial impact per product group for a specific country. These results will be presented in subsequent paragraphs. To aggregate all product groups on a country level, a third parameter is used:

3. The country-specific relative total procurement volumes per product group, which are used to weigh the product groups into one figure per country. The higher a relative procurement volume of a product

12 This result was also found by Öko-Institut and ICLEI in: Costs and Benefits of Green Public Procurement in Europe. Part 1: Comparison of the Life Cycle Costs of Green and Non Green Products, July 2007.

group, the more the overall financial impact of GPP in the country is determined by the financial impact of this product group. Below we show the results for the average procurement values. As can be seen from the table, **construction, electricity, office IT equipment and cleaning services are the product groups that mostly influence the overall financial impact.**

Table 6.1: Average relative procurement values of the Green-7 per product group[13]

product group	Relative procurement value
Cleaning services	6%
Construction	57%
Electricity	17%
Catering & food	2%
Gardening	2%
Office IT equipment	10%
Paper	1%
Textiles	1%
Transport	4%

These three parameters allow us to explain the high financial impact of GPP in the United Kingdom as compared to the other countries. It is a result of the fact that for construction, the level of green purchases is high in the UK (see chapter 3). Construction, with a financial impact per building of -10%, weighs heavily in the determination of the overall figures. The same applies the other way around: Denmark, where the financial impact of GPP is slightly positive, scores low in terms of % of GPP for construction and transport. Since it is mainly these product groups that lead to cost reductions (i.e. they have a negative financial impact per functional unit), the financial impact is not negative but positive as a result of the other product groups for which the level of GPP is higher.

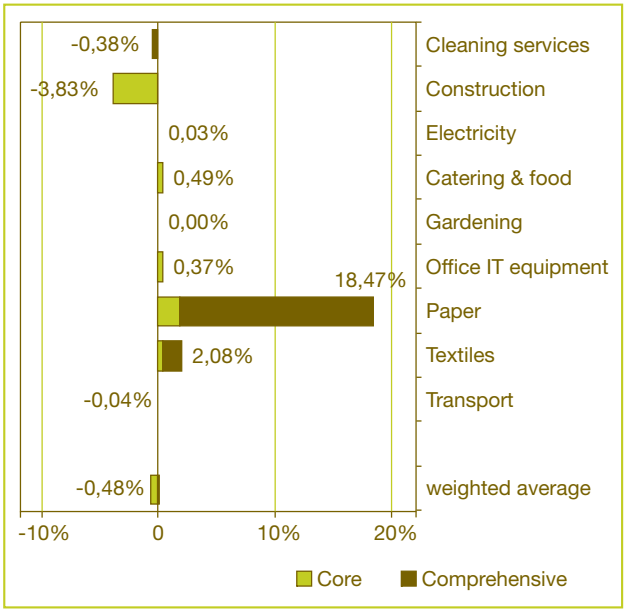
Overall, it is encouraging to conclude that from a life cycle perspective, Green Public Procurement can certainly lead to indirect cost reductions, albeit not much. In the following sections, we will examine the financial impacts per product group more closely on a country level.

13 This data is retrieved from the questionnaire. By adding all the procurement values of all respondents in a country for all product groups, we were able to determine the country-specific relative procurement volumes per product group.

6.2.2 Austria

In Austria, the overall financial impact of GPP is -0,48%. The reason why this number is close to zero is a result of the fact that the level of GPP is low in Austria for those product groups that have a higher financial impact per functional unit, either positive or negative. The only exception to this is the procurement of paper (our results show green criteria are applied in 100% of the paper purchases). However, since the total procurement value of paper is not very high, paper does not heavily determine the overall financial impact of GPP.
The financial impact for construction is also non-negligible. Compared to the other countries under scope, the overall financial impact is not as much determined by construction, since the relative total procurement value in Austria is not as high. The reason that the financial impact of GPP for gardening is zero is because in none of the purchases, green criteria are applied.

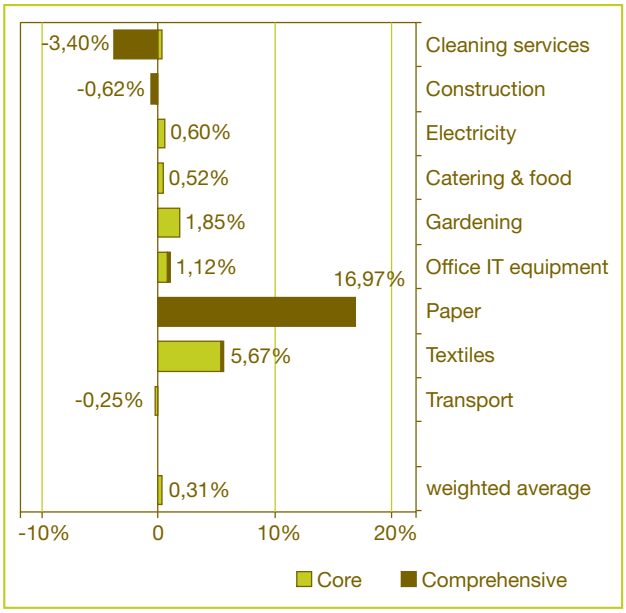
Figure 6.3: Financial impact of GPP in Austria. Negative numbers imply reductions in costs and positive numbers imply increases in costs.



6.2.3 Denmark

The overall financial impact of GPP in Denmark is +0,31 %, which means that the use of green criteria in public purchasing has led to a slight increase in costs. Compared to the other countries under scope, Denmark is the only county that has a positive financial impact of GPP (meaning more costs). This results mainly from the high levels of GPP for paper and clothing (91% and 77% respectively), which lead to increases in costs, and from the low levels of GPP for construction and transport (11% and 10% respectively), which lead to decreases in costs. The only product group which direct to overall figure in the negative direction is cleaning services, for which the level of GPP is 93%.

Figure 6.4: Financial impact of GPP in Denmark. Negative numbers imply reductions in costs and positive numbers imply increases in costs.

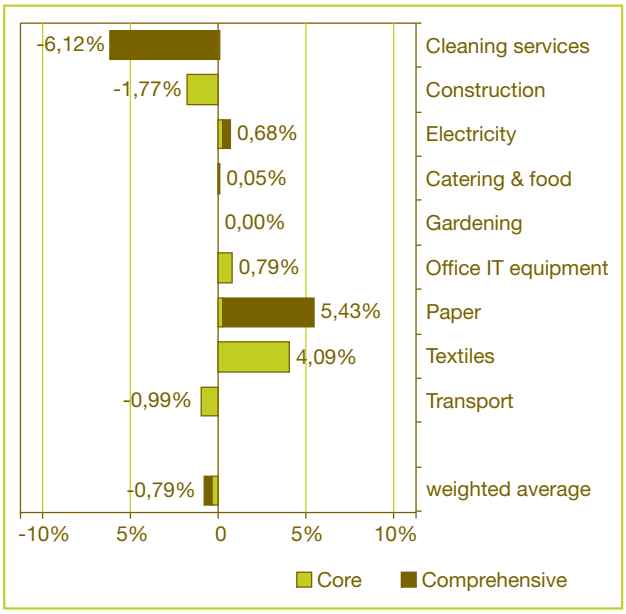


6.2.4 Finland

As can be seen in Figure 6.5, the overall financial impact of GPP in Finland is -0,79%. On a product group level, it is mainly paper and textiles where GPP leads to increases in costs. The impact is not high though as compared to the other countries under scope, as the level of GPP in Finland is not extremely high for these product groups.

Finland does however score high for cleaning services, where 76% of the procurement is considered to be green (of which 66% comprehensive green). Since comprehensive green services lead to decreases in costs of around -10% per functional unit, the financial impact of GPP for cleaning services in Finland is -6,12%.

Figure 6.5: Financial impact of GPP in Finland, Negative numbers imply reductions in costs and positive numbers imply increases in costs.

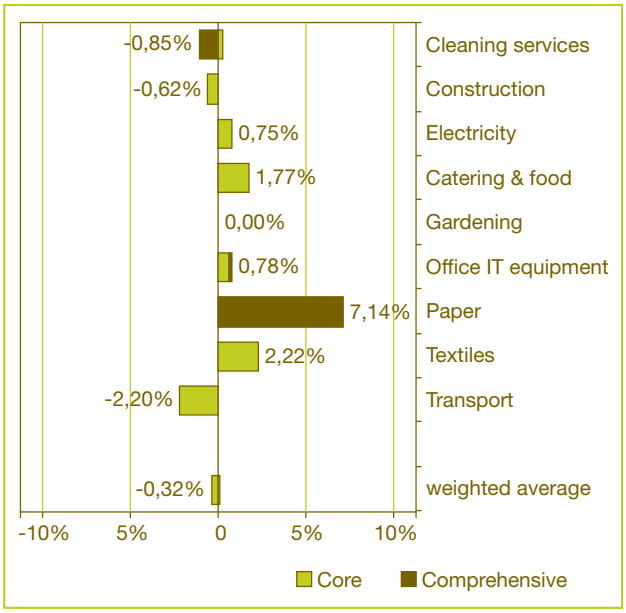


6.2.5 Germany

In Germany, GPP has led to an overall decrease in costs for public purchasers of -0,32%. Again paper and textiles have the highest positive financial impact. Also catering services, of which 94% of the purchases are green, lead to a relatively high positive financial impact.

The product group which leads to the largest decrease in costs in Germany is transport with a financial impact of -2,2%. The financial impact of GPP for gardening is zero, as none of the public purchases of this product group can be considered to be green.

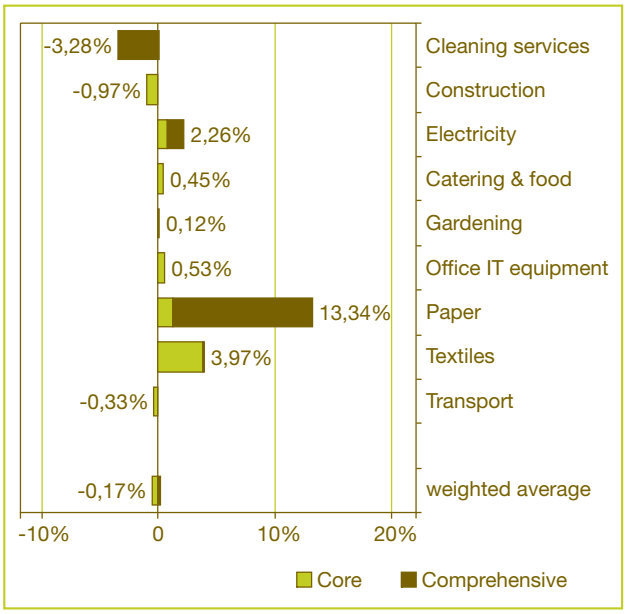
Figure 6.6: Financial impact of GPP in Germany. Negative numbers imply reductions in costs and positive numbers imply increases in costs.



6.2.6 The Netherlands

Figure 6.7 shows the financial impact of GPP per product group in the Netherlands. The positive impacts of paper, textiles and electricity are compensated by the negative impact of cleaning services, construction and transport. As a result, the overall financial impact attains a value very close to zero (-0,17%). The product group with the smallest financial impact (apart from furniture), is gardening. The level of GPP for this product group in terms of procurement value is a modest 6%.

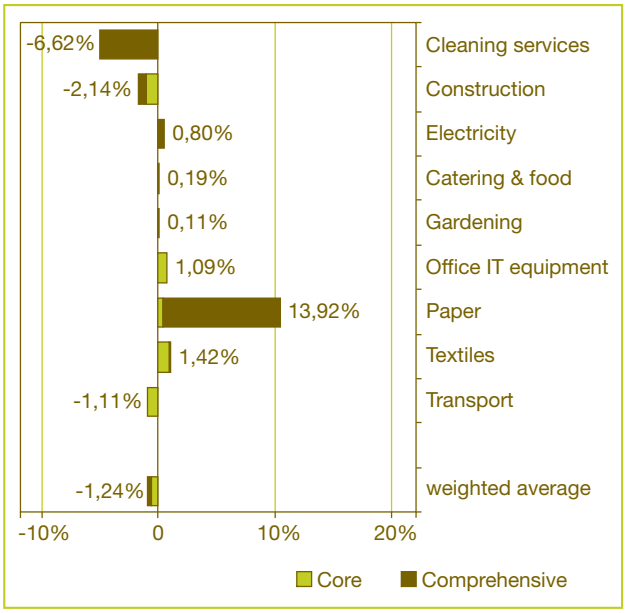
Figure 6.7: Financial impact of GPP in the Netherlands. Negative numbers imply reductions in costs and positive numbers imply increases in costs.



6.2.7 Sweden

Sweden is the country where GPP has led to the second-highest decrease is costs, namely -1,24%, as can be seen in the figure below. It must be noted however that this is still a very low impact in terms of costs. The two product groups that have the highest negative and positive financial impact are cleaning services and paper respectively. For both product groups, around 80% of the purchases are green (with around 72% comprehensive green). The reason that the financial impact of cleaning services in Sweden in negative, is because the financial impact per functional unit (i.e. per m^2 floor cleaned) is negative. The same holds true in the opposite direction for paper.
The overall figure is to a large extent determined by financial impact for construction. This is a result of the fact that the relative total procurement value of this product is group is high compared to the other groups.

Figure 6.8: Financial impact of GPP in Sweden. Negative numbers imply reductions in costs and positive numbers imply increases in costs.

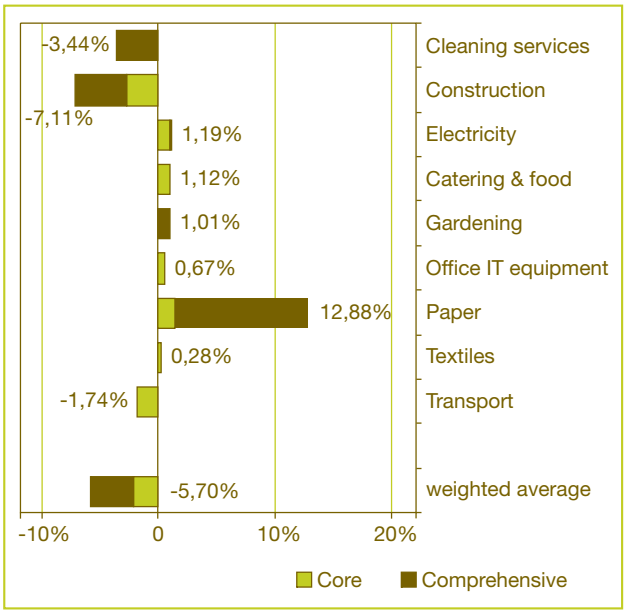


6.2.8 United Kingdom

The largest cost reductions from GPP can be found in the United Kingdom. Overall, the financial impact is -5,70%, which is mainly determined by the large financial impact of construction. Our results for indicator 1 show concerning construction in the UK that (1) the level of GPP is high at 77% and that (2) the relative total procurement value of construction is high at 82%. For further explanations, the reader is referred to the textbox in section 3.1.

Furthermore, the green procurement of cleaning services and transport in the UK also has a negative financial impact. The largest positive financial impact of GPP is once again paper, of which 73% of the purchases are considered to be green. However, the relative total procurement value of this product group is fairly low.

Figure 6.9: Financial impact of GPP in the United Kingdom. Negative numbers imply reductions in costs and positive numbers imply increases in costs.



7 Conclusions

7.1 Current Green-7 level of GPP

The European Union has put Green Public Procurement on the agenda. This study shows that the Green-7 Member States live up to their name by taking the inclusion of environmental criteria in their procurement procedures seriously, both in policy and practice. Within the majority of public institutions, the procurement policy contains an environmental section. Mostly middle management or a higher level is responsible for realizing ambitions on sustainable procurement.

The target set for the European Member States is 50% GPP by 2010. Up to now, efforts undertaken by the Green-7 have lead 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). On a country level, indicator 1 shows less variety between the countries than indicator 2. On indicator 1 United Kingdom is the best performing country scoring a percentage of 74% on GPP, while the Netherlands scores lowest with 26%. On indicator 2 Austria performs best with 62% and Germany comes last in line with 46%.

The differences in average percentage and country ranking between the two indicators is explained by the fact that with indicator 1 a high value contract weighs more than a low value contract, while for indicator 2 both contracts weigh equally. It can thus be concluded that Denmark is leading the Green-7 in procuring green on high value contracts (which can be assumed to be contract with a high environmental impact) while Austria leads in implementing green procurement over the total number of contracts.

Within most countries a wide difference is shown on the level of GPP between the ten product groups. Overall electricity, office IT and furniture attain the highest scores; product groups construction, gardening and transport the lowest. Within product groups cleaning and paper, the levels of comprehensive green criteria are highest among all product groups.

7.2 CO_2 benefits through GPP

One of the main objectives of Green Public Procurement is to have a positive impact on the environment by buying green. Our respondents indicated that the two most decisive arguments for choosing green during the procurement process are (1) the environmental impact of the purchase and (2) the availability of and the familiarity with green alternatives. For this study we have specifically focused on calculating the CO_2 impact of GPP, taking into account the current broad public involvement in reducing human impact on climate change.

It can be concluded that GPP contributes to an average reduction of CO_2 emissions of 25% when purchasing green on the ten product groups subject to this study. This means that public purchasers have the possibility to substantially reduce CO_2 emissions through GPP. The average CO_2 emissions impact varies from -9% in Germany to -49% in the Netherlands. Three out of the seven countries (i.e. The Netherlands, Sweden and the United Kingdom) have a large CO_2 impact of around -40% or higher. In the other four countries, the CO_2 impact of GPP is a bit lower at around -13%.

It should be noted that the 25% CO_2 impact could be either higher or lower if a full Life Cycle Analyses would be applied and if CO_2 equivalents would be included in the calculation as well. Also by taking into account other environmental impacts besides CO_2 (e.g. reductions in air, soil and water pollution or waste generation), GPP will lead to even more environmental benefits than just 25% CO_2 reductions.

7.3 Financial benefits through GPP

In contrast to common perception, this study shows that GPP can lead to decreases in costs for the purchasing organisation instead of increases. When using a Life Cycle Costing (LCC) approach in calculating the financial impact of GPP, the outcome is that with an average level of GPP of 45% (indicator 1), the average financial impact of GPP is -1%.

This means that although the use of environmental criteria in procurement procedures can lead to higher direct purchasing costs, it can result into an average decrease of indirect costs for public organisations of around 1%. The reason behind this is that higher purchasing prices of green goods are compensated by lower operating costs. This is something to take into account when evaluating proposals on costs. Up to now our study shows that methods for LCC are not yet fully incorporated into the procurement process. Proposals are more often evaluated on purchasing costs only.

From our financial impact analysis we can conclude that there are mainly two product groups leading to cost reductions through GPP: construction and transport. This explains the differences on a country level, with figures varying from a cost decrease of 5,70% in the United Kingdom to a cost increase of 0,31 in Denmark. The United Kingdom has a high level of GPP on green construction while Denmark has a low level of Green Procurement on both construction and transport.

7.4 Comparison between CO_2 impact and financial impact

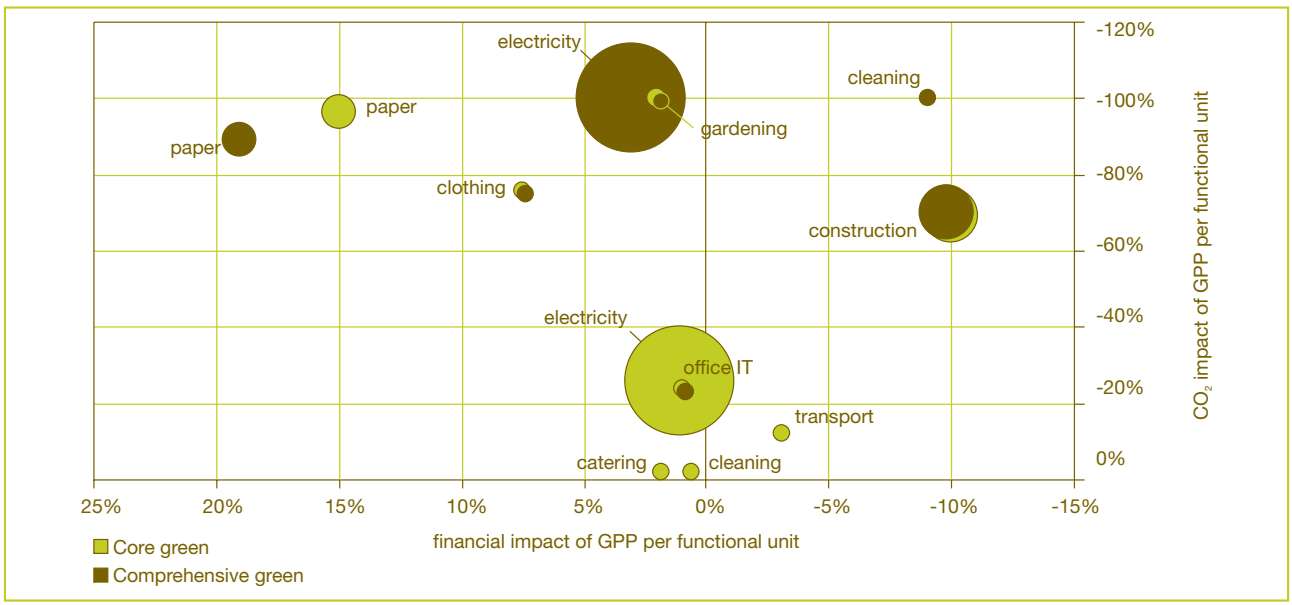
Combining the results of indicators 3 and 4, we conclude that in 2006/2007, Green Public Procurement in the Green-7 has led to average CO_2 reductions of 25% and average life cycle cost reductions of around 1%. Both results are very encouraging. It means that public purchasers have the possibility to substantially reduce CO_2 emissions, without this leading to extra costs of ownership. Although direct purchasing costs are generally increased by GPP, this can be compensated by reductions in operational costs in the long term.

On a product group level, we can make the following comparisons between the CO_2 impact and financial impact. Since the functional unit used for determining both impacts is the same, we can determine which product group leads to both CO_2 emission reduction and cost reduction per functional unit, and whether this is optimal for core or comprehensive levels of GPP. The result of the combination is shown in the figure below.

On the horizontal axis, we show the financial impact of GPP, while on the vertical axis, we show the CO_2 impact of GPP ranging from 0% to -100%, both per functional unit. The size of a bubble indicates the average relative CO_2 emissions of a product group. The figure should be interpreted as follows: product groups that are placed on the upper right on the graph, have both a negative CO_2 and financial impact, and thus can be favourable for public purchasers. On the other hand, product groups which are on the lower left side of the graph, have a small negative impact in terms of CO_2 emissions and a positive financial impact (i.e. increases in costs).

From the figure, we conclude that only for transport, construction and comprehensive green cleaning services, both the CO_2 impact and the financial impact are negative. These are the product groups that public purchasers could focus on when implementing GPP. However, when also taking into account the product group that have the relatively higher CO_2 emissions (displayed by the size of the bubbles), construction and electricity are the product groups to focus on.

Figure 7.1: CO_2 impact and financial impact of GPP per functional unit. Negative numbers imply lower CO_2 emissions or lower costs and positive number imply higher costs.



7.5 Reflection and recommendations on the methodology applied

Overall, we have found that the use of the questionnaire and sampling has proven to be an adequate tool for measuring the levels and impact of Green Public Procurement in a country. With limited resources we have been able to reach a broad and representative sample population that has provided us with the necessary data for this study and allowed us to do statistically sound statements. The methodology applied is practical, flexible and can be applied to assess the level and impact of GPP in all European Members States.

However, there are certain aspects that are important to note when performing a comparable study:

- Respondents indicated that filling in a questionnaire can be very time-consuming. When designing a questionnaire, the number of manual processes for purchases should be as little as possible. For example, instead of asking every criterion in a separate question, one could opt for the possibility to mark criteria in a list of criteria.
- Concerning the difference between indicators 1 and 2, it was found that the precision levels of indicator 2 are higher than indicator 1. When taking into account procurement values for the calculation of indicator 1, the spreading of the data increases, which results in lower levels of precision.
- As is stated in the introduction, the future monitoring will be based on compliance with all core criteria of the GPP training toolkit. Therefore, all core criteria (rather than merely a selection of criteria) should be included in a survey for the monitoring of the level of GPP in a country.
- In order to reach a high response rate, it is essential to have an up-to-date contact list of purchasers of public organisation. Time should be invested to make the list of contacts as accurate as possible, before sending out the questionnaire.
- Public procurement is not applied in the same way for every country. For example, Finland and Austria have central purchasing organisations that do a lot of purchasing for many organisations. It is recommended that when performing a comparable study, the first step should be to look into public procurement of the country under scope and to identify the most suitable method for approaching potential respondents.

Appendix

A Response rates per product group

Response rates per product group per country based on the number of contracts.

	Austria	Denmark	Finland	Germany	The Netherlands	Sweden	United Kingdom	Total
Cleaning	43	35	48	32	92	80	21	351
Construction	20	19	24	11	38	55	21	188
Electricity	22	32	35	22	110	69	30	320
Catering	18	25	14	10	50	9	15	141
Gardening	11	7	10	10	43	15	13	109
Office IT	31	37	37	24	56	71	22	278
Paper	29	32	32	27	80	69	16	285
Clothing	11	16	18	14	29	38	11	137
Transport	20	14	23	25	44	52	17	195
Furniture	22	30	28	24	42	59	14	219
Mean	23	25	27	20	58	52	18	222

B Precision levels per country

The levels of GPP that were calculated are based on a sample population are therefore only best estimates of the levels of GPP. In this Appendix, we present detailed results of the precision levels that relate to these levels of GPP. Both for core and comprehensive levels and for indicator 1 and indicator 2, precision levels are calculated. The precision level of a certain indicator for a certain level of GPP is a measure of the uncertainty of the best estimates of the levels of GPP. For example, a precision level of 14% for core green purchases in Austria (indicator 2), means that it is highly likely (our level of confidence was set at 95%) that the calculated level of GPP (i.e. the best estimate) and the actual level of GPP differ no more than 14%, which may include upper and lower bounds. The figures show that on average, the precision levels of indicator 1 are larger (i.e. larger uncertainty) than the precision levels of indicator 2. This is a result of the large differences in procurement values between organisations that are used to calculate the levels of GPP

Precision levels (core plus comprehensive)		
	indicator 1	indicator 2
Austria	51,3%	13,6%
Denmark	17,1%	11,9%
Finland	28,0%	8,9%
Germany	28,5%	16,5%
Netherlands	14,3%	8,4%
Sweden	12,3%	8,8%
United Kingdom	26,8%	13,2%

Austria	Precision levels	
	Core	Comprehensive
Indicator 1	53%	4%
Indicator 2	14%	10%

Denmark	Precision levels	
	Core	Comprehensive
Indicator 1	16%	7%
Indicator 2	11%	9%

Finland	Precision levels	
	Core	Comprehensive
Indicator 1	29%	8%
Indicator 2	9%	6%

Germany	Precision levels	
	Core	Comprehensive
Indicator 1	27%	3%
Indicator 2	16%	12%

The Netherlands	Precision levels	
	Core	Comprehensive
Indicator 1	11%	7%
Indicator 2	7%	7%

Sweden	Precision levels	
	Core	Comprehensive
Indicator 1	9%	9%
Indicator 2	9%	7%

United Kingdom	Precision levels	
	Core	Comprehensive
Indicator 1	34%	52%
Indicator 2	13%	9%

C Data sheets on organising GPP

This Appendix contains data sheets on the way respondents have said to organise Green Public Procurement within their organisation. The main results were presented in chapter 2. In this Appendix, some background results are presented and the breakdown to central and non-central governmental organisations.

C1 Procurement policy

To what extent does your organisation have a centrally organised procurement function?

Total	Completely centralised	Mostly centralised, some decentralised	Just as much centralised as decentralised	Mostly decentralised, some centralised	Completely decentralised
Austria	10%	37%	36%	11%	6%
Denmark	21%	43%	12%	21%	3%
Finland	8%	42%	27%	16%	7%
Germany	14%	57%	19%	8%	3%
The Netherlands	7%	25%	17%	39%	13%
Sweden	18%	46%	13%	20%	3%
United Kingdom	5%	33%	6%	50%	5%

Central	Completely centralised	Mostly centralised, some decentralised	Just as much centralised as decentralised	Mostly decentralised, some centralised	Completely decentralised
Austria	12%	53%	24%	6%	6%
Denmark	10%	25%	30%	30%	5%
Finland	6%	47%	24%	21%	3%
Germany	8%	69%	15%	8%	0%
The Netherlands	13%	41%	25%	16%	6%
Sweden	19%	42%	16%	22%	1%
United Kingdom	0%	75%	0%	25%	0%

Non-central	Completely centralised	Mostly centralised, some decentralised	Just as much centralised as decentralised	Mostly decentralised, some centralised	Completely decentralised
Austria	9%	37%	36%	12%	6%
Denmark	22%	45%	10%	20%	3%
Finland	8%	42%	27%	16%	7%
Germany	14%	56%	19%	8%	3%
The Netherlands	6%	22%	16%	42%	14%
Sweden	18%	47%	13%	20%	3%
United Kingdom	5%	31%	7%	52%	5%

C2 Implementation of Green Public Procurement

On which organisational level have the environmental goals been established (multiple options possible)?

Total	Representative body (e.g. Parliament, Municipal Council)	Board level of the organisation (e.g. Minister, Municipal Executive, etc.)	Directorate or management level	Other
Austria	73%	61%	76%	87%
Denmark	89%	49%	70%	92%
Finland	81%	77%	74%	84%
Germany	83%	78%	100%	66%
The Netherlands	74%	59%	73%	87%
Sweden	50%	90%	67%	96%
United Kingdom	79%	68%	55%	89%

Central	Representative body (e.g. Parliament, Municipal Council)	Board level of the organisation (e.g. Minister, Municipal Executive, etc.)	Directorate or management level	Other
Austria	78%	44%	89%	89%
Denmark	74%	95%	84%	74%
Finland	74%	71%	74%	94%
Germany	76%	71%	94%	88%
The Netherlands	90%	37%	67%	87%
Sweden	87%	98%	36%	83%
United Kingdom	100%	67%	100%	100%

Non-central	Representative body (e.g. Parliament, Municipal Council)	Board level of the organisation (e.g. Minister, Municipal Executive, etc.)	Directorate or management level	Other
Austria	72%	61%	76%	87%
Denmark	90%	44%	69%	93%
Finland	81%	77%	74%	83%
Germany	83%	78%	100%	65%
The Netherlands	71%	63%	74%	87%
Sweden	45%	89%	71%	98%
United Kingdom	77%	68%	52%	88%

Who is/are responsible for meeting goals set for greening procurement?

Central	Management / directorate of organisation (e.g. minister, municipal executive)	Middle management (e.g. procurement coordinator, procurement department)	Procurers	Other / unknown
Austria	22%	56%	0%	22%
Denmark	17%	67%	0%	17%
Finland	17%	33%	33%	17%
Germany	33%	0%	17%	50%
The Netherlands	36%	44%	4%	16%
Sweden	28%	46%	21%	5%
United Kingdom	10%	66%	7%	18%

Decentral	Management / directorate of organisation (e.g. minister, municipal executive)	Middle management (e.g. procurement coordinator, procurement department)	Procurers	Other / unknown
Austria	50%	23%	9%	18%
Denmark	6%	78%	0%	17%
Finland	20%	41%	17%	22%
Germany	36%	8%	24%	32%
The Netherlands	20%	30%	11%	39%
Sweden	19%	46%	25%	10%
United Kingdom	10%	66%	7%	18%

What has been done to empower the responsible people to meet the green procurement goals?

Central	Training and education of procurement officers in the field of green procurement	Active communication towards the organisation about set goals in making procurement more sustainable	Formally appointed powers to the responsible officers	Political support	Other
Austria	28%	39%	22%	6%	6%
Denmark	16%	26%	21%	21%	16%
Finland	10%	17%	14%	7%	21%
Germany	13%	6%	19%	0%	6%
The Netherlands	34%	55%	14%	17%	21%
Sweden	28%	18%	13%	3%	26%
United Kingdom	33%	33%	17%	0%	0%

Non-central	Training and education of procurement officers in the field of green procurement	Active communication towards the organisation about set goals in making procurement more sustainable	Formally appointed powers to the responsible officers	Political support	Other
Austria	8%	22%	24%	6%	12%
Denmark	30%	33%	13%	16%	10%
Finland	17%	15%	12%	2%	15%
Germany	9%	21%	25%	7%	4%
The Netherlands	22%	32%	15%	11%	29%
Sweden	41%	22%	13%	18%	15%
United Kingdom	58%	50%	8%	26%	14%

Which external sources are being used to find information about green procurement (for example on green criteria)?

Central	European Commission GPP website	Procura+ website	Ecolabel	Country specific sources	Other
Austria	35%	12%	18%	35%	18%
Denmark	32%	11%	21%	84%	32%
Finland	24%	0%	3%	31%	14%
Germany	13%	13%	6%	50%	0%
The Netherlands	7%	0%	14%	62%	28%
Sweden	7%	42%	21%	43%	20%
United Kingdom	33%	0%	17%	33%	17%

Non-central	European Commission GPP website	Procura+ website	Ecolabel	Country specific sources	Other
Austria	8%	4%	5%	21%	23%
Denmark	23%	2%	34%	70%	30%
Finland	18%	7%	5%	15%	15%
Germany	18%	4%	5%	33%	8%
The Netherlands	9%	4%	15%	80%	17%
Sweden	15%	32%	41%	70%	17%
United Kingdom	22%	15%	24%	69%	42%

How does your organisation keep the level of knowledge and information on green procurement up to date?

Central	Training and education	Seminars	By cooperating with other (governmental) organisations	Internet	Other
Austria	29%	18%	41%	35%	6%
Denmark	21%	32%	58%	32%	37%
Finland	34%	17%	17%	14%	17%
Germany	13%	19%	31%	6%	13%
The Netherlands	24%	38%	66%	34%	10%
Sweden	20%	29%	28%	19%	12%
United Kingdom	33%	33%	17%	0%	0%

Non-central	Training and education	Seminars	By cooperating with other (governmental) organisations	Internet	Other
Austria	10%	13%	21%	8%	14%
Denmark	8%	38%	54%	43%	16%
Finland	27%	21%	27%	18%	11%
Germany	12%	7%	25%	20%	7%
The Netherlands	18%	43%	36%	54%	16%
Sweden	36%	60%	42%	34%	5%
United Kingdom	51%	50%	43%	31%	11%

Does your organisation cooperate with other (governmental) organisations in the field of green procurement?

	Central	Non-central	Total
Austria	55%	82%	82%
Denmark	53%	44%	45%
Finland	77%	65%	66%
Germany	78%	91%	91%
The Netherlands	15%	54%	49%
Sweden	78%	56%	59%
United Kingdom	0%	33%	31%

During the procurement process, are environmental aspects compared with price and other criteria?

Central	Yes, always	Yes, most of the time	Yes, sometimes	Seldom	Never
Austria	42%	25%	0%	17%	17%
Denmark	22%	39%	33%	6%	0%
Finland	4%	9%	52%	35%	0%
Germany	0%	36%	27%	27%	9%
The Netherlands	20%	32%	28%	12%	8%
Sweden	4%	21%	41%	29%	5%
United Kingdom	0%	50%	50%	0%	0%

Non-central	Yes, always	Yes, most of the time	Yes, sometimes	Seldom	Never
Austria	4%	39%	35%	16%	5%
Denmark	17%	41%	37%	6%	0%
Finland	7%	18%	29%	40%	6%
Germany	18%	29%	38%	13%	2%
The Netherlands	13%	34%	37%	13%	3%
Sweden	3%	35%	43%	16%	3%
United Kingdom	26%	26%	34%	7%	7%

Are proposals being evaluated on Life Cycle Costing or on the procurement costs of the product/service only?

Central	Mostly evaluation on LCC	Sometimes evaluation on LCC, sometimes evaluation on purchasing costs	Mostly evaluation on purchasing costs
Austria	25%	42%	33%
Denmark	22%	56%	22%
Finland	22%	43%	35%
Germany	11%	44%	44%
The Netherlands	8%	54%	38%
Sweden	5%	29%	66%
United Kingdom	0%	100%	0%

Non-central	Mostly evaluation on LCC	Sometimes evaluation on LCC, sometimes evaluation on purchasing costs	Mostly evaluation on purchasing costs
Austria	8%	47%	45%
Denmark	11%	57%	32%
Finland	14%	38%	49%
Germany	14%	49%	37%
The Netherlands	12%	38%	51%
Sweden	7%	31%	62%
United Kingdom	28%	55%	17%

Which criteria are decisive for asking for “green” goods (by including green criteria as minimum technical specifications or as award criteria)?

Central	Volume of the tender, only the larger tenders	Volume of the tender, only the smaller tenders	Environmental impact of the purchase	Availability of green alternatives	Familiarity with green alternatives	Familiarity with suppliers that offer green goods/services	The impact of the green alternative on the processes of the organisation - only choosing for the green alternative when impact is minimal	Other
Austria	0%	0%	29%	41%	24%	24%	6%	12%
Denmark	21%	5%	53%	37%	53%	26%	0%	11%
Finland	0%	0%	45%	38%	31%	14%	3%	10%
Germany	6%	13%	13%	38%	13%	6%	13%	0%
The Netherlands	14%	0%	38%	59%	38%	28%	10%	10%
Sweden	1%	0%	50%	44%	32%	31%	6%	2%
United Kingdom	0%	0%	33%	17%	0%	17%	0%	0%

Non-central	Volume of the tender, only the larger tenders	Volume of the tender, only the smaller tenders	Environmental impact of the purchase	Availability of green alternatives	Familiarity with green alternatives	Familiarity with suppliers that offer green goods/services	The impact of the green alternative on the processes of the organisation - only choosing for the green alternative when impact is minimal	Other
Austria	7%	2%	19%	45%	22%	18%	9%	7%
Denmark	16%	5%	48%	41%	36%	31%	3%	11%
Finland	5%	1%	36%	28%	28%	14%	3%	8%
Germany	5%	1%	26%	28%	20%	11%	9%	3%
The Netherlands	7%	2%	45%	52%	42%	22%	21%	13%
Sweden	3%	3%	54%	59%	40%	19%	6%	6%
United Kingdom	12%	4%	51%	47%	19%	15%	9%	4%

D Data sheet on the levels of GPP

In all seven countries there are more non-central government organisations than central government organisations. The percentages in D1 and D2 have been adjusted for the central/non-central ratio. The percentages in D3 and D4 have not been adjusted.

D2 Results of GPP scores for indicator 1 per country in percentages

Austria	Core level	Compreh. level	Non-green
Cleaning	4%	4%	92%
Construction	36%	0%	64%
Electricity	96%	2%	2%
Catering	25%		75%
Gardening	0%	0%	100%
Office IT	42%	0%	58%
Paper	12%	88%	0%
Clothing	6%	23%	71%
Transport	1%		99%
Furniture	100%		0%
Weighted average	49%	3%	48%

Finland	Core level	Compreh. level	Non-green
Cleaning	10%	66%	24%
Construction	22%	0%	78%
Electricity	24%	15%	61%
Catering	3%		97%
Gardening	0%	0%	100%
Office IT	62%	0%	38%
Paper	2%	31%	67%
Clothing	56%	0%	44%
Transport	34%		66%
Furniture	53%		47%
Weighted average	35%	8%	57%

Denmark	Core level	Compreh. level	Non-green
Cleaning	53%	40%	7%
Construction	2%	9%	89%
Electricity	77%	0%	23%
Catering	25%		75%
Gardening	92%	0%	8%
Office IT	67%	19%	14%
Paper	0%	91%	9%
Clothing	73%	4%	23%
Transport	10%		90%
Furniture	67%		33%
Weighted average	30%	12%	58%

Germany	Core level	Compreh. level	Non-green
Cleaning	31%	11%	58%
Construction	5%	0%	95%
Electricity	45%	0%	55%
Catering	94%		6%
Gardening	0%	0%	100%
Office IT	77%	18%	4%
Paper	0%	42%	58%
Clothing	31%	0%	69%
Transport	67%		33%
Furniture	89%		11%
Weighted average	27%	3%	70%

Netherlands	Core level	Compreh. level	Non-green
Cleaning	16%	39%	45%
Construction	10%	0%	90%
Electricity	43%	37%	20%
Catering	28%		72%
Gardening	0%	6%	94%
Office IT	67%	0%	33%
Paper	9%	66%	25%
Clothing	53%	1%	45%
Transport	8%		92%
Furniture	73%		27%
Weighted average	18%	8%	73%

United Kingdom	Core level	Compreh. level	Non-green
Cleaning	12%	36%	52%
Construction	29%	49%	23%
Electricity	57%	2%	41%
Catering	63%		37%
Gardening	0%	61%	39%
Office IT	75%	0%	25%
Paper	11%	63%	27%
Clothing	4%	0%	96%
Transport	55%		45%
Furniture	100%		0%
Weighted average	33%	41%	25%

Sweden	Core level	Compreh. level	Non-green
Cleaning	9%	72%	19%
Construction	21%	12%	68%
Electricity	33%	43%	24%
Catering	10%		90%
Gardening	6%	0%	94%
Office IT	79%	11%	10%
Paper	4%	73%	23%
Clothing	19%	1%	80%
Transport	40%		60%
Furniture	75%		25%
Weighted average	28%	22%	51%

D2 Results of GPP scores for indicator 2 per country in percentages

Austria	Core level	Compreh. level	Non-green
Cleaning	4%	4%	92%
Construction	36%	0%	64%
Electricity	96%	2%	2%
Catering	25%		75%
Gardening	0%	0%	100%
Office IT	42%	0%	58%
Paper	12%	88%	0%
Clothing	6%	23%	71%
Transport	1%		99%
Furniture	100%		0%
Weighted average	49%	3%	48%

Finland	Core level	Compreh. level	Non-green
Cleaning	10%	66%	24%
Construction	22%	0%	78%
Electricity	24%	15%	61%
Catering	3%		97%
Gardening	0%	0%	100%
Office IT	62%	0%	38%
Paper	2%	31%	67%
Clothing	56%	0%	44%
Transport	34%		66%
Furniture	53%		47%
Weighted average	35%	8%	57%

Denmark	Core level	Compreh. level	Non-green
Cleaning	53%	40%	7%
Construction	2%	9%	89%
Electricity	77%	0%	23%
Catering	25%		75%
Gardening	92%	0%	8%
Office IT	67%	19%	14%
Paper	0%	91%	9%
Clothing	73%	4%	23%
Transport	10%		90%
Furniture	67%		33%
Weighted average	30%	12%	58%

Germany	Core level	Compreh. level	Non-green
Cleaning	31%	11%	58%
Construction	5%	0%	95%
Electricity	45%	0%	55%
Catering	94%		6%
Gardening	0%	0%	100%
Office IT	77%	18%	4%
Paper	0%	42%	58%
Clothing	31%	0%	69%
Transport	67%		33%
Furniture	89%		11%
Weighted average	27%	3%	70%

Netherlands	Core level	Compreh. level	Non-green
Cleaning	16%	39%	45%
Construction	10%	0%	90%
Electricity	43%	37%	20%
Catering	28%		72%
Gardening	0%	6%	94%
Office IT	67%	0%	33%
Paper	9%	66%	25%
Clothing	53%	1%	45%
Transport	8%		92%
Furniture	73%		27%
Weighted average	18%	8%	73%

United Kingdom	Core level	Compreh. level	Non-green
Cleaning	12%	36%	52%
Construction	29%	49%	23%
Electricity	57%	2%	41%
Catering	63%		37%
Gardening	0%	61%	39%
Office IT	75%	0%	25%
Paper	11%	63%	27%
Clothing	4%	0%	96%
Transport	55%		45%
Furniture	100%		0%
Weighted average	33%	41%	25%

Sweden	Core level	Compreh. level	Non-green
Cleaning	9%	72%	19%
Construction	21%	12%	68%
Electricity	33%	43%	24%
Catering	10%		90%
Gardening	6%	0%	94%
Office IT	79%	11%	10%
Paper	4%	73%	23%
Clothing	19%	1%	80%
Transport	40%		60%
Furniture	75%		25%
Weighted average	28%	22%	51%

D3 Results for central and non-central organisations on indicator 1

Austria		Core level	Comprehensive level	Non-green
Cleaning	Central government	98%	2%	0%
	Non-central government	2%	4%	94%
Construction	Central government	0%	0%	100%
	Non-central government	37%	0%	63%
Electricity	Central government	11%	0%	89%
	Non-central government	98%	2%	0%
Catering	Central government	100%	-	0%
	Non-central government	24%	-	76%
Gardening	Central government	0%	0%	0%
	Non-central government	0%	0%	100%
Office IT	Central government	100%	0%	0%
	Non-central government	41%	0%	59%
Paper	Central government	6%	94%	0%
	Non-central government	12%	87%	0%
Clothing	Central government	1%	99%	0%
	Non-central government	6%	22%	72%
Transport	Central government	1%	-	99%
	Non-central government	1%	-	99%
Furniture	Central government	100%	-	0%
	Non-central government	100%	-	0%

Denmark		Core level	Comprehensive level	Non-green
Cleaning	Central government	98%	2%	0%
	Non-central government	48%	44%	7%
Construction	Central government	0%	100%	0%
	Non-central government	2%	0%	98%
Electricity	Central government	99%	0%	1%
	Non-central government	75%	0%	25%
Catering	Central government	89%	-	11%
	Non-central government	19%	-	81%
Gardening	Central government	0%	0%	0%
	Non-central government	92%	0%	8%
Office IT	Central government	56%	24%	20%
	Non-central government	68%	18%	13%
Paper	Central government	0%	99%	1%
	Non-central government	0%	90%	10%
Clothing	Central government	28%	0%	72%
	Non-central government	78%	4%	18%
Transport	Central government	0%	-	0%
	Non-central government	10%	-	90%
Furniture	Central government	75%	-	25%
	Non-central government	66%	-	34%

Finland		Core level	Comprehensive level	Non-green
Cleaning	Central government	8%	11%	81%
	Non-central government	10%	68%	22%
Construction	Central government	0%	0%	100%
	Non-central government	23%	0%	77%
Electricity	Central government	94%	0%	6%
	Non-central government	21%	15%	63%
Catering	Central government	0%	-	100%
	Non-central government	3%	-	97%
Gardening	Central government	0%	0%	100%
	Non-central government	0%	0%	100%
Office IT	Central government	85%	0%	15%
	Non-central government	61%	0%	39%
Paper	Central government	43%	0%	57%
	Non-central government	0%	32%	68%
Clothing	Central government	0%	0%	100%
	Non-central government	59%	0%	41%
Transport	Central government	21%	-	79%
	Non-central government	34%	-	66%
Furniture	Central government	62%	-	38%
	Non-central government	52%	-	48%

Germany		Core level	Comprehensive level	Non-green
Cleaning	Central government	0%	0%	100%
	Non-central government	32%	11%	57%
Construction	Central government	0%	0%	100%
	Non-central government	5%	0%	95%
Electricity	Central government	30%	0%	70%
	Non-central government	46%	0%	54%
Catering	Central government	0%	-	100%
	Non-central government	96%	-	4%
Gardening	Central government	0%	0%	100%
	Non-central government	0%	0%	100%
Office IT	Central government	42%	0%	58%
	Non-central government	78%	19%	3%
Paper	Central government	0%	95%	5%
	Non-central government	0%	41%	59%
Clothing	Central government	16%	0%	84%
	Non-central government	31%	0%	69%
Transport	Central government	0%	-	100%
	Non-central government	68%	-	32%
Furniture	Central government	26%	-	74%
	Non-central government	90%	-	10%

Netherlands		Core level	Comprehensive level	Non-green
Cleaning	Central government	0%	72%	28%
	Non-central government	19%	33%	48%
Construction	Central government	8%	0%	92%
	Non-central government	10%	0%	90%
Electricity	Central government	93%	4%	4%
	Non-central government	34%	43%	23%
Catering	Central government	31%	-	69%
	Non-central government	27%	-	73%
Gardening	Central government	0%	0%	100%
	Non-central government	0%	7%	93%
Office IT	Central government	66%	0%	34%
	Non-central government	67%	0%	33%
Paper	Central government	2%	87%	11%
	Non-central government	10%	63%	27%
Clothing	Central government	6%	0%	94%
	Non-central government	61%	2%	37%
Transport	Central government	5%	-	95%
	Non-central government	9%	-	91%
Furniture	Central government	29%	-	71%
	Non-central government	80%	-	20%

Sweden		Core level	Comprehensive level	Non-green
Cleaning	Central government	6%	79%	15%
	Non-central government	10%	71%	19%
Construction	Central government	100%	0%	0%
	Non-central government	10%	13%	77%
Electricity	Central government	40%	2%	59%
	Non-central government	32%	49%	20%
Catering	Central government	8%	-	92%
	Non-central government	10%	-	90%
Gardening	Central government	0%	0%	100%
	Non-central government	6%	0%	94%
Office IT	Central government	82%	0%	18%
	Non-central government	79%	12%	9%
Paper	Central government	0%	73%	27%
	Non-central government	5%	73%	22%
Clothing	Central government	0%	0%	100%
	Non-central government	21%	1%	77%
Transport	Central government	52%	-	48%
	Non-central government	38%	-	62%
Furniture	Central government	92%	-	8%
	Non-central government	73%	-	27%

United Kingdom		Core level	Comprehensive level	Non-green
Cleaning	Central government	0%	0%	0%
	Non-central government	12%	36%	52%
Construction	Central government	0%	0%	0%
	Non-central government	29%	49%	23%
Electricity	Central government	100%	0%	0%
	Non-central government	54%	2%	44%
Catering	Central government	0%	-	0%
	Non-central government	63%	-	37%
Gardening	Central government	0%	0%	0%
	Non-central government	0%	61%	39%
Office IT	Central government	100%	0%	0%
	Non-central government	73%	0%	27%
Paper	Central government	0%	0%	0%
	Non-central government	11%	63%	27%
Clothing	Central government	0%	0%	0%
	Non-central government	4%	0%	96%
Transport	Central government	0%	-	0%
	Non-central government	55%	-	45%
Furniture	Central government	100%	-	0%
	Non-central government	100%	-	0%

D4. Results for central and non-central organisations on indicator 2

Austria		Core level	Comprehensive level	Non-green
Cleaning	Central government	17%	33%	50%
	Non-central government	14%	11%	76%
Construction	Central government	0%	0%	100%
	Non-central government	13%	0%	88%
Electricity	Central government	67%	0%	33%
	Non-central government	38%	54%	8%
Catering	Central government	100%	-	0%
	Non-central government	44%	-	56%
Gardening	Central government	0%	0%	0%
	Non-central government	0%	0%	100%
Office IT	Central government	100%	0%	0%
	Non-central government	76%	0%	24%
Paper	Central government	33%	67%	0%
	Non-central government	29%	64%	7%
Clothing	Central government	50%	50%	0%
	Non-central government	43%	14%	43%
Transport	Central government	60%	-	40%
	Non-central government	77%	-	23%
Furniture	Central government	100%	-	0%
	Non-central government	95%	-	5%

Denmark		Core level	Comprehensive level	Non-green
Cleaning	Central government	94%	6%	0%
	Non-central government	35%	35%	29%
Construction	Central government	50%	50%	0%
	Non-central government	4%	4%	92%
Electricity	Central government	90%	0%	10%
	Non-central government	51%	5%	44%
Catering	Central government	93%	-	7%
	Non-central government	33%	-	67%
Gardening	Central government	0%	0%	0%
	Non-central government	40%	0%	60%
Office IT	Central government	45%	24%	30%
	Non-central government	76%	3%	21%
Paper	Central government	0%	81%	19%
	Non-central government	0%	27%	73%
Clothing	Central government	15%	0%	85%
	Non-central government	43%	36%	21%
Transport	Central government	0%	-	100%
	Non-central government	27%	-	73%
Furniture	Central government	56%	-	44%
	Non-central government	82%	-	18%

Finland		Core level	Comprehensive level	Non-green
Cleaning	Central government	13%	38%	50%
	Non-central government	31%	48%	21%
Construction	Central government	0%	0%	100%
	Non-central government	18%	0%	82%
Electricity	Central government	67%	0%	33%
	Non-central government	56%	3%	41%
Catering	Central government	0%	-	100%
	Non-central government	4%	-	96%
Gardening	Central government	0%	0%	100%
	Non-central government	0%	0%	100%
Office IT	Central government	67%	0%	33%
	Non-central government	79%	0%	21%
Paper	Central government	25%	0%	75%
	Non-central government	2%	34%	64%
Clothing	Central government	0%	0%	100%
	Non-central government	8%	0%	92%
Transport	Central government	33%	-	67%
	Non-central government	33%	-	67%
Furniture	Central government	60%	-	40%
	Non-central government	91%	-	9%

Germany		Core level	Comprehensive level	Non-green
Cleaning	Central government	17%	0%	83%
	Non-central government	23%	15%	62%
Construction	Central government	0%	0%	100%
	Non-central government	14%	0%	86%
Electricity	Central government	50%	0%	50%
	Non-central government	26%	0%	74%
Catering	Central government	0%	-	100%
	Non-central government	38%	-	63%
Gardening	Central government	0%	0%	100%
	Non-central government	0%	0%	100%
Office IT	Central government	83%	0%	17%
	Non-central government	74%	16%	11%
Paper	Central government	0%	80%	20%
	Non-central government	0%	63%	38%
Clothing	Central government	33%	0%	67%
	Non-central government	30%	0%	70%
Transport	Central government	0%	-	100%
	Non-central government	29%	-	71%
Furniture	Central government	25%	-	75%
	Non-central government	68%	-	32%

Netherlands		Core level	Comprehensive level	Non-green
Cleaning	Central government	0%	63%	38%
	Non-central government	22%	25%	52%
Construction	Central government	25%	0%	75%
	Non-central government	12%	4%	85%
Electricity	Central government	50%	0%	50%
	Non-central government	26%	0%	74%
Catering	Central government	40%	-	60%
	Non-central government	20%	-	80%
Gardening	Central government	0%	0%	100%
	Non-central government	0%	3%	97%
Office IT	Central government	67%	0%	33%
	Non-central government	57%	0%	43%
Paper	Central government	17%	50%	33%
	Non-central government	10%	64%	26%
Clothing	Central government	50%	0%	50%
	Non-central government	32%	5%	63%
Transport	Central government	53%	-	47%
	Non-central government	21%	-	79%
Furniture	Central government	42%	-	58%
	Non-central government	54%	-	46%

Sweden		Core level	Comprehensive level	Non-green
Cleaning	Central government	17%	58%	25%
	Non-central government	24%	45%	31%
Construction	Central government	100%	0%	0%
	Non-central government	13%	21%	67%
Electricity	Central government	53%	7%	40%
	Non-central government	32%	37%	31%
Catering	Central government	33%	-	67%
	Non-central government	40%	-	60%
Gardening	Central government	0%	0%	100%
	Non-central government	30%	0%	70%
Office IT	Central government	52%	0%	48%
	Non-central government	75%	7%	18%
Paper	Central government	0%	61%	39%
	Non-central government	11%	60%	29%
Clothing	Central government	0%	50%	50%
	Non-central government	39%	3%	58%
Transport	Central government	25%	-	75%
	Non-central government	42%	-	58%
Furniture	Central government	67%	-	33%
	Non-central government	69%	-	31%

United Kingdom		Core level	Comprehensive level	Non-green
Cleaning	Central government	0%	0%	0%
	Non-central government	19%	48%	33%
Construction	Central government	100%	0%	0%
	Non-central government	43%	9%	48%
Electricity	Central government	100%	0%	0%
	Non-central government	67%	3%	30%
Catering	Central government	0%	-	100%
	Non-central government	55%	-	45%
Gardening	Central government	0%	0%	0%
	Non-central government	8%	17%	75%
Office IT	Central government	100%	0%	0%
	Non-central government	73%	0%	27%
Paper	Central government	0%	0%	0%
	Non-central government	13%	67%	20%
Clothing	Central government	0%	0%	0%
	Non-central government	11%	0%	89%
Transport	Central government	0%	-	100%
	Non-central government	21%	-	79%
Furniture	Central government	100%	-	0%
	Non-central government	89%	-	11%

E Data sheets on the CO_2 impact of GPP

Detailed data concerning the CO_2 impact of GPP for the seven countries under scope are provided in this section. Per product group, we divided the total CO_2 impact into the CO_2 impact from core criteria and the CO_2 impact from comprehensive criteria. The sum of the two is equal to the total CO_2 impact. Also the weighted averages and the weighting factors are provided.
It must be noted that no results are shown for the product group furniture, since it was found that reliable CO_2 data was not available concerning the criteria included in the questionnaire. Negative numbers imply reductions in CO_2 emissions.

Austria	total CO_2 impact	core	comprehensive	relative CO_2 emissions
Cleaning services	-4%	0%	-4%	0%
Construction	-25%	-25%	0%	19%
Electricity	-2%	0%	-2%	75%
Catering & food	0%	0%	-	0%
Gardening	0%	0%	0%	0%
Office IT equipment	-10%	-10%	0%	0%
Paper	-90%	-12%	-78%	5%
Textiles	-21%	-4%	-17%	0%
Transport	0%	0%	-	1%
weighted average	-11%	-5%	-6%	

Denmark	total CO_2 impact	core	comprehensive	relative CO_2 emissions
Cleaning services	-43%	0%	-43%	0%
Construction	-8%	-1%	-6%	32%
Electricity	-20%	-20%	0%	59%
Catering & food	0%	0%	-	0%
Gardening	-92%	-92%	0%	0%
Office IT equipment	-18%	-18%	-1%	0%
Paper	-8%	-8%	0%	8%
Textiles	-50%	-50%	0%	0%
Transport	-1%	-1%	-	0%
weighted average	-15%	-13%	-2%	

Finland	total CO_2 impact	core	comprehensive	relative CO_2 emissions
Cleaning services	-68%	0%	-68%	0%
Construction	-15%	-15%	0%	47%
Electricity	-19%	-5%	-14%	47%
Catering & food	0%	0%	-	0%
Gardening	0%	0%	0%	0%
Office IT equipment	-15%	-15%	0%	0%
Paper	-26%	-2%	-24%	6%
Textiles	-41%	-41%	0%	0%
Transport	-4%	-4%	-	0%
weighted average	-18%	-10%	-8%	

Germany	total CO_2 impact	core	comprehensive	relative CO_2 emissions
Cleaning services	-12%	0%	-12%	0%
Construction	-4%	-4%	0%	64%
Electricity	-18%	-18%	0%	31%
Catering & food	0%	0%	-	0%
Gardening	0%	0%	0%	0%
Office IT equipment	-23%	-19%	-4%	0%
Paper	-33%	0%	-33%	4%
Textiles	-23%	-23%	0%	0%
Transport	-8%	-8%	-	0%
weighted average	-9%	-8%	-1%	

Netherlands	total CO_2 impact	core	comprehensive	relative CO_2 emissions
Cleaning services	-41%	0%	-41%	0%
Construction	-7%	-7%	0%	19%
Electricity	-56%	-19%	-37%	78%
Catering & food	0%	0%	-	0%
Gardening	-6%	0%	-6%	0%
Office IT equipment	-16%	-16%	0%	0%
Paper	-65%	-8%	-56%	3%
Textiles	-40%	-39%	-1%	0%
Transport	-1%	-1%	-	0%
weighted average	-47%	-17%	-30%	

Sweden	total CO_2 impact	core	comprehensive	relative CO_2 emissions
Cleaning services	-74%	0%	-74%	0%
Construction	-21%	-13%	-8%	44%
Electricity	-44%	-2%	-43%	30%
Catering & food	0%	0%	-	0%
Gardening	-6%	-6%	0%	0%
Office IT equipment	-22%	-19%	-3%	0%
Paper	-66%	-4%	-62%	25%
Textiles	-14%	-13%	-1%	0%
Transport	-5%	-5%	-	1%
weighted average	-39%	-7%	-32%	

United Kingdom	total CO_2 impact	core	comprehensive	relative CO_2 emissions
Cleaning services	-38%	0%	-38%	0%
Construction	-55%	-20%	-35%	36%
Electricity	-27%	-25%	-2%	62%
Catering & food	0%	0%	-	0%
Gardening	-61%	0%	-60%	0%
Office IT equipment	-18%	-18%	0%	0%
Paper	-63%	-10%	-53%	2%
Textiles	-3%	-3%	0%	0%
Transport	-7%	-7%	-	0%
weighted average	-38%	-23%	-15%	

F Data sheets on the financial impact of GPP

Detailed data concerning the financial impact of GPP for the seven countries under scope are provided in this section. Per product group, we divide the total financial impact into the financial impact from core criteria and the financial impact from comprehensive criteria. The sum of the two is equal to the total financial impact.

Furthermore, for the relevant elements in the user life cycle of a product that are influenced by GPP from a cost perspective, we have determined the financial impact as well. In order to calculate the total impact, the financial impacts per element must be weighted using the cost structure of the product group. Please refer to the separate report on methodologies for details.

It must be noted that no results are shown for the product group furniture, since it was found that no reliable financial data was available concerning the criteria asked in the questionnaire. Negative numbers imply cost reductions and positive numbers imply increases in costs.

F1 Overall results

country	financial impact	core	compre-hensive
Green-7 average	-1,20%	-0,60%	-0,60%
United Kingdom	-5,70%	-2,05%	-3,65%
Sweden	-1,24%	-0,72%	-0,52%
Finland	-0,79%	-0,32%	-0,47%
Austria	-0,48%	-0,66%	0,18%
Germany	-0,32%	-0,35%	0,03%
Netherlands	-0,17%	-0,41%	0,25%
Denmark	0,31%	0,33%	-0,02%

F2 Austria

Financial impact from core and comprehensive levels of GPP

Austria	total financial impact	core	comprehensive	relative procurement value
Cleaning services	-0,38%	0,02%	-0,41%	12%
Construction	-3,83%	-3,83%	0,00%	20%
Electricity	0,03%	0,00%	0,03%	31%
Catering & food	0,49%	0,49%	-	0%
Gardening	0,00%	0,00%	0,00%	0%
Office IT equipment	0,37%	0,37%	0,00%	24%
Paper	18,47%	1,90%	16,57%	1%
Textiles	2,08%	0,42%	1,66%	2%
Transport	-0,04%	-0,04%	-	9%
weighted average	-0,48%	-0,66%	0,18%	

Financial impact on cost elements

Austria		financial impact
Cleaning services		-0,38%
	labour costs	-0,45%
	cleaning products	2,05%
Construction		-3,83%
	investment cost	0,65%
	costs for heating	-22,24%
	costs for electricity use	-26,90%
	costs for water use	-10,76%
Electricity		0,03%
	purchase price	0,03%
Catering & food		0,49%
	procurement of food	1,03%
Gardening		0,00%
	machinery costs	0,00%
	soil improvers	0,00%
Office IT equipment		0,37%
	purchase price	0,83%
	electricity use	-6,22%
Paper		18,47%
	purchase price	18,47%
Textiles		2,08%
	purchase price	2,08%
Transport		-0,04%
	road tax	-0,17%
	fuel costs	-0,17%

F3 Denmark

Financial impact from core and comprehensive levels of GPP

Denmark	total financial impact	core	comprehensive	relative procurement value
Cleaning services	-3,40%	0,38%	-3,78%	9%
Construction	-0,62%	-0,12%	-0,50%	50%
Electricity	0,60%	0,60%	0,00%	18%
Catering & food	0,52%	0,52%	-	4%
Gardening	1,85%	1,85%	0,00%	2%
Office IT equipment	1,12%	0,87%	0,24%	6%
Paper	16,97%	0,00%	16,97%	3%
Textiles	5,67%	5,40%	0,27%	3%
Transport	-0,25%	-0,25%	-	4%
weighted average	0,31%	0,33%	-0,02%	

Financial impact on cost elements

Denmark		financial impact
Cleaning services		-3,40%
	labour costs	-4,29%
	cleaning products	26,19%
Construction		-0,62%
	investment cost	0,25%
	costs for heating	-6,68%
	costs for electricity use	-8,25%
	costs for water use	-3,23%
Electricity		0,60%
	purchase price	0,60%
Catering & food		0,52%
	procurement of food	1,02%
Gardening		1,85%
	machinery costs	36,97%
	soil improvers	0,00%
Office IT equipment		1,12%
	purchase price	1,72%
	electricity use	-12,87%
Paper		16,97%
	purchase price	16,97%
Textiles		5,67%
	purchase price	5,67%
Transport		-0,25%
	road tax	-1,17%
	fuel costs	-1,17%

F4 Finland

Financial impact from core and comprehensive levels of GPP

Finland	total financial impact	core	comprehensive	relative procurement value
Cleaning services	-6,12%	0,06%	-6,18%	10%
Construction	-1,77%	-1,77%	0,00%	37%
Electricity	0,68%	0,23%	0,45%	11%
Catering & food	0,05%	0,05%	-	1%
Gardening	0,00%	0,00%	0,00%	2%
Office IT equipment	0,79%	0,79%	0,00%	34%
Paper	5,43%	0,26%	5,17%	2%
Textiles	4,09%	4,09%	0,00%	1%
Transport	-0,99%	-0,99%	-	2%
weighted average	-0,79%	-0,32%	-0,47%	

Financial impact on cost elements

Finland		financial impact
Cleaning services		-6,12%
	labour costs	-6,82%
	cleaning products	13,91%
Construction		-1,77%
	investment cost	0,40%
	costs for heating	-13,62%
	costs for electricity use	-16,47%
	costs for water use	-6,59%
Electricity		0,68%
	purchase price	0,68%
Catering & food		0,05%
	procurement of food	0,11%
Gardening		0,00%
	machinery costs	0,00%
	soil improvers	0,00%
Office IT equipment		0,79%
	purchase price	1,24%
	electricity use	-9,29%
Paper		5,43%
	purchase price	5,43%
Textiles		4,09%
	purchase price	4,09%
Transport		-0,99%
	road tax	-4,06%
	fuel costs	-4,06%

F5 Germany

Financial impact from core and comprehensive levels of GPP

Germany	total financial impact	core	comprehensive	relative procurement value
Cleaning services	-0,85%	0,20%	-1,05%	9%
Construction	-0,62%	-0,62%	0,00%	58%
Electricity	0,75%	0,75%	0,00%	11%
Catering & food	1,77%	1,77%	-	3%
Gardening	0,00%	0,00%	0,00%	1%
Office IT equipment	0,78%	0,63%	0,15%	7%
Paper	7,14%	0,00%	7,14%	2%
Textiles	2,22%	2,22%	0,00%	1%
Transport	-2,20%	-2,20%	-	9%
weighted average	-0,32%	-0,35%	0,03%	

Financial impact on cost elements

Germany		financial impact
Cleaning services		-0,85%
	labour costs	-1,17%
	cleaning products	13,74%
Construction		-0,62%
	investment cost	0,09%
	costs for heating	-3,04%
	costs for electricity use	-3,68%
	costs for water use	-1,47%
Electricity		0,75%
	purchase price	0,75%
Catering & food		1,77%
	procurement of food	3,80%
Gardening		0,00%
	machinery costs	0,00%
	soil improvers	0,00%
Office IT equipment		0,78%
	purchase price	1,91%
	electricity use	-14,32%
Paper		7,14%
	purchase price	7,14%
Textiles		2,22%
	purchase price	2,22%
Transport		-2,20%
	road tax	-8,00%
	fuel costs	-8,00%

F6 The Netherlands

Financial impact from core and comprehensive levels of GPP

The Netherlands	total financial impact	core	comprehensive	relative procurement value
Cleaning services	-3,28%	0,10%	-3,37%	3%
Construction	-0,97%	-0,96%	-0,01%	67%
Electricity	2,26%	0,79%	1,47%	17%
Catering & food	0,45%	0,45%	-	2%
Gardening	0,12%	0,00%	0,12%	2%
Office IT equipment	0,53%	0,53%	0,00%	2%
Paper	13,34%	1,32%	12,02%	1%
Textiles	3,97%	3,88%	0,10%	2%
Transport	-0,33%	-0,33%	-	3%
weighted average	-0,17%	-0,41%	0,25%	

Financial impact on cost elements

The Netherlands		financial impact
Cleaning services		-3,28%
	labour costs	-3,71%
	cleaning products	12,47%
Construction		-0,97%
	investment cost	0,18%
	costs for heating	-5,94%
	costs for electricity use	-7,19%
	costs for water use	-2,88%
Electricity		2,26%
	purchase price	2,26%
Catering & food		0,45%
	procurement of food	1,13%
Gardening		0,12%
	machinery costs	2,47%
	soil improvers	-0,62%
Office IT equipment		0,53%
	purchase price	1,33%
	electricity use	-9,97%
Paper		13,34%
	purchase price	13,34%
Textiles		3,97%
	purchase price	3,97%
Transport		-0,33%
	road tax	-1,00%
	fuel costs	-1,00%

F7 Sweden

Financial impact from core and comprehensive levels of GPP

Sweden	total financial impact	core	comprehensive	relative procurement value
Cleaning services	-6,62%	0,05%	-6,67%	8%
Construction	-2,14%	-1,38%	-0,76%	56%
Electricity	0,80%	0,00%	0,80%	16%
Catering & food	0,19%	0,19%	-	1%
Gardening	0,11%	0,11%	0,00%	2%
Office IT equipment	1,09%	0,96%	0,13%	8%
Paper	13,92%	0,61%	13,32%	2%
Textiles	1,42%	1,33%	0,09%	1%
Transport	-1,11%	-1,11%	-	5%
weighted average	-1,24%	-0,72%	-0,52%	

Financial impact on cost elements

Sweden		financial impact
Cleaning services		-6,62%
	labour costs	-7,39%
	cleaning products	14,46%
Construction		-2,14%
	investment cost	0,65%
	costs for heating	-19,81%
	costs for electricity use	-24,20%
	costs for water use	-9,59%
Electricity		0,80%
	purchase price	0,80%
Catering & food		0,19%
	procurement of food	0,41%
Gardening		0,11%
	machinery costs	2,26%
	soil improvers	0,00%
Office IT equipment		1,09%
	purchase price	1,80%
	electricity use	-13,47%
Paper		13,92%
	purchase price	13,92%
Textiles		1,42%
	purchase price	1,42%
Transport		-1,11%
	road tax	-4,80%
	fuel costs	-4,80%

F8 United Kingdom

Financial impact from core and comprehensive levels of GPP

United Kingdom	total financial impact	core	comprehensive	relative procurement value
Cleaning services	-3,44%	0,06%	-3,51%	1%
Construction	-7,11%	-2,66%	-4,44%	82%
Electricity	1,19%	1,11%	0,08%	8%
Catering & food	1,12%	1,12%	-	3%
Gardening	1,01%	0,01%	1,00%	1%
Office IT equipment	0,67%	0,67%	0,00%	3%
Paper	12,88%	1,56%	11,32%	0%
Textiles	0,28%	0,28%	0,00%	0%
Transport	-1,74%	-1,74%	-	1%
weighted average	-5,70%	-2,05%	-3,65%	

Financial impact on cost elements

United Kingdom		financial impact
Cleaning services		-3,44%
	labour costs	-3,84%
	cleaning products	10,35%
Construction		-7,11%
	investment cost	1,68%
	costs for heating	-47,70%
	costs for electricity use	-58,67%
	costs for water use	-23,08%
Electricity		1,19%
	purchase price	1,19%
Catering & food		1,12%
	procurement of food	2,55%
Gardening		1,01%
	machinery costs	24,48%
	soil improvers	-6,08%
Office IT equipment		0,67%
	purchase price	1,49%
	electricity use	-11,19%
Paper		12,88%
	purchase price	12,88%
Textiles		0,28%
	purchase price	0,28%
Transport		-1,74%
	road tax	-6,65%
	fuel costs	-6,65%

G Results verification interviews

In the table below, we show details concerning the verification interviews, which we performed in order to verify the answers given by the respondents.

			Criteria included in procurement procedure *										
Country	Type of organisation	Information source procurement value	Cleaning	Construction	Electricity	Catering	Gardening	Office IT	Paper	Textiles	Transport	Furniture	Background doc
Austria	metropolitan	Internal database		SoR/NI						SoR	SoR/AC		Yes
	museum	Accounting department	NI		NI			NI					No
Denmark	borough	No answer	SoR/AC			SoR			SoR				No
	semi-public	Procurement staff inquiry		SoR						SoR		SoR	No
Finland	county	Procurement staff inquiry						SoR/NI	SoR/NI			SoR/NI	No
	county	Accurate estimation			NI	SoR/NI	NI						Yes
Germany	county	Centralised procurement department	AC				NA				AC		No
	borough	Accounting department	AC/NI	AC					AC				Yes
Netherlands	ministry	No answer			SoR	SoR						?	Yes
	county	Procurement diagnoses		SoR				SoR			NI		Yes
Sweden	agency	No answer						FA	FA			FA	No
	borough	No answer					FA			FA	FA		No
United Kingdom	county	Quarterly analyses of procurement expenditure	SoR/AC	FA		SoR							No
	borough	Procurement staff inquiry			SoR		SoR		FA				Yes

* Schedule of Requirements (SoR), Award Criteria (AC), Framework Agreement (FA), Information Not Available (NA), Not included (NI)

Reason Not Included (NI)			Reason
Austria	metropolitan	Construction	Criteria in regulation set by law
	museum	Cleaning, Electricity, Office IT	Supply already green
Finland	county	Office IT, Paper, Furniture	(Part of) supply already green
	county	Electricity, Catering, Gardening	(Part of) supply already green + city requirements include green criteria
Netherlands	county	Transport	(Part of) supply already green

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