The Environmental Performance of Public Procurement

ISSUES OF POLICY COHERENCE

OECD

The Environmental Performance of Public Procurement

ISSUES OF POLICY COHERENCE

OECD

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

– to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;

– to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and

– to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The original Member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became Members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971), New Zealand (29th May 1973), Mexico (18th May 1994), the Czech Republic (21st December 1995), Hungary (7th May 1996), Poland (22nd November 1996), Korea (12th December 1996) and the Slovak Republic (14th December 2000). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

Publié en français sous le titre :

La performance environnementale des marchés publics
VERS DES POLITIQUES COHÉRENTES

© OECD 2003
Permission to reproduce a portion of this work for non-commercial purposes or classroom use should be obtained through the Centre français d'exploitation du droit de copie (CFC), 20, rue des Grands-Augustins, 75006 Paris, France, tel. (33-1) 44 07 47 70, fax (33-1) 46 34 67 19, for every country except the United States. In the United States permission should be obtained through the Copyright Clearance Center, Customer Service, (508)750-8400, 222 Rosewood Drive, Danvers, MA 01923 USA, or CCC Online: *www.copyright.com*. All other applications for permission to reproduce or translate all or part of this book should be made to OECD Publications, 2, rue André-Pascal, 75775 Paris Cedex 16, France.

FOREWORD

OECD's activities in the area of 'greener public purchasing' date from 1996. Through workshops and publications, work has focussed on policy reviews of GPP programmes and initiatives in OECD member countries, as well as the examination of institutional factors which facilitate or hinder their success. This work is summarised in Greener Public Purchasing: Issues and Practical Solutions.

This book builds on previous work in this area. It contains background reports on the assessment of greener public purchasing programmes, as well as their links with public expenditure management. These were prepared as background materials for the workshop on "Greener Public Purchasing", held at the Austrian Ministry of the Environment in Vienna on October 29th-30th, 2001. Additional chapters have been prepared on the links between such programmes and national and international public procurement regimes.

The Secretariat is grateful to the individual authors, workshop participants, and for comments provided by Member countries. Katrin Erdlenbruch played a particularly important role in its preparation. In addition, the OECD Environment Directorate's Steering Group on "Greener Public Purchasing" has played an instrumental role in supporting this work. The contributions of Martin Büchele and Eveline Venanzoni have been particularly significant. The views expressed are those of the individual authors.

Nick Johnstone of the OECD Secretariat has been responsible for the preparation of the book. The assistance of Carrie Delecourt and Soizick de Tilly in the editing and preparation of the manuscript is gratefully acknowledged. The book is published under the responsibility of the Secretary-General of the OECD

TABLE OF CONTENTS

Introduction
by Nick Johnstone and Katrin Erdlenbruch 9
1. The Increased Use of Greener Public Purchasing Policies 9
2. The Implementation of Greener Public Purchasing Policies....10
3. The Relative Economic Importance and Environmental Implications of Public Procurement 10
4. Greener Public Purchasing and the Wider Economy 12
5. Greener Public Purchasing Policies and Other Environmental Policy Instruments....13
6. Greener Public Purchasing Policies and General Policy Integration 13
7. The Structure of the Book 14
References 15

Part I
Greener Public Purchasing and the Environmental Policy Context

Chapter 1: Greener Public Purchasing as an Environmental Policy Instrument
by Donald Marron 21
1. Introduction....21
2. An Overview of Government Purchasing....22
   2.1 How Much Do Governments Purchase?....22
   2.2 What Do Governments Purchase? 25
3. Greener Public Purchasing....26
4. The Direct Effects of GPP: Economic and Environmental Impacts....28
   4.1 A Framework for Evaluating Direct Impacts 28
   4.2 Win-Win Opportunities 29
5. The Indirect Effects of GPP: Changes in Private Purchasing....30
   5.1 Potentially Reinforcing Effects 31
   5.2 Potentially Counteracting Effects....32
   5.3 Implications for Policy Analysis 34
6. GPP as an Environmental Policy Instrument....35
   6.1 Comparing Environmental Policy Instruments 35
   6.2 How GPP Interacts with Other Environmental Policy Instruments 37
7. Conclusion 38
Annex 1.1: A Simple Illustration of Complete Crowding Out....40
Annex 1.2: A Summary of Data Related to Public Procurement 42
References 48

Chapter 2: A Review and Critical Evaluation of Selected Greener Public Purchasing Programmes and Policies
by Renetta Siemens 51
1. Introduction....51
2. GPP Programme and Policy Design Considerations....51
   2.1 GPP Programme and Policy Options 52
   2.2 Barriers to Effective and Efficient GPP Programmes and Policies 54
3. Evaluation of Selected GPP Programmes and Policies....55
   3.1 Environmental Effectiveness 59
   3.2 Cost Effectiveness....64

3.3 Dynamic Effects 68
3.4 Soft Effects 72
4. Designing Effective and Efficient GPP Programmes and Policies 73
4.1 Management Assessment of Selected GPP Programmes and Policies 73
4.2 GPP Programme and Policy Best Practice 74
4.3 GPP Indicators and Data Considerations 76
4.4 Why GPP Programmes and Policies are Rarely Evaluated 77
5. Conclusions 78
Annex 2.1: Characteristics of GPP Programmes and Policies Reviewed 81
References 91

Part II
Greener Public Purchasing and Public Expenditure Management

Chapter 3: Overview of Budget Systems and Public Procurement in OECD Countries
by Anne C. Richard
1. Introduction 101
2. Overview of Standard Procurement Practices 102
2.1 Types of Tenders and the Tendering Process 103
2.2 Types of Contract or Award 103
2.3 Factors in Evaluating Offers and Selecting Contractors 105
2.4 Trends in Procurement Policy 107
3. Budget Systems and Accounting Practices 108
3.1 Decentralised Budgets and Managerial Accountability 110
3.2 Single-Year and Multi-Year Budgeting 111
3.3 Carry-Over, Borrowing Against the Future, and Keeping Savings 112
3.4 Separation of Capital and Current Expenses 113
3.5 Accounting Practices 114
3.6 Capital Charges 116
3.7 Discounting and Discount Rate Policy 117
4. The Extent of Budget Reforms in the OECD 118
5. Environmental Implications 119
References 122

Chapter 4: The Implications of Budget Systems for the Environmental Characteristics of Public Procurement
by Nick Johnstone 127
1. Introduction 127
2. Comparing the Cost Structure of Brown and Green Procurements 128
2.1 Alternative HVAC Systems 128
2.2 Alternative Pest Management Strategies 129
2.3 Alternative Carpeting 130
3. The Implications of Budget Systems and Procurement Practices for the Environmental Characteristics of Public Procurement 132
3.1 Foreshortened Planning Horizons 133
3.2 Split Departmental Responsibility for Operating and Capital Costs 133
3.3 Inadequate Managerial Responsibility for Operating Costs 134
3.4 Accounting Systems and Future Liabilities 135
3.5 Costing of Physical Assets 135
3.6 Flexibility in Choice of Inputs and Retention of Savings 136
4. Specific Financial Tools to Improve the Environmental Characteristics of Public Procurement 136
4.1 Introducing Shadow Prices to Reflect Environmental Externalities 137
4.2 Applying Liability Regimes in order to Reflect Financial Risks Associated With Procurement With Potential Environmental Damages 138
4.3 Adjusting Discount Rates for Procurements With Environmental Impacts 139
4.4 Outsourcing, Third-Party Financing and Other Instruments 140
5. Conclusions 143
Annex 4.1: Hypothetical Procurement Decisions Regarding "Green" and "Brown" Alternatives 145
References 150

Part III
The Legal Dimension of Greener Public Purchasing

Chapter 5: International Procurement Regimes and the Scope for the Inclusion of Environmental Factors in Public Procurement
by Peter Kunzlik 157
1. Introduction....157
2. The Government Procurement Agreement....157
   2.1 Technical Specifications....158
   2.2 Transparency....162
   2.3 Qualification and Selection....162
   2.4 Compliant Tenders – "Additional Criteria" – "Contract Compliance"....163
   2.5 Contract Award Criteria and Weightings....163
   2.6 Power of Derogation....163
3. The European Union....164
   3.1 Technical Specifications....166
   3.2 Qualification and Selection....170
   3.3 Compliant Tenders – "Additional Criteria" – "Contract Compliance"....171
   3.4 Contract Award Criteria and Weightings....173
4. The North American Free Trade Agreement....176
   4.1 Technical Specifications....178
   4.2 Qualification and Specifications....180
   4.3 Compliant Tenders – "Additional Criteria" – "Contract Compliance"....181
   4.4 Contract Award Criteria and Weightings....181
   4.5 The Power of Derogation....182
5. Australia and New Zealand Government Procurement Agreement....182
   5.1 Technical Specifications....185
   5.2 Qualification and Selection....186
   5.3 Compliant Tenders – "Additional Criteria" – "Contract Compliance"....186
   5.4 Contract Award Criteria and Weightings....186
6. Conclusions....187
References 189

Chapter 6: National Procurement Regimes and the Scope for the Inclusion of Environmental Factors in Public Procurement
by Peter Kunzlik 193
1. Introduction....193
2. England and Wales....194
   2.1 Central Government....194
   2.2 Local Authority Procurement....199
3. The United States of America....201
   3.1 Technical Specifications....203
   3.2 Qualification and Selection....206
   3.3 Compliant Tenders – "Additional Criteria" – "Contract Compliance"....208
   3.4 Contract Award Criteria and Weightings....208
4. Australia....210
   4.1 Technical Specifications*....212
   4.2 Qualification and Selection....214
   4.3 Compliant Tenders – "Additional Criteria" – "Contract Compliance"....215
   4.4 Contract Award Criteria and Weightings....215
5. Conclusions....215
   References 217

Conclusions
by Nick Johnstone 221

Annex A: Summary of Proceedings of the Workshop on "Budget, Financial and Accounting Issues in Greener Public Purchasing"
by Nick Johnstone 225

INTRODUCTION

by

Nick Johnstone and Katrin Erdlenbruch***[1]

* National Policies Division, OECD Environment Directorate, Paris
** Institut National de la Recherche Agronomique, Montpellier

1. The increased use of greener public purchasing policies

In recent years a significant number of OECD Member countries have introduced initiatives to reduce the environmentally damaging effects of public procurement. Through various policies and programmes environmental criteria are being applied to purchasing decisions. For example, in many countries purchasing guidelines require that particular products contain a minimum amount of recycled content or achieve specified levels of energy efficiency. In other cases, procurement officers are being provided with detailed information on the environmental impacts of the goods and services that they purchase, in the hope that this will influence their procurement decisions.

Such greener public purchasing (GPP) policies are a reflection both of an increased concern on the part of OECD governments about the effect that their purchasing decisions have on the natural environment, and a belief that the public sector should introduce practices which are consistent with those that it recommends to other actors in the economy, such as private firms and households.

As one reflection of this heightened awareness and concern, OECD Member country governments recently agreed on a Council Recommendation "to improve the environmental performance of public procurement" (see OECD, 2002). The Recommendation formalises the declaration of support for the use of environmentally-preferable public procurement practices expressed in the OECD *Environmental Strategy for the First Decade of the 21st Century*, and which was adopted by OECD Environment Ministers in May 2001.

This report reviews some of the factors which are likely to lead to environmentally effective and economically efficient GPP policies.[2] This includes issues related to the choice of instrument used within the programme, as well as broader issues associated with the context in which it is applied. As a complement to the theoretical analysis, the report provides a review of evaluations of GPP policies that have been undertaken.

---

1. The views expressed in this chapter are those of the authors and do not necessarily reflect those of the institutes with which they are affiliated or the OECD.

2. The report does not address issues associated with the inclusion of social concerns in procurement decisions. While increasingly important objectives in procurement policy, they are beyond the scope of this report.

Issues related to the integration of GPP with the wider policy framework are explored. In addition to links with other environmental policies, this includes links with general issues of public management, and particularly financial, budget and accounting practices. Indeed, it is argued that general reforms associated with public expenditure management may be at least as important as targeted GPP policies in improving the environmental characteristics of public procurement.

And finally, the report reviews the potential conflicts which may exist between GPP policies and competition policy and international trade law. This is important since recent legal developments sin Member countries, in regional trade agreements, and in the World Trade Organisation have implications for the scope for discretion which can be applied in the application of GPP policies.

2. The implementation of greener public purchasing policies

In order to implement their GPP programmes, OECD Member country governments have applied a number of different types of instruments. (See OECD 2000[3] for an extensive overview of existing policy measures.) These include:

- information-based tools such as catalogues and websites, which are designed to provide environment-related information to procurement officers and others;
- training and communications tools, which are designed to increase environmental awareness amongst procurement officers and others;
- accounting and financial tools which are designed to better reflect environmental characteristics of products when choosing between alternative goods and services; and,
- standards and directives, which mandate the incorporation of specific characteristics (performance-based or technology-based) in goods and services purchased.

Such instruments are applied in different ways in different Member countries depending upon the nature of the goods and services affected, the environmental impacts which are to be mitigated through the programme, and a host of other factors. In addition, GPP programmes can be either voluntary or mandatory in nature. And finally, they are often implemented in conjunction with other measures, such as eco-labels. This is discussed at greater length in Section 5 below.

Perhaps most significantly, the means of implementation depend crucially upon the degree of centralisation of procurement decisions. This report focuses on programmes which are initiated by central governments, but in many cases lower-level governments have been central to the implementation of the programmes (Chapter 2 provides a detailed evaluation and assessment of policies in a sub-set of OECD countries).

3. The relative economic importance and environmental implications of public procurement

In general, the higher the share of public demand in total demand the greater the impact that GPP policies and programmes can potentially have on the natural environment. However, putting a precise figure on the relative importance of public procurement in OECD economies is not straightforward. One recent study (Audet 2001) has estimated that in 1998 the government sector expenditures for consumption and investment was responsible for 20% of total GDP in OECD

3. The report is available in German and French, as well as English.

Member countries (and approximately 15% in non-Member countries). This share ranged from under 17% in Japan to over 33% in Sweden (more information on these and other relevant figures is provided in Chapter 1).

However, these figures include compensation for employees. This is, of course, not directly relevant for GPP programmes and policies, since their primary interest is the procurement of infrastructure, goods and non-labour services. The same study, estimated that total expenditures by governments less compensation represented just over 9% of GDP, with a range between just over 5% (Belgium) to just over 18% (Hungary) (Audet 2001).

On average central governments in the OECD are responsible for 37% of total public sector expenditures (less compensation). However, relative shares by country differ markedly. For instance, while the central government in Canada represents less than 15% of total public expenditures, in Turkey the figure is just under 75%. Sub-central governments (state/provincial, local) represent 11% of total public expenditures in Greece, and 81% in Japan (see Chapter 2 for more details).

In environmental terms, it is important to know whether or not the sectors in which public sector demand is important are also those sectors which tend to generate significant environmental impacts. As such, it is important to determine the sectoral disaggregation of public demand. Unfortunately there is no standard data source for the breakdown of public expenditure figures by sector or by commodity classification. However, using input-output tables for Canada, Japan and Austria it is possible to provide rough estimates.

These figures indicate that the most important sectors are administration services, health, education, research, and defense. This is hardly surprising. The next most important sectors include shipbuilding, construction, energy services, transport equipment and transport services. Other sectors which are of some importance but for which there is wide variation across countries, include office equipment, electrical machinery, and wearing apparel (see Chapter 1 for more details).

How environment-intensive are the sectors in which public demand is high? Comparing estimates of the relative importance of American public procurement[4] with data on the environment-intensity of different sectors[5] it is possible to identify environment-intensive sectors in which the share of public in total demand is also important. Indeed, it is the co-existence of these factors (high public-demand intensity and high environment-intensity) which is key to the relative importance of greener public purchasing programmes in bringing about general environmental improvements.

In total, 26 of the 65 sectors listed in the basic input-output tables had greater-than-average public shares of demand. However, only a subset of these appear to also have greater-than-average environmental implications (for the eight pollutants listed in the dataset). Some sectors recur frequently in the listings (see Chapter 1 for the full list). For example, public purchases of products from the pulp, paper and paperboard sector have significant implications for both air pollutants (sulphur dioxide, nitrogen dioxide, carbon monoxide, volatile organic compounds, particulate matter) and water pollution (biological oxygen demand and total suspended solids). Industrial chemicals (except fertilisers) also recur frequently. In other cases the effects of individual sectors are more directed in environmental terms. For instance, purchases of railroad equipment primarily have effects on local and regional air pollutants such as sulphur dioxide, nitrogen dioxide and volatile organic compounds.

---

4. In this case, the standardised input-output tables developed at the OECD were used in order to ensure data commensurability with the IPPS dataset applied. See OECD (1996)

5. These figures were obtained from the World Bank's International Pollution Projection System (Wheeler *et al*. 1994).

However, it is important to remember that some of the most important environmental impacts of public procurement will be indirect. For instance, government purchases of motor vehicles will have upstream effects through the production of a number of environment-intensive sectors such as structural metal products, electrical apparatus, plastics, and rubber. Moreover, it must be noted that these figures only capture the environmental impacts from production and not use. Thus, in some cases it may make sense to target products or sectors which have low direct impacts from production.

4. Greener public purchasing and the wider economy

While the primary objective of GPP programmes and policies is to improve the environmental performance of the public sector itself, it is widely felt that such policies could also have indirect impacts on the environment-intensity of the economy as a whole. For instance, GPP might support technological development or changes in consumer behaviour in an environmentally-beneficial way.

Arguably, the provision of incentives for private firms to develop greener products and technologies is one of the primary objectives of GPP programmes and policies. If successful, public demand can serve as a spur to innovation by increasing the competitive advantage of "greener" products in the market, which will then be followed by wider commercialisation and diffusion. In particular, public demand may provide "demonstration" effects, providing valuable information to other actors in the economy about the potential benefits of newer untried "green" technologies and products (see Jaffe *et al*. 2000 for a general discussion of the role that demand-side policies can play as spurs to "green" technology and product development). On the supply side, GPP programmes and policies may also allow for the realisation of economies of scale or shifts down the firm's learning curve, resulting in reduced production costs, and thus wider diffusion of "greener" technologies.

The extent to which this is likely to happen need not be directly related to the relative importance of public demand, but may instead be a function of distinct market conditions and product characteristics. In particular, the relative importance of technology-related market failures in different sectors is key. Thus, in order to determine whether GPP programmes are likely to influence the wider economy, it is important to understand the nature of innovation and diffusion in different sectors and for different products.

For instance, in a study of the role of public demand on innovation in Canada, Dalpé and Debresson (1999) identify eight fields in which the public sector has an important influence on R&D: railway equipment, telecommunication equipment, scientific instruments, aeronautic, pharmaceuticals, electric industrial equipment, shipbuilding and office furniture. While there is nothing to indicate that these innovations were environmentally-beneficial, it does indicate the potential for demand-side measures such as GPP programmes to play an important role in the support of innovation if it is applied in certain sectors.

As such, GPP programmes can, under certain conditions, result in the development of products which are environmentally preferable to existing alternatives (see Chapter 2). It has been argued that the public sector is likely to be most efficient in the induction of innovation, letting the further development of the market to the private sector. However, it must be recognised that this is an area which is not well understood.

5. Greener public purchasing policies and other environmental policy instruments

Greener public purchasing is not a stand-alone policy tool, but has to be considered as a complement to other policies. Indeed, since it only targets a subset of the potential sources of environmental damage (i.e. the public sector), it must be considered in the context of the broader environmental policy framework which impacts upon all actors in the economy.

In addition, GPP programmes and policies can affect (and be affected by) other environmental policies which are already in place. Indeed, in some cases they are dependent upon pre-existing policies, such as the use of eco-labels as a means of selecting goods for various types of GPP programmes, including voluntary information-based programmes as well as more mandatory programmes such as set-asides. In other cases, the effects may be more indirect and unpredictable. The relationship between GPP programmes and upstream measures such as performance standards or tradable permit regimes can be quite complicated.

For instance, if a GPP programme which mandates particular technological or performance standards is introduced against a regulatory background which is also based upon the application of technology-based or performance-based standards, then it is important that selection criteria in the GPP programme be consistent with these standards. In most cases they will be somewhat more stringent than standards applied in the regulatory framework. However, they should not be so ambitious as to result in a disjuncture in the market, and nor should they be so weak as to legitimate the *status quo*.

Similarly, GPP programmes can be introduced against a background of economic instruments such as emission taxes or tradable permits. In some cases this may undermine the benefits of the application of market-based instruments. For instance, if public authorities and state enterprises have to meet certain performance standard under the GPP programme, this may mean that they have lower permit holdings than would otherwise be the case, thus releasing permits onto the market, driving down their price, and reducing incentives for improved environmental performance amongst private firms.

6. Greener public purchasing policies and general policy integration

Co-ordination with policy instruments in other areas is also key. GPP programmes must be seen in the broader context of public administration, including the underlying public budget systems, procurement law, trade commitments and other relevant areas of public administration. In some cases GPP programmes can support these other policy objectives in other areas, while in other cases there may be a lack of integration.

In Chapters 3 and 4, the links between public expenditure management and the environmental characteristics of public procurement are explored. Chapter 3 identifies a number of important issues which can result in inefficient public expenditure management and which differ across (and within) countries:

- The extent of managerial accountability for decisions related to procurement;
- The time-frames applied in setting budgets, such as single-year or multi-year budget frameworks;
- The extent of temporal flexibility which exists, such as the possibility for carry-over or borrowing-against-the-future;
- The prevalence of split responsibilities for capital and operating costs between different agencies or divisions; and,

- The nature of the accounting procedures used, including the incorporation of such issues as capital charges.

Chapter 3 concludes that while there has been significant reform in many Member countries much remains to be done in order to realise efficiency gains. Most importantly, it also makes the point that these efficiency gains may also have positive environmental consequences, an issue taken up in greater depth in Chapter 4.

It is argued that in many cases (but by no means all cases), reforms to public expenditure management systems will result in "win wins", in which environmental benefits and improved public expenditure management can co-exist. The most important benefits are likely to arise from cases in which "greener" investments have high relatively high capital cost / operating cost ratios or significant implications for end-of-life costs. In such cases, budget reforms which result in longer planning horizons and better co-ordination of incentives within public authorities will yield both financial and environmental gains. However, such "win wins" are by no means given.

In Chapters 5 and 6 the legal framework for GPP is examined through a review of a number of national and international policy frameworks which affect the potential for the inclusion of environmental criteria in procurement in different areas, including: the technical specifications of the good or service to be purchased; the qualification and selection of potential suppliers; and, the contract award criteria. Some of the main points addressed in the two chapters include:

- The distinctions between environmental impacts associated with products and those associated with production processes, and the extent to which the latter can be included in procurement decision-making;

- The precise nature of the "environmental" criteria which can be included (i.e. technological vs. performance, certification for environmental management systems, etc…);

- The scope for the inclusion of "whole-of-life" (and even non-financial) costs in procurement procedures; and,

- The definitions of what is "external" to the contracting authority - i.e. the extent to which costs and benefits should be considered globally across all government departments and agencies.

These points are key to an understanding of the extent to which government authorities can incorporate environmental criteria in their tendering procedures and in procurement generally. The general conclusion is that while there are few significant legal constraints on the "greening" of public procurement, there is some ambiguity and uncertainty in some regimes.

7. The structure of the book

As noted above, the remainder of this book will examine both the potential effectiveness and efficiency of GPP programmes and policies, as well as the links between GPP and other aspects of public administration. More specifically, the report:

- assesses the potential role of GPP as an environmental policy instrument, including issues of integration with other policy instruments (Chapter 1);

- assesses the effectiveness and efficiency of current GPP policies, and review those factors which are important to their success or failure (Chapter 2);

- explores the links between the environmental performance of public procurement and public expenditure management, including both barriers to implementation and potential "win-win" opportunities (Chapters 3 and 4); and,

- assess the extent of legal discretion available for GPP programmes in terms of international trade agreements and obligations (Chapter 5) and domestic competition policy (Chapter 6).

The report concludes with a brief conclusion, summarising the lessons learned, and possible directions for future research. There is also an annex which summarises some of the key lessons learned from a workshop held in Vienna in October 2001, at which many of these issues were explored.

REFERENCES

AUDET, DENIS (2001) "The Size of Government Procurement Markets" in *OECD Journal on Budgeting*, Vol. 1, No. 4.

DALPE, ROBERT and CHRISTIAN DEBRESSON (1989) "Le secteur public comme premier utilisateur d'innovations" in *Revue d'analyse économique*, Vol. 65, No. 1.

HETTIGE, HEMAMALA ET AL. (1994) "The Industrial Pollution Projection System" (Washington, D.C., World Bank Policy Research Working Paper 1431).

JAFFE, ADAM B., RICHARD G. NEWELL AND ROBERT N. STAVINS (2000) "Technological Change and the Environment" (Cambridge, Mass.: NBER Working Paper No. 7970).

OECD (1996) *The OECD Input-Output Database* (Paris: OECD).

OECD (2000) *Greener Public Purchasing: Issues and Practical Solutions* (Paris: OECD).

OECD (2001) *Environmental Strategy for the First Decade of the 21st Century* (Paris: OECD).

OECD (2002) "Recommendation of the Council on Improving the Environmental Performance of Public Procurement" (OECD C(2002)3).

STATISTICS BUREAU OF JAPAN (2000) *1995 Input-Output Tables for Japan 1995* (Tokyo: Statistics Bureau of Japan, Management and Coordination Agency).

STATISTICS CANADA (2001) *The Input-Output Structure of the Canadian Economy: 1996-1997* (Ottawa: Statistics Canada).

STATISTIK AUSTRIA (2001) *Input-Output Tabelle 1995* (Wien: Statistik Austria)

PART I

GREENER PUBLIC PURCHASING AND THE ENVIRONMENTAL POLICY CONTEXT

Greener Public Purchasing as an Environmental Policy Instrument
by Donald Marron

A Review and Critical Evaluation of Selected Greener Public Purchasing Programmes and Policies
by Renetta Siemens

PART I

GREENER PUBLIC PURCHASING AND THE ENVIRONMENTAL POLICY CONTEXT

In this section, the role of "greener public purchasing" (GPP) policies in the broader environmental policy context is reviewed and assessed. This includes both the specific contribution made by targeted GPP policies, as well as their links with other environmental policy instruments.

Chapter 1 looks at the role of GPP from a theoretical perspective, seeking to identify the conditions under which such programmes are likely to contribute to the environmental objectives of public authorities. The distinction between the "direct" and "indirect" effects of GPP programmes is brought clearly into focus. With respect to the potential direct effects of GPP programmes, the relative importance of public sector demand in environment-intensive sectors is key and the chapter reviews the evidence which is available. Unfortunately this is complicated by the relative dearth of data for public procurement at a disaggregated level, whether by sectoral or commodity classification.

Analysis of the indirect effects which arise from the effects of GPP programmes is more complicated. On the one hand, there might be positive effects on the wider economy arising from the role that public demand can play in encouraging more widespread technological innovation and diffusion with positive environmental implications. Indeed, arguably this is potentially the most important role that a GPP programme can play. However, it will certainly be more relevant for some sectors than others. Factors such as learning curves, economies of scale and technology market failures are highlighted as important determinants of the positive role that GPP programmes can play in this area.

On the other hand, GPP programmes may have negative environmental consequences on the wider economy if the increase in demand "crowds out" more environmentally-benign products by increasing their price relative to other goods which are more polluting or resource-intensive. Even though such effects are likely to diminish in importance with time as the aforementioned dynamic effects emerge,[1] recognition of the potential for there to be such effects is important in policy design. Ideally, a GPP programme should maximise the positive "knock-on" effects for the wider economy in the long-run and minimise any short-run negative effects.

Chapter 1 concludes by discussing the links between GPP programmes and policies and other environmental policies which are already in place. This is key since by their very nature GPP programmes only target a sub-set of the actors responsible for a given set of environmental damages. Other actors (firms and households) are subject to a different set of policies.

In some cases GPP programmes are dependent upon pre-existing policies, such as the use of eco-labels as a means of selecting goods for various types of GPP programmes. In other cases, the effects may be more indirect and unpredictable. The relationship between GPP programmes and upstream measures such as performance standards or economic instruments is reviewed, emphasising the need for policy integration and coherence..

---

1. This point was emphasised by Martin Büchele, Austrian Ministry of the Environment.

Chapter 2 provides a description and review of existing GPP programmes, and summarises the evidence that exists in terms of their effectiveness and efficiency. Six programmes in five countries are reviewed:

- Austria's national programme to reduce the environmental impacts from procurement of cleaning supplies, paper, building materials, food, etc.;

- Canada's "Green Power" programme, which is designed to encourage the use of "green" renewable energy;

- Canada's "Federal Buildings Initiatives" which encourages increased energy- and water-efficiency in federal public buildings;

- Denmark's programme to encourage less damaging procurement for computer equipment, transport, cleaning agents, etc;

- United Kingdom's programme encouraging the use of recycled paper central government departments; and,

- United States' "Energy Star" programme which is designed to encourage the purchase of more energy-efficient computer equipment.

The Chapter reviews the effects of these GPP programmes in terms of environmental effectiveness, economic efficiency, dynamic technological effects, and "soft" effects such as improved environmental management generally. While the report concludes that all of these programmes have been successful to one extent or another, there are few systematic evaluations of the programmes. Moreover, the data required in order to undertake such evaluations is not available.

However, on the basis of the data that is available, the review concludes that if such programmes are to be successful efforts must be made to: ensure the commitment of senior management; apply simple and practical tools which are easily understood; incorporate awareness and training programmes to ensure that implementation is effective; and ensure that there is co-ordination with the broader environmental and procurement policy framework. All of these issues were emphasised by participants at the Vienna Workshop. (See Annex A.)

Chapter 1

GREENER PUBLIC PURCHASING AS AN ENVIRONMENTAL POLICY INSTRUMENT

by

Donald Marron[1]

Executive Director, Joint Economic Committee, United States Congress
Washington, D.C.

1. Introduction

Governments increasingly include environmental criteria in their purchasing decisions. For example, purchasing guidelines often require that particular products contain a minimum amount of recycled content or achieve specified levels of energy efficiency. Guidelines may also favour - through price preferences, explicit set-asides, or other mechanisms - suppliers who exceed official pollution standards, abide by environmental frameworks, qualify for environmental labels, or otherwise demonstrate their "greenness".

Such greener public purchasing (GPP) policies have a natural appeal, as they couple increased concern about environmental quality with a not-unreasonable belief that governments ought to lead the way by improving their own purchasing habits. The goal of this report is to develop an economic framework with which to evaluate this belief and, more generally, to identify the strengths and weaknesses of GPP as an instrument of environmental policy.

Several factors play important roles in this evaluation. First is the general design and intent of GPP policies. Some policies seek to correct institutional deficiencies in government procurement practices that lead both to higher government purchasing costs and lower environmental quality. GPP policies that identify and correct such deficiencies are often described as "win-win" since they lead not only to environmental improvement but also to improved government efficiency. Such policies should clearly be encouraged, with policy analysis focusing on identifying and implementing these opportunities. Other GPP policies, however, are designed to improve environmental performance even if it increases government costs or reduces operating performance. Such "win-lose" policies require closer scrutiny to ensure that increased costs for the government are justified by the resulting environmental benefits.

1. The views expressed in this chapter are those of the author and do not necessarily reflect those of Joint Economic Committee or the OECD.

A second factor is the magnitude of government purchasing. GPP will be a more effective instrument of environmental policy, all else equal, when the government sector is a large, coordinated purchaser of relevant products. This is certainly the case in some sectors, e.g. defense and highway construction, where the central government is the primary source of demand. In many other sectors, however, the direct impact of GPP may be quite limited either because the government sector comprises only a small portion of overall demand or because government purchases are spread across many, uncoordinated government units. In these sectors, GPP policies will have significant impacts only if individual governments coordinate their actions or private consumers and producers react in ways that reinforce the intent of the GPP policy.

A third crucial factor is the private sector response to GPP. Private sector purchases in many sectors dwarf public sector purchases, so policy analyses of GPP should be sensitive to the indirect effects of GPP on private markets. In principle, the private sector response may either reinforce or counteract the change in government purchasing. Private purchasing may become greener if the government policy reduces the costs of purchasing green products (e.g., by encouraging innovation that creates new, greener products or by enabling green suppliers to realize significant scale economies) or increases market acceptance of green products (e.g., by demonstrating their commercial feasibility). Conversely, private purchasing may also become browner (i.e., less green) if the government policy results in higher prices for green products or lower prices for brown products (e.g., through standard supply and demand responses). The likelihood and magnitude of these reinforcing and counteracting effects depends on specific features of the product markets.

The remainder of this report explores these issues in greater detail and develops a framework for evaluating GPP relative to other environmental policy instruments. Section 2 considers the magnitude and scope of government purchasing in OECD member countries. Section 3 distinguishes different types of GPP policies. Section 4 discusses the potential direct effects of GPP on environmental quality and the government's economic performance. Section 5 analyses how GPP may indirectly affect private consumption and production decisions. Section 6 discusses how GPP compares to other environmental policy instruments. Section 7 then concludes.

2. An overview of government purchasing

2.1 How much do governments purchase?

The government sector accounts for a significant fraction of expenditures on goods and services. A recent, comprehensive analysis of OECD member countries has estimated that total government sector expenditures averaged almost 20 percent of gross domestic product (GDP) from 1990 to 1997 (OECD 2001).[2] (See Annex 1.2 for a fuller discussion on the relative importance of public procurement in OECD economies.) As shown in Table 1.1, the government sector's share varies significantly across member countries. Average total expenditure shares for 1990 to 1997 varied from 16 to 33 percent. The average government share has declined several percentage points over the last three decades (OECD 2000). This downward trend appears to have continued in recent years (OECD 2001), but its future course is uncertain.

---

2. There are several reasons to believe that the 20 percent figure overestimates current government expenditure shares. First, the estimate covers the period 1990 to 1997. If government purchasing shares have continued declining, current shares would be lower. Second, the 20 percent estimate is based on 28 of 30 OECD member countries. According to an earlier study (OECD 2000), these two countries, Luxembourg and Mexico, have the lowest government purchasing shares in the OECD.

The 20 percent figure refers to all government expenditures; in other words, it includes both government purchasing and employee compensation. Government purchasing alone is significantly smaller: about 9 percent of GDP for OECD member countries during this period. Employee compensation thus accounts for slightly more than half of government expenditures. The 9 percent figure should be used when estimating the absolute size of government procurement markets; the 20 percent figure should be used when estimating the relative size of the government in the economy.[3]

Table 1.1. Government Procurement in OECD Countries
(Average total expenditures as a percent of GDP, 1990-1997)

Country	Total Expenditures	Total Expenditures less Employee Compensation
Canada	26	11
United States	19	9
Australia	20	9
Japan	17	9
Korea	16	9
New Zealand	18	7
Austria	25	12
Belgium	17	5
Czech Republic	25	17
Denmark	28	11
Finland	26	10
France	23	9
Germany	18	7
Greece	19	7
Hungary	30	18
Iceland	26	13
Ireland	21	10
Italy	20	8
Netherlands	19	9
Norway	25	11
Poland	23	11
Portugal	21	7
Slovak Republic	25	15
Spain	21	9
Sweden	33	15
Switzerland	20	9
Turkey	18	7
United Kingdom	25	13
OECD Weighted Average	20	9

These figures illustrate that the government sector accounts for a significant fraction of purchasing. It must be emphasised, however, that this purchasing aggregates decisions by many distinct entities: the central government (which itself may have many independent departments and agencies making purchasing decisions), sub-central governments, and social security funds. (See Annex 1.2) [4] Recent studies of OECD member countries have estimated that central governments account for 30 to 35 percent of government purchasing (OECD 2000, 2001). Central government purchases thus average about 5 to 7 percent of GDP. Sub-central governments and social security

3. Of course the best measure of government's relative share of purchasing would be the ratio of government purchasing to total purchasing. Unfortunately, the most comprehensive analyses of procurement (e.g., OECD 2001) do not make this calculation.

4. Recent attempts to quantify government purchasing have typically excluded public utilities and other public enterprises (OECD 2001). GPP may thus be farther reaching if it includes such enterprises.

funds account for the remaining 65 to 70 percent of government expenditures and 10 to 13 percent of GDP. Sub-national governments are numerous, so their individual expenditure shares, as a fraction of national GDP, are much, much lower.[5]

Taken together, these figures illustrate an inherent limitation of using government purchasing as an instrument of environmental policy. At most, procurement policies co-ordinated across all levels of government will directly affect, on average, only 20 percent of purchases in a targeted market. Policies co-ordinated at the central government, similarly, will directly affect, on average, only 5 to 7 percent of purchases in a targeted market. Policies by individual sub-national governments or policies by decentralised units of central governments will, of course, have even smaller direct effects. The relative importance of individual government units, over central governments, is likely to increase, as decentralisation is a continuing trend in public management (Richard 2003).

These observations suggest that the potential environmental benefits of GPP may be small, relative to other environmental policy instruments that can target 100 percent of relevant markets (See Annex 1.2). This does not imply that GPP is undesirable. Other policy instruments may be unavailable or may be more effective when combined with GPP initiatives. Moreover, some GPP initiatives may be justified by their direct economic benefits ("win-win" opportunities) independent of their environmental implications.

The small potential direct environmental benefits of GPP do imply, however, that policy evaluations should be particularly sensitive to the indirect impacts of these policies. As discussed in detail below, GPP initiatives may influence private purchasing and production decisions. Private purchasing may be 20, 50, or 100 times larger than the government purchasing controlled by GPP, so even small changes in private purchasing could have dramatic impacts on the policy evaluation of procurement initiatives.

GPP is, of course, less limited as an environmental policy instrument when government is a large purchaser in a relevant market. One implication of this is that GPP will have more leverage in countries that have relatively large and centralised governments. Similarly, GPP will also have greater direct impact if individual governments co-ordinate their procurement initiatives among themselves or with private organisations (see, e.g., Westling 2000). GPP will also have greater direct effects at the sub-central level when focused on products that have relatively narrow geographic markets (e.g., a product that is manufactured and consumed within a single region). In these markets, individual local governments may be significant customers, despite their small role in the overall national economy. Moreover, local governments are more likely to be aware of the specific environmental issues associated with production and usage of the product and can tailor their policies accordingly

5. This discussion uses government expenditure shares of national GDP as a simple measure of the importance of government purchasing. This measure implicitly assumes that each individual country is a relevant market within which to evaluate government purchasing. In practice, some relevant markets extend across many countries (e.g., the global market in crude oil), implying that the relevance of any particular government is much lower than the GDP shares would indicate. Conversely, some relevant markets may also be quite local in nature. In these cases, the GDP shares are a reasonable first estimate of the government's relevance, since narrowness of the market affects both the numerator and the denominator.

Finally, an additional implication is that GPP will have greater direct impacts if focused on product markets in which the government plays a particularly large role.

2.2 *What do governments purchase?*

Anecdotally, it is clear that government purchasing varies significantly across product markets. Governments are the primary customers for defense and highway construction, for example, so we may expect that the government share of national purchasing in these areas is much higher than average. Conversely, governments are generally small purchasers of consumer goods, so we would expect their share of national purchasing in these areas to be quite low.

Unfortunately, little research appears to have systematically quantified variation in government purchasing across product types and a detailed effort at doing so was beyond the scope of this paper. Two studies have, however, examined data from the 1980s. Using input-output tables, Richard (2003) reports central government purchasing shares for nine OECD member countries in the mid to late 1980s; her figures cover the seventeen sectors in which the central governments represent, on average, 5 percent or more of national demand. Prominent among these sectors are defense, transportation, and energy related industries (See also Annex 1.2.)

Francois *et al*. (1996) examined government sector purchases in the United States using data for 1987. They aggregated purchases to roughly 85 industry categories and calculated government purchase shares for each one. They found that government purchase shares were highest in defense-related industries, construction and maintenance, and certain areas related to computers and scientific equipment. For most merchandise sectors, however, government purchasing accounted for less than 5 percent of demand. Francois *et al*. (1996) thus concluded that preferential procurement initiatives were unlikely to have significant impacts in most sectors.[6]

Table 1.2 updates their analysis using more recent data for 1997. The table identifies the twenty sectors with the highest government purchasing shares (out of about ninety sectors overall) and reports the basic constituents of overall government purchasing (federal defense, federal non-defense, and state and local). The results are quite consistent with the earlier findings of Francois *et al.* (1996). Government is the predominant purchaser in one industry sector, ordnance and accessories, where it represents more than 80 percent of demand. The government comprises from 7 to 26 percent of purchasing in the other nineteen listed sectors, including aircraft and other transportation equipment, construction maintenance and repair services, and various types of technical equipment. Interestingly, four of the listed sectors involve energy production: electricity, oil, natural gas, and coal. In the remaining seventy sectors (not listed in the table), the government sector comprises less than 7 percent of purchasing; indeed, it typically comprises less than 2 percent. This purchasing is spread across federal, state, and local governments so, as noted above, the purchase shares of individual governments are typically much lower still.

It is difficult to draw general results from this table and the related results in Richard (2003) and Francois *et al.* (1996). The data are either more than a decade old, limited to a single country, or, in the case of Francois *et al*. (1996), both. Nonetheless, they do suggest some useful hypotheses about government purchasing that should be tested against additional data. First, central governments are a major purchaser of defense-related products. These products would thus seem to be a natural focus for GPP initiatives. Second, non-defense purchases are concentrated in a limited number of sectors

---

6. Francois *et al.* (1996) analyzed procurement policies that favor domestic products over foreign. Much of their analysis applies equally to any procurement policy that favors one type of product (e.g., green) over another.

such as construction maintenance and energy use. As with defense, these sectors should be a particular focus of GPP initiatives (and, in the case of energy use at least, have been). Third, government purchases comprise a relatively small portion of purchasing of most goods and services. Thus most sectors would seem to be weak focuses for GPP initiatives, absent strong indirect effects on private purchasing.

Table 1.2. Government Sector Purchases as a Share of Total Purchases in the US, 1997
(Top Twenty Industries, Ranked by Government Purchasing Share)

			Federal			State/
Code	Industry	**Total**	Defense	Non-Def.	Total	**Local**
13	Ordnance and accessories	81.1%	65.1%	15.0%	80.2%	0.9%
12	Maintenance and repair construction	26.3%	2.7%	2.2%	4.9%	21.4%
60	Aircraft and parts	26.0%	24.2%	1.8%	26.0%	0.0%
61	Other transportation equipment	18.9%	18.0%	0.5%	18.5%	0.4%
63	Ophthalmic and photographic equipment	15.8%	4.9%	0.4%	5.3%	10.5%
62	Scientific and controlling instruments	14.6%	9.5%	2.4%	11.9%	2.7%
73A	Computer and data processing services	13.5%	5.6%	5.2%	10.8%	2.7%
65C	Water transportation	12.8%	4.2%	5.4%	9.6%	3.1%
31	Petroleum refining and related products	12.5%	1.4%	1.2%	2.5%	10.0%
68A	Electric services (utilities)	11.7%	0.7%	0.7%	1.4%	10.3%
26B	Other printing and publishing	11.5%	0.3%	2.6%	2.9%	8.6%
56	Audio, video, and communication equipment	11.5%	7.9%	3.4%	11.3%	0.1%
65A	Railroads and related services	10.2%	0.5%	1.5%	2.0%	8.2%
73C	Other business and professional services	9.3%	2.9%	1.8%	4.6%	4.6%
29A	Drugs	9.1%	0.7%	0.3%	1.1%	8.0%
7	Coal mining	8.8%	0.0%	3.9%	3.9%	4.9%
68B	Gas production and distribution (utilities)	8.0%	0.3%	0.6%	0.9%	7.1%
27A	Industrial and other chemicals	7.6%	1.1%	1.6%	2.7%	4.9%
65D	Air Transportation	7.0%	1.6%	2.1%	3.7%	3.3%
58	Miscellaneous electrical machinery and supplies	6.9%	3.9%	1.4%	5.3%	1.6%

Source: *US DOC, Bureau of Economic Analysis (2002)*.

3. Greener public purchasing

Governments have developed GPP policies to target a broad range of environmental issues. Perhaps the most common initiatives aim to increase the recycled content of government purchases and to increase the efficiency of energy-using devices. Numerous additional initiatives target other issues, such as promoting the use of bio-based or organic products, alternative fuels, clean electricity, water conservation, integrated pest management, and less-polluting manufacturing technologies.

GPP policies often begin with a generalised mandate that procurement be effected in an environmentally conscious manner. Such general intentions have spawned a broad variety of specific programs. Table 1.3 lists a few examples and proposes one simple way to classify them for purposes of policy analysis. Additional examples are discussed in Siemens (2003), OECD (2000), and the references therein.

The first set of programs seeks to correct deficiencies in government budgeting, accounting, and financing mechanisms. These deficiencies include "use it or lose it" incentives from single-year budgeting structures, conflicts between capital and operating budgets, and misalignment of operating

and budgeting responsibility. Richard (2003) and Johnstone, Erdlenbruch and Müller (2003) discuss these institutional deficiencies in great detail.

Flawed budgeting institutions contribute to environmental harm if they lead procurement officials to inefficient purchasing decisions that favour browner products. Overemphasis on initial capital costs, for example, may cause procurement officials to favour less energy efficient devices, even when more efficient devices would save government resources over the long run. Similarly, neglect of future disposal or replacement costs may cause officials to select products based on their near term costs, even if more durable or easily disposed products would cost less in the long run.

As noted above, GPP policies that correct such deficiencies are often described as "win-win", in that they both promote environmental goals and reduce government purchasing costs. Other policies are, of course, "win-lose", in the sense that they promote greener government purchasing even if that results in higher government purchasing costs.

The simplest examples of potentially "win-lose" policies are price preferences and set-asides. Under a price preference, the government accepts offers from both green and brown suppliers, but it gives green products a financial edge in evaluating those offers. Certain U.S. states, for example, offer price preferences of 5 to 15% to suppliers who meet recycled content standards (Marron 1997). A more complex approach is to impute shadow prices to the environmental attributes of particular products (e.g., a certain price for each ton of carbon emitted in production); these implicit environmental prices are then added to standard financial prices for purposes of comparing offers. Price preferences have certain similarities to environmental taxes but, as discussed below, they differ in significant ways.

Set-asides target quantity rather than price. As illustrated in Table 1.3, a typical set-aside requires the government to hit a particular purchasing target, e.g., 30% recycled content in paper or 100% purchases of electricity from renewable resources. Set-asides potentially increase government purchasing costs in two ways: by requiring the purchase of green products even when brown alternatives may be less expensive and by explicitly limiting competition between brown and green alternatives.

Table 1.3. Examples of Greener Public Purchasing Policies

Policy Category	Examples	Reference
Improved Budgetary, Accounting, and Financing Systems	Facilitate Third-Party Financing Of Energy Efficiency Capital Investments (Federal Buildings Initiative, Canada)	Siemens (2003)
	Life-Cycle Costing In Developing Federal Buildings (Switzerland)	OECD (2000)
Price Preferences For Greener Products	5-15% Price Preferences For Recycled Content In Paper And Other Products (Several U.S. States)	Marron (1997)
	Environmental Shadow Prices (Switzerland)	Johnstone, Erdlenbruch and Müller (2003)
	Weight Price At 60% And Ecological Aspects At 40% In Tendering For Washing And Cleaning Agents (Vienna Hospital Association)	Siemens (2003)
Set-Asides For Greener Products	100% Of Building Electricity Requirements From Renewable Sources (Two Federal Departments In Alberta, Canada)	Siemens (2003)
	Share Of Organically Grown Food Must Reach 30% By 2005 (Vienna, Austria)	Siemens (2003)
	100% Of Paper From Recycled Content, 10% Of Power From Renewable Sources (Federal Agency, United Kingdom)	Siemens (2003)
	100% Of Personal Computers Must Meet Energy Star Standards (United States)	Siemens (2003)
Information Provision, Labeling, and Training	Information, Workshops, Green Catalog (Procurement Service Austria)	OECD (2000), Siemens (2003)
	Environmental Guidelines And Training (Denmark)	Siemens (2003)
	Eco-Labeling (Several Dozen Countries)	OECD (2000)

A final category of policies, and perhaps the broadest, seeks to increase procurement officials' understanding of green alternatives through information provision, training, and outreach. These programs include the preparation of green product catalogues, workshops on green procurement, and the development and endorsement of green product labels. Some of these policies support "win-win" initiatives. For example, they may introduce procurement officials to affordable green products that have been overlooked in previous procurement decisions, or they may assist officials in making appropriate life-cycle costing decisions. Other information policies support "win-lose" policies that promote more expensive, but greener alternatives. Green labelling programs, for example, may provide the basic foundation for set-aside or price preference policies that favour labelled products.

These relationships illustrate a more general point that the four policy types identified in Table 1.3 often intertwine with each other. The Canadian policy to purchase electricity from renewable resources, for example, took the form of an explicit set-aside (i.e., it was expressed in terms of a quantity target), but was motivated, in part, by a related effort to calculate an appropriate price preference. That preference, in turn, was based on valuing not only environmental benefits but also some economic benefits that might be thought of as "win-win" (Siemens 2003). The four policy categories identified in Table 1.3 should therefore not be viewed as mutually exclusive.

4. The direct effects of GPP: economic and environmental impacts

4.1 A framework for evaluating direct impacts

By influencing government purchasing decisions, GPP initiatives directly affect both environmental quality and the economic performance of the government. Unfortunately, relatively little detailed information is available regarding either of these impacts. Anecdotal reports suggest that some environmental goals of GPP initiatives have been achieved, but these are difficult to verify; moreover, it is not clear whether narrowly defined environmental goals translate into overall environmental improvements (Siemens 2003). Data on the economic impacts of GPP are similarly sketchy and, as a result, "formal evaluation of the true economic efficiency of GPP is not possible" (Siemens 2003).

Given this lack of hard data, current discussion of the direct impacts of GPP must focus on setting out a qualitative framework for evaluation (see Siemens 2003, for a related evaluation framework). The first issue, of course, is whether GPP significantly changes the composition of government purchasing and whether it influences a substantial magnitude of purchasing. Policies must have significant impacts on both composition and magnitude to generate significant direct impacts. As noted by Siemens (2003), a particular issue in this regard is the incrementality of GPP initiatives, i.e., to what extent would greener purchasing have happened anyway due to other forces?

On the environmental side, another key driver is the extent to which policies address environmentally intensive sectors. All else equal, GPP will deliver greater environmental benefits if it is focused on sectors that raise the largest environmental concerns per unit of output. As discussed below, this does not necessarily mean the sectors with the largest environmental impacts per unit of output since existing regulations may have already substantially addressed those impacts. The most direct environmental benefit thus comes from focusing on environmental concerns that existing regulatory structures may have overlooked.

On the economic side, additional driving factors are the relative mix of "win-win" and "win-lose" initiatives, the magnitude of the economic costs and benefits resulting from these initiatives, and the administrative costs of pursuing these initiatives. GPP policies will generate the greatest economic benefits if they identify and implement "win-win" opportunities, avoid "win-lose" initiatives, and minimise the administrative costs of policy implementation.

4.2 Win-win opportunities

As noted above, GPP advocates have argued that the government often makes inefficient purchasing decisions that not only hurt the environment, but also waste government resources. A typical example would be the purchase of a regular HVAC system when careful balancing of initial capital costs and long-run operating costs would favor a highly energy efficient one.[7]

Such uneconomic decisions can frequently be traced to specific failures in government institutions and policies (Johnstone, Erdlenbruch and Müller 2003, Richard 2003, Siemens 2003). Budgeting processes that treat capital and operating outlays separately, for example, may result in capital decisions being made without due regard to their implications for operating costs. Poor decisions may also occur because of a lack of relevant information. If purchasing officials are unaware of more economic alternatives (or do not understand the tradeoffs between initial costs and operating costs), they will not make efficient decisions.

Such institutional failures should obviously be remedied by institutional innovations that better orient the incentives of purchasing officials and that provide them with sufficient information to make good decisions. Johnstone, Erdlenbruch and Müller (2003), Richard (2003), and Siemens (2003) investigate these issues in significant detail.

For the purposes of this report, it is sufficient to note three things about potential "win-win" initiatives. First, such institutional innovations and information provision should be pursued regardless of their implications for environmental performance. Efficient government operation is a legitimate goal of government policy and should be pursued. The fact that some efficiency improvements may generate environmental benefits is certainly useful for marshalling support behind initiatives to improve government operations, but they should not limit the scope of these efforts.

Second, efforts to identify and implement "win-win" policies should be informed by careful analysis of actual costs and benefits. Environmental advocates have long made claims about the untapped potential for energy efficiency in both the private and public sectors (see, e.g., the writings of Amory Lovins). Yet policy analyses of efforts to tap these opportunities often find real savings are substantially less than projected (see, e.g., Joskow and Marron 1993). This is not to say that inefficiencies do not exist in the market for energy efficient products.[8] Rather, it is simply to note that

---

7. It must be noted that increased energy efficiency does not necessarily translate into environmental benefits. Environmental impacts are determined not only by the efficiency of the device but also by how much it is used. It turns out, for reasons that are clear in theory and amply documented empirically, that people use high efficiency devices more intensively than they use low efficiency ones; after all, it costs less to operate efficient devices. For example, people with well-insulated homes tend to heat them to higher temperatures. In some cases, this "rebound" effect can offset the environmental gains entirely; more commonly, it offsets a portion of the potential gains.

8. For example, careful econometric analyses have found that decisions to adopt energy efficient technologies appear to be more sensitive to initial costs than they are to long-run

there are many possible reasons why supposed "win-win" opportunities have not been exploited. In practice, a common reason is that the economic "win" is not really as large as simple spreadsheet models would predict.

Third, the existence of "win-win" opportunities does not free policy-makers from the need to make tradeoffs between economic performance and environmental quality. The existence of "win-win" opportunities simply means that existing purchasing decisions are inefficient. In correcting such inefficiency, policy makers must decide to what extent they wish to correct the economic inefficiency (i.e., reduce purchasing costs) and to what extent they wish to correct the environmental inefficiency (i.e., reduce environmental impacts). Some tradeoffs will inevitably be made, either implicitly or explicitly, between these two policy goals.

5. The indirect effects of GPP: changes in private purchasing

In addition to their direct effects on government purchasing, GPP policies may also have indirect effects on the purchasing decisions made by private firms and consumers. Indeed, governments frequently intend for GPP policies not only to change their own purchasing decisions but also to "influence the behaviour of other socio-economic actors by setting the example, and by sending clear signals to the market-place" (OECD 2000, p. 20). The hope, in short, is that GPP will induce private sector buyers to make their own greener purchasing decisions.

Such reinforcing effects are certainly possible; greener government purchasing can, under certain circumstances, elicit greener private purchasing. However, this potential is tempered by two caveats. First, such reinforcing effects can occur only under certain circumstances; many green purchasing decisions will not produce reinforcing private behaviour. Second, other forces may push in the opposite direction, so that GPP actually induces browner private purchasing (e.g., through crowding out effects).

The following chart summarises various ways in which changes in private purchasing might reinforce or counteract changes in government purchasing. The different mechanisms are distinguished by whether they operate through the supply side of the private market (i.e., they influence the cost and availability of green and brown products) or the demand side (i.e., they influence private demand for green and brown products).

Table 1.4. How Private Purchasing May Reinforce or Counteract GPP

	Potentially Reinforcing	*Potentially Counteracting*
Supply Side	Cost Reductions, Induced Innovation	Crowding Out
Demand Side	Setting the Example	Setting a Bad Example

The likelihood and importance of each of these factors will depend on specific product market conditions and the design of GPP policies.

---

operating costs. These findings confirm the conventional wisdom, at least among environmental policy analysts, that efficient technologies are underused. However, there is significant work to be done to understand the magnitude of and reasons for these findings (Jaffe et al. 2000). DeCanio (1998) provides evidence that these problems may be worse in the public sector.

5.1 Potentially reinforcing effects

Induced innovation

One goal of GPP initiatives is to inspire private firms to develop new, greener products that will not only satisfy government purchasers but also attract private customers. For such induced innovation to have significant impacts on private purchasing, green suppliers must succeed at three distinct stages of innovation: they must invent a new product or process, commercialise it, and then gain significant private market acceptance. Each of these stages - invention, commercialisation, and diffusion - is essential to successful innovation.[9]

GPP initiatives are potentially most effective at the first stage of this process: invention. As noted by Geroski (1990), "procurement policy which clearly expresses a demand for services beyond current capabilities is likely to stimulate the development of those capabilities." In other words, if the government offers a large enough carrot and clear enough guidance, the private sector will respond by developing new products. There is ample historical evidence for this belief. Government procurement has frequently driven invention in industries such as defense and technology. In addition, there are several examples of green product invention in response to procurement initiatives, including the development of highly energy efficient clothes dryers, electric motors, and office copiers (Westling 2000).

Of course, the fact that targeted government procurement can inspire private sector inventiveness does not mean that such inventiveness will generate significant social benefits.[10] New products will have minimal impact unless private firms commercialise them and achieve significant market presence. Supplier decisions to commercialise will be largely driven by their expectations about private buyers' willingness to purchase. That willingness will, in turn, be driven by how well the new product satisfies purchasers' needs and budgets.

GPP can thus have significant impacts on innovation only if it generates products that private buyers want and can afford. GPP is therefore most promising when it focuses on product attributes, such as energy efficiency, that will clearly be of interest to private buyers.[11] Conversely, GPP is likely to be less promising when it focuses on product attributes that are irrelevant to private purchasers (e.g., aspects of the production process that have no effect on product performance). In these cases, GPP will be an ineffective instrument of overall environmental policy unless other factors drive commercialisation and diffusion.

---

9. This three-step taxonomy goes back at least to Schumpeter (1942); Jaffe et al. (2000) provide a nice discussion in the context of environmental regulation. Both these works use the term "innovation" to refer to the second stage, commercialization. This report uses a somewhat different definition, in which innovation refers to all three stages.

10. Any social evaluation of the inventive activity induced by government procurement must also consider its opportunity costs. In the absence of the government policy, some inventive activity may well have occurred (possibly in a different direction).

11. As noted by Geroski (1990), "it is almost certainly the case that civil servants are in a poor position to second guess civilian or commercial needs." As a result, procurement policy should focus solely on those product attributes that are of interest to both the government and the private sector. Geroski continues " but there is no reason to think that they are necessarily less competent than anyone else when seeking to act as informed purchasers of goods and services for their own use."

Cost reductions

GPP might encourage commercialisation and diffusion directly if it helps the private supplier lower its production costs and, thereby, leads to lower prices for private buyers. Such cost reductions might occur if government purchasing enables suppliers to realise significant economies of scale or to reduce costs through production experience.

In theory, such cost reductions are sometimes possible if the government provides the initial demand for a new product and if the cost structure has the right characteristics. The magnitude of such cost reductions, however, will depend on the production technology, the size of the government demand, and the likelihood of additional private demand. The incremental benefit of the government purchasing will be significant only if the government demand is large enough to allow the realisation of significant scale economies or learning economies and if the likely private demand is sufficiently small that these economies would not have been realised anyway. If government demand is small, it is unlikely to assist green suppliers in realising significant economies of scale or learning economies.[12]

Setting the example

Finally, GPP might also promote commercialisation and diffusion if private purchasers follow the example set by the government. Firms may follow the government example for two reasons. First, government purchasing of the green product may demonstrate the practicality or acceptability of the green product. In essence, the government purchasing acts as certification of or advertising for the green product. Second, government purchasing of the green product may set a moral example that some private purchasers may choose to follow.

Both the demonstration effect and moral suasion may induce private purchasers to follow the government's lead in environmental purchasing. As with the supply-side effects, these demand-side effects are most likely when the green product has minimal market share and when private customers already have an incentive to adopt greener products (e.g., energy efficient devices). These effects are less likely with more established products (for which some diffusion has already occurred) and products that impose significant costs on private adopters.

5.2 *Potentially counteracting effects*

Crowding out

Although it is often argued that private market reactions will reinforce changes in government purchasing, it must be emphasised that such reactions may also work in the opposite direction. The simplest examples arise in markets that operate under the most basic supply and

---

12. This discussion touches on a much more general issue – how do innovators find initial markets for their products? – that private firms face everyday. One common private sector solution is, indeed, to seek large individual purchasers to provide initial demand for the product. In some cases, these initial demanders (chosen because they especially value the product being developed) will pay sufficiently high prices that they will defray development costs. In other cases, however, the initial purchasers demand a return for their commitment: low prices and/or an equity stake in the resultant product. Recognizing this, government purchasing officials should not necessarily offer high prices initially, just so that private purchasers can benefit from low prices later on.

demand factors: upward sloping supply and downward sloping demand. Upward sloping supply curves indicate, intuitively, that higher market prices will induce increased production by suppliers; downward sloping demand curves similarly indicate that higher market prices will induce decreased purchasing by buyers.

Under these conditions, a GPP initiative that shifts purchases from a brown product to a green one will cause the price of the green product to increase and the price of the brown product to decrease. Private purchasers would then respond by purchasing more brown products and fewer green products. In economic jargon, government purchases of green products crowd out private purchases (vice-versa with the brown product), thereby counteracting the government policy.[13] Crowding out may be partial or complete; a simple example of complete crowding out, based on actual experiences in the United States and Germany, is presented in Annex 1.1.[14]

The existence and magnitude of crowding out depends on several factors. First, private sector consumption of the green product must already exist; government purchases of a green product cannot crowd out private purchases that do not exist.[15] This suggests, consistent with the discussion of innovation incentives earlier, that government procurement will be most effective when it focuses on products that are truly innovative and have not yet succeeded in penetrating the commercial marketplace. Once a product has commercial exposure, the potential for crowding out effects increases substantially.

Second, the degree of crowding out depends on the relative magnitudes of government and private sector demand. If government is a major purchaser of the product in question, crowding out will typically be lower. This should be intuitive: the greater the change in government purchasing, the more difficult it is for private purchasers to adjust their behaviour in response. Conversely, crowding out is quite straightforward if government is a small purchaser.

Third, crowding out depends on the price responsiveness of private demand and private supply (the price elasticities of demand and supply). In the example in the Annex 1.1, private purchasers consider the brown and green goods to be perfect substitutes because greenness relates only to the production process, not the services delivered to the buyer. The resulting high cross-price elasticity of private demand for the brown and green products implies that crowding out will be complete: private buyers easily substitute brown products (freed up by the change in government purchasing) for green ones.

Substantial crowding out can also occur if supply elasticities are low. If it is difficult to produce more of the green product (e.g., due to capacity constraints, then increased government purchasing will lead directly to decreased private purchasing. Similarly, if brown producers see little reason to reduce production, any brown products freed up by the change in government policy will be reallocated to private buyers. In other words, the brown product that the government chooses not

---

13. Crowding out in this context was originally analyzed by Marron (1997). Crowding out is a common issue in many policy contexts. Within environmental regulation, a notable current example is "carbon leakage" under regulation of greenhouse gas emissions. The concern is that emission constraints imposed on regulated nations will induce emission intensive industries to increase production in unregulated nations, thereby offsetting some or all of the environmental benefits in the regulated nations.

14. Under rare conditions, crowding out may more than offset the government policy, making overall production browner (Marron 1997).

15. Reverse crowding out may still occur through the market for the brown good, however.

to buy may still find a buyer, while the green product that the government does buy might otherwise have been purchased by a private buyer.

Crowding out will be minor if these conditions are reversed. Highly elastic green and brown supply will generate little crowding out, as most of the change in government purchasing is reflected in changes in actual production. Similarly, a low cross-elasticity of demand for the green and brown products will minimise crowding out, since private buyers will not substitute between the two products; in this case, however, there is also little reason to believe that the private sector will be enthusiastic about adopting the green product.

Ultimately, of course, the potential for crowding out is an empirical issue that must be addressed for specific policy initiatives and product markets. At this time, no policy evaluations have specifically addressed crowding out resulting from GPP. Some analyses have identified complete crowding out, as illustrated in Annex 1.1, in green electricity purchasing efforts that focus on private buyers (see, e.g., Rader 1998); these results presumably apply equally to similar programs for government purchasing. Other studies have examined other types of government procurement policies, e.g. programs that favor domestic over foreign producers. Not surprisingly, these studies find some effect from government policies; crowding out is not usually complete. Unfortunately, the studies have not estimated the specific magnitude of crowding out effects; for summaries of this literature, see Mattoo (1996) and Trionfetti (2000). Further research is required.

Setting a bad example

Finally, it must be noted that governments sometimes set bad examples. The classic example, in a somewhat different context, occurs when performance standards such as building codes fall behind market and technology realities. Such "reassuring but outdated standards", as the OECD (2000) describes them, place downward pressure on the greenness of private purchasing decisions, since it is often simplest just to build to code. This effect would not be as direct in the case of green procurement, since the standard does not bind private transactions. However, if firms follow the government example for their own green purchasing, an outdated procurement policy may hold back greener private purchasing.

Proponents of GPP initiatives may view such situations as an opportunity to ratchet up environmental standards to new levels. While this is certainly one possible response, it is equally an opportunity to evaluate whether any GPP initiative is still required. The choice must depend on the potential for additional gains and their costs.

5.3 Implications for policy analysis

The most important implication of this discussion is that policy analyses of GPP should consider changes in private purchasing. Evaluations that focus solely on direct changes in government purchasing may overlook significant indirect effects that have equal or greater importance.

A related implication is that evaluations should distinguish between the short-run and long-run effects of changes in government purchasing. Crowding out effects, for example, are more likely and more severe in the short-run; they weaken, but do not disappear, over the longer term. The benefits of learning by doing or induced innovation, on the other hand, are more likely to accrue over the longer term. Policy evaluation should recognise these timing differences.

At the same time, policy evaluations should not accept simple claims that potential future dynamic benefits justify specific actions. Changes in private behaviour can depend quite sensitively on specific market conditions. As a result, policy design and analysis must be informed by specific information about relevant markets. GPP advocates cannot simply point to the possibility of invention, economies of scale, or demonstration effects and conclude that GPP will have positive spillovers into private purchasing behaviour. These positive indirect effects are possible, but they do not necessarily follow from any government procurement initiative (Edquist and Hommen 1998). Similarly, GPP detractors cannot simply point to the possibility of commercially irrelevant invention, crowding out, and stagnant standards to conclude that GPP initiatives are impotent or counterproductive. Instead, objective analysis must consider actual market conditions and likely market reactions.

A final implication is that GPP initiatives are likely to be most effective when they are focused on truly new products. GPP provides a much larger boost to invention, commercialisation, and diffusion when the government provides the initial market for a green product. At the same time, crowding out effects are minimised when the government purchases truly new products. For these reasons, GPP initiatives that focus on new products and processes should be favoured over those that attempt to switch government purchasing to long-available green alternatives.

6. GPP as an environmental policy instrument

GPP is just one of many instruments in the environmental policy toolkit. Others include market-based instruments (e.g., emission taxes, subsidies, and tradeable permit systems), direct regulation (e.g., performance standards and equipment standards) and information and labelling requirements. In evaluating GPP as an environmental policy instrument, it is important both to compare it to these other instruments and to understand how it might work in conjunction with them.

6.1 Comparing environmental policy instruments

Environmental policy instruments can be evaluated along a variety of dimensions; these include the portion of the market that they target, the burdens they place on producers and consumers, the incentives they create for product users, the incentives they create for innovation, the burden they place on the public treasury, and the degree to which they are subject to political or personal manipulation. GPP differs significantly from other policy instruments along several of these dimensions.

As noted earlier, perhaps the most crucial difference is that GPP directly affects only a small portion of the relevant market. Market-based regulatory systems, direct regulations, and information programs can, in principle, reach all producers and consumers within a particular jurisdiction. Even if some producers and consumers are exempted, such policies will generally encompass the majority of activity. GPP initiatives, on the other hand, generally encompass only a small minority of relevant purchases. For the reasons discussed above, the small focus of GPP limits its effectiveness as an environmental policy tool. Greening 1 percent, or even 5 percent, of purchases in a particular market can only do so much.

GPP also differs from many environmental policy instruments by emphasising environmental decision-making by product purchasers. Emission taxes, permit systems, and direct regulations typically operate through the supply side of the market, affecting producers, distributors, and retailers most directly. Purchasers then base their decisions on their own preferences and budgets and the price and product combinations that the market provides. For reasons that have been clear for centuries (at least back to Adam Smith), this is usually a desirable allocation of responsibilities: the

government sets the standards, suppliers determine how best to respond to them, and purchasers select the best resulting products; each participant has responsibility for making decisions for which it is best qualified.

GPP, labelling regulations, and other green purchasing initiatives complicate this process if they require buyers to consider not only their own preferences (about which they are presumably well-informed) but also the environmental impacts of their purchasing decisions (about which they may have little information or understanding).[16] Transferring this burden to purchasers raises significant concerns about both the efficiency of purchasing decisions and the quality of environmental decisions. Governments have responded to this concern by developing labelling systems, guidebooks, etc. that reduce the informational burden on purchasers (OECD 2000). Other governments have implemented "shadow price" systems, in which environmental concerns are embodied in implicit environmental taxes (Johnstone, Erdlenbruch and Müller 2003). Such innovations help separate the informational burdens and policy responsibility for environmental decisions from responsibility for purchasing decisions.

The incentive effects of GPP depend on program design. A risk, shared by many direct regulations and information programs, is that GPP may provide little or no incentive for incremental improvements in environmental performance. As noted by Johnstone, Erdlenbruch and Müller (2003), one manifestation of this problem is that green purchasing may affect the decision of what device to purchase (e.g., regular vs. energy efficient), yet have no effect on ongoing operating decisions. Similarly, purchasing guidelines modelled on regulatory standards (e.g., a requirement that recycled content exceed a specified level), do little to encourage behaviour that exceeds the standard. Finally, purchasing guidelines that encourage a switch from brown to green products do little to combat a more direct cause of environmental problems: the overall scale of purchasing (Marron 1997). Well-designed emission taxes and tradeable permit systems, in contrast, provide incentives for cleaner behaviour along each of these dimensions.

As discussed earlier, GPP can provide very direct incentives for innovation. If government demand is sufficiently large, private suppliers will be willing to develop new products and processes to satisfy government purchasing requirements. GPP thus provides a direct demand stimulus for innovation. If government purchasers work closely with potential suppliers, it also provides a direct channel by which users and producers can jointly pursue innovative opportunities. Such demand-side approaches to innovation have often proved successful in the past (Edquist and Hommen 1998). Other environmental policy instruments, such as taxes, tradeable permits, and direct regulations, typically work most directly on the supply side of the market. These policies also create significant incentives for innovation (Jaffe, Newell, and Stavins 2000), but through different channels.

The fiscal implications of GPP depend on the prevalence of "win-win" opportunities. "Win-win" initiatives reduce government costs, thereby expanding the government's ability to provide services or reduce taxes. In this regard, "win-win" GPP initiatives are similar to pollution taxes and auctioned permit systems that raise new revenues for the government.[17] "Win-lose" initiatives, of

---

16. In this regard, it is amusing (but saddening) to note that many well-educated Americans still believe that aerosol cans contain CFC-based propellants that damage the ozone layer. In the U.S., this has not been true for more than two decades. The average person does not have the incentive to keep well-informed about such issues; as a result, they are unlikely to make sophisticated green purchasing decisions.

17. Taxes create significant economic distortions. In other words, in collecting each Euro in revenue, taxes reduce private sector welfare by more than a Euro. The specific ratio depends on a host of details, such as the structure of the tax and nature of market responses; it is not uncommon, however, for empirical estimates to be in the range of 1.2 to 2.0. Thus, every

course, have the opposite effect on the public treasury; in this regard, they are similar to subsidy systems and to regulatory systems that impose direct costs on the government (e.g., through monitoring and enforcement costs) or indirect costs through increased purchase prices.

A final distinction is that GPP initiatives appear to receive significantly less public scrutiny than do other environmental policy initiatives. Such reduced scrutiny reflects a combination of factors: packaging (who could be against buying green?), the potential for "win-win" opportunities, and the relatively small stakes (compared with policies that directly affect entire markets). Whether such reduced scrutiny is desirable is another matter. Lack of attention may allow legislators or purchasing officials to design policies and make purchasing decisions that favour their own political or personal agendas, rather than broader social goals.[18]

6.2 How GPP interacts with other environmental policy instruments

This discussion has identified key distinctions between GPP and other environmental policy instruments. In practice, of course, specific environmental problems may be addressed with multiple policy instruments. For that reason, it is important to consider how GPP may complement or conflict with other policy instruments.

A natural starting point is the earlier observation that GPP may be particularly effective at encouraging innovation but, conversely, that it may be relatively weak at sparking subsequent commercialization and diffusion. Under these conditions, it seems natural to view GPP as an instrument focused on eliciting the development of greener products and technologies, while other policy instruments (e.g., taxes, subsidies, and direct regulations) may be focused on the broader private marketplace.[19] Comprehensive environmental policy development should emphasize the strengths of each instrument, while moderating their weaknesses.

A related observation is that the limited scope of GPP may be an asset, rather than a limitation, in achieving certain policy goals. Specifically, the government can use its own purchasing as a testing ground for environmental policies and greener products. By undertaking such testing, the government may position itself to make more informed decisions about subsequent regulations affecting broader public and private markets. GPP can thus set a foundation for better design of traditional environmental regulations.[20]

Finally, it must be noted that GPP raises the potential for over-regulation in a world of pre-existing environmental regulations. This potential is frequently overlooked in policy analyses, so it is best illustrated with a stylized example: Suppose that policymakers have already developed a system of environmental regulations to address a specific environmental concern, e.g., emissions of sulphur

---

time a Euro of revenue is raised, taxpayers are made worse off by 1.2 to 2.0 Euros. Such distortions make environmental policies that raise revenue more attractive and vice-versa.

18. Marron (1997) cites an instance in which a green purchasing standard for recycled toner cartridges in the United States was allegedly designed to favor a specific firm with close ties to a senator.

19. In this regard, it is interesting to note that some products described in Westling (2000) are being promoted by other means (e.g., subsidies).

20. A similar phenomenon exists in the software industry, where vendors are asked whether they "eat their own dog food" (i.e., use their own software). There is much to be said for the government eating its own dog food.

dioxide (SO_2) from electricity generation. These regulations reduce SO_2 emissions, but do not eliminate them.

Now suppose that a green procurement official is evaluating government purchases of electricity. Should that official consider SO_2 emissions as part of her evaluation? The answer, somewhat surprisingly, is a qualified no. If the existing regulatory system has appropriately addressed environmental concerns about SO_2 emissions, then the purchasing official can safely ignore them. The costs of those emissions are already incorporated in the price of electricity (which reflects the costs associated with regulatory programs). To include them again in an environmental assessment would be double-counting.

In practice, this line of argument can get muddied, of course, because existing environmental regulations are rarely perfect. The basic idea, however, is extremely robust. Green procurement initiatives will generate greater social gains (and, likely, greater environmental gains) when they address environmental issues that have been poorly addressed by existing regulations.

7. Conclusions

The economic framework developed in this report recognises three potential economic justifications for GPP initiatives:

- Structural inefficiencies in government purchasing;
- Insufficient environmental regulations; or.
- Insufficient public and private support for innovation.

Only the second of these has distinct implications for environmental policy design. Improvements in government purchasing and the development of appropriate innovation policies are desirable in their own right and ought to be pursued, essentially independent of their environmental implications. Environmental policymakers have an important role in these areas, particularly because the banner of "buying green" and achieving "win-win" solutions may assist in marketing economically desirable reforms; it is important, however, that they coordinate their activities with other, non-environmental officials.

The economic framework also implies that GPP has specific strengths and weaknesses as an instrument of environmental policy. GPP is most promising, relative to other environmental instruments, when government is the primary source of demand. In these cases, GPP can be a near-perfect substitute for other environmental instruments.

In markets with significant private demand, GPP appears to be most promising when it focuses on developing and commercialising innovative green products for which there is a latent private demand. In other words, GPP will be most effective when it focuses on bringing forth new green products that the private sector has reason to adopt. Private sector adoption can, in principle, greatly amplify changes in government purchasing. This is crucial since individual governments typically make up only a small fraction of purchases in relevant markets.

Conversely, GPP will be least promising when it focuses merely on switching government purchases from existing brown products to existing green products. Such switching will generate relatively minor environmental gains, given the relatively small purchasing power of most government entities (5% or less of many markets). Moreover, such switching will sometimes be offset, in whole or in part, by contrary changes in private purchasing. Such offsetting behaviour is particularly likely with products whose environmental characteristics are invisible or irrelevant to private purchasers (i.e., products for which there is not latent private demand for the green product).

Most notable among these are products that differ only in the greenness of their production, but not in their quality for the buyer.[21] For these products, we should expect private buyers to favor the best price and quality combinations. As a result, their purchasing decisions may run directly counter to changes in government policy.

21. There are, of course, instances in which firms care about production methods. Most noticeably, firms often want to purchase products made from recycled content; such purchases presumably satisfy some customer, employee, and investor pressures to act green. Similar pressures are likely to be weaker for other environmentally relevant production decisions (e.g., choice of solvents).

ANNEX 1.1: A SIMPLE ILLUSTRATION OF COMPLETE CROWDING OUT

This annex illustrates complete crowding out with a stylised example of GPP in an electricity market. While stylised, this example reflects actual experience with certain efforts to promote green electricity purchases in the United States (Rader, 1998); a Workshop participant indicated that a similar experience had occurred in Germany.

Producers sell power into a central grid that resells power to customers. Before the GPP policy, producers generate 1000 gigawatt-hours (GWh) of electricity, 80% from brown power sources and 20% from green sources. The private sector purchases 90% of electricity production, and the government purchases the remaining 10%.

Electricity Purchases (GWh) Before Greener Public Purchasing

	Brown	Green	Total
Private Sector	720	180	900
Public Sector	80	20	100
Total	800	200	1000

Suppose that the government adopts a stringent GPP policy for electricity: it will purchase only electricity generated by green sources. The government notifies the electricity grid, which responds by allocating sufficient green power to the government. (This is necessarily an administrative allocation; electrons won't flow any differently.) The resulting purchases are then as follows:

Electricity Purchases Under Greener Public Purchasing

	Brown	Green	Total
Private Sector	800	100	900
Public Sector	0	100	100
Total	800	200	1000

The GPP policy is completely successful, in that government purchases of electricity are 100% green; government's green purchases have increased by 80 GWh. Unfortunately, private sector electricity purchases from green sources have dropped by 80 GWh. Government's green purchases have crowded out private green purchases one-for-one. Crowding out is complete and the GPP has had no effect on overall electricity production or associated pollution.

This extreme result depends on two key aspects of this stylised electricity market. First, private consumers consider brown and green power to be perfect substitutes; they do not care which they receive, so they prefer whichever is least expensive. Second, it is easy for producers to move brown power from the government to private purchasers (and green power in the opposite direction). Under these two conditions (which hold quite well in actual electricity markets), private customers easily switch their production from green to brown power. In fact, they probably do not even realize that it is occurring.

Although this is an extreme case, it well illustrates the crowding out problem that can face other GPP initiatives. If private purchasers are willing and able to switch from green to brown alternatives, then their reactions can undermine, in whole or in part, the intent of government policy.

ANNEX 1.2: A SUMMARY OF DATA RELATED TO PUBLIC PROCUREMENT[22]

In order to assess the impacts of a specific public procurement policy, it is important to take into account that government procurement figures (9% of GDP and 20% of total expenditures) are aggregates (See also section 2) and that they do not include environmental data. More precisely, such figures have to be carefully analysed for four reasons:

- The public procurement shares vary for different OECD member countries;
- The figures are computed for "total governments" and include various distinct public sector units;
- The figures are aggregated over all product markets; and,
- The emission intensity of the different sectors is not accounted for in the figures.

This means, on the one hand, that the individual magnitude of government expenditure could be smaller than often suggested but, on the other hand, that the efficiency of government procurement policies could be greater than often suggested if the targeted production has important environmental impacts.

Public procurement by member countries and government entities

Table 1.1 in section 2.1 shows total government expenditure and total government procurement for different OECD member countries from 1990-1997. The following table (Table 1.5) splits public procurement figures by government entity. Indeed, the influence of GPP policies depends on the internal organisation of the public sector, i.e. the relative importance of various government units in total demand (See section 2.1 and Atkinson and van den Noord 2001).

22. This annex has been prepared by Katrin Erdlenbruch.

Table 1.5. Public procurement by level of government in OECD countries

(As percent of GDP, 1990-1997, including consumption and investment and excluding compensation for employees)

Country	TE less Compensation			
	General	Central	Local	Social
Canada	11.47	1.69	8.80	0.02
United States	8.8	3.71	5.11	-
Australia	8.85	2.07	5.81	-
Japan	9.35	1.85	7.59	0.08
Korea	9.13	3.94	5.1	0.09
New Zealand	7.28	3.66	3.80	-
Austria	12.16	2.75	5.70	3.70
Belgium	5.37	2.48	1.95	0.30
Czech Republic	17.03	4.45	6.53	5.18
Denmark	10.63	3.34	7.20	0.09
Finland	9.64	4.22	7.44	1.22
France	9.05	3.24	4.22	1.60
Germany	7.32	1.52	5.39	0.40
Greece	7.29	4.32	0.84	1.30
Hungary	18.31	8.56	7.38	2.05
Iceland	12.92	4.81	5.07	2.11
Ireland	10.08	2.73	7.11	0.12
Italy	7.99	2.72	4.90	0.43
Netherlands	8.96	3.68	4.90	0.37
Norway	11.44	5.61	6.06	-
Poland	10.69	6.55	4.31	-
Portugal	7.24	4.83	2.59	0.13
Slovak Republic	15.34	9.46	2.79	2.98
Spain	8.74	2.63	4.44	1.64
Sweden	14.6	6.25	9.00	0.04
Switzerland	8.6	2.08	6.24	0.12
Turkey	7.47	5.58	1.13	-
United Kingdom	13.08	9.00	3.29	0.10
Weighted average	9.17	3.39	5.44	0.51

Source: Audet (2001).

Public procurement by sector and country

Public procurement figures not only aggregate different government entities, but also aggregate a whole range of product markets. Unfortunately, countries do not tend to keep data on public consumption by sectoral or commodity classification. However, tentative estimates of the relative importance of different sectors in public demand can be illustrated using figures derived from input-output tables for Austria, Canada and Japan. [23] Whereas the total share of public demand in total demand amounts to 12,8%, 11,7% and 13% respectively, sector specific shares vary widely in the three countries. (See tables 1.6, 1.7, 1.8).

Data from different countries is not easily comparable as each country has its own sector- and product classifications, but some similarities are identifiable. Not surprisingly, public demand is of high importance in sectors such as administration services, health, education (including research) and military expenditures. The next most important sectors include shipbuilding, highway maintenance, construction, transport equipment and transport services.

A great part of the differences in demand shares has to be attributed to different classifications used in the three countries. The figures can nonetheless be revealing. For instance, office

23. Input-output tables for Austria 1995, Canada 1993 and Japan 1995

equipment appears to be important in Canada (34.6% of total demand is public), but less important in Japan (machinery for office & service industry 4.4%) or in Austria (office machinery and computers 1.7%, electrical machinery and apparatus 4.3%). Public demand for wearing apparel and leather products amounts to 13.6% in Austria, but only to 2% in Japan. Similarly, gas distribution and electric power account for respectively 12% and 11% of total demand in Canada, whereas public demand for electrical energy, gas, steam etc only amounts to 2.8% of total demand in Austria.

Table 1.6. Some examples of public shares of total demand for Canada

Ships, boats & parts (excluding pleasure boats)	96.30%
Personal medical goods	89.30%
Highway and bridge maintenance	80.00%
Textile medical products	72.60%
Office equipment (excluding photocopy & fax equipment)	34.62%
Men's & boys' clothing24	25.15%
Office supplies	22.96%
Gas distribution	12.21%
Electric power	11.19%
TV, VCR, accessories, & unrecorded tape	8.33%
Photocopy & microfilm equipment	6.67%
Newspapers	3.42%
Computers, video units, printers etc.	3.39%
Other paper, containing wood	1.89%
Other paper, wood-free	0.56%

Table 1.7. Some examples of the public share of total demand for Japan

Other transport equipment (& repairs)	22.82%
Construction	15.17%
Ships and repair of ships	14.74%
Miscellaneous manufacturing products	9.74%
Research	8.42%
Heavy electrical equipment	8.30%
Electronic equipment & communications equipment	7.73%
Publishing and printing	5.11%
Machinery for office & service industries	4.39%
Office supplies	4.29%
Transport by private cars	3.18%
Gas and heat supply	1.38%
Wearing apparel & other textiles	1.36%
Motor vehicles	0.48%
Paper products	0.16%
Pulp, paper, paperboard & processed paperboard	0.09%

24. Excluding: Man-made fabric for clothing, Men's & boys' knitted clothing, women's knitted clothing, children's knitted clothing, other women's clothing, other clothing & accessories, and man-made fabric for clothing.

Table 1.8. Some examples of the public share of total demand for Austria

Research and development services	24.43%
Recreational, cultural & sporting services	14.09%
Land transport & transport via pipeline	8.28%
Wearing apparel; furs	7.47%
Med. Precision, opt instruments, watches, etc	7.24%
Printed matter and recorded media	6.21%
Leather and leather products	6.18%
Other mining and quarrying products	5.07%
Electrical machinery and apparatus	4.33%
Construction work	3.01%
Electrical energy, gas, steam etc	2.83%
Chemicals, chemical products	2.11%
Office machinery and computers	1.69%
Motor vehicles, trailers & semi-trailers	1.13%
Pulp, paper and paper products	1.04%

Surprisingly low public demand shares are found in some sectors in individual countries. For instance, public demand for computers, video units and printers, or newspapers are just 3.4% of the market in Canada. Similarly, motor vehicles with 0.5% and paper products and pulp and paper with 0.25% of the market in Japan are also surprisingly low. Low proportions for motor vehicles with 1.1% and pulp and paper products with 1% are also found in Austria.

The figures also reveal some interesting issues related to product substitution in the public sphere. For instance, it is interesting to note that in the sector "other papers", Canada's public share of demand is 1.8% in the market for wood-containing papers, but only 0.6% in the market for wood-free papers. Similarly, the low figures for motor vehicle sales to public authorities in Austria and Japan may be due to greater propensity for leasing rather than purchase.

Table 1.9 disaggregates the Canadian public demand shares for the sectors listed previously in Table 1.6 by government units: federal government, provincial government and other entities of the total government sector, including the defence sector, universities, hospitals and municipal governments. These figures underline that the sub-national governments have a very different procurement structure from the central government.

Table 1.9. Examples of public shares of total demand by government entity, Canada

IO Sector	Total Government	Federal Government	Provincial Government	Others[25]
Ships, boats & parts, excl. pleasure boats	96.30%	0	0	96.30%
Personal medical goods	89.30%	0	49.58%	39.72%
Highway and bridge maintenance	80.00%	2.59%	7.78%	69.63%
Textile medical products	72.60%	0	0	72.60%
Office equipment, excl. copy & fax	34.62%	11.54%	11.54%	11.54%
Men's & boys' clothing	25.15%	9.36%	0	15.79%
Office supplies	22.96%	3.39%	5.61%	13.96%
Gas distribution	12.21%	1.48%	3.05%	7.67%
TV, VCR, access, & unrecorded tape	8.33%	8.33%	0	0
Photocopy & microfilm equipment	6.67%	6.67%	0	0
Newspapers	3.42%	0.00%	0	3.42%
Computers, video units, printers etc.	3.39%	0.82%	0.03%	2.54%
Other paper, containing wood	1.89%	1.89%	0	0
Other paper, wood-free	0.56%	0.56%	0	0

Source: IO tables Canada (1993).

The environmental intensity of public procurement

The environmental impact of GPP is not just a function of the importance of the public share of demand, but also of the environment-intensity of the targeted sector. For instance, the Canadian provincial government's demand accounts for 48% of total demand for pharmaceuticals (due to provincial responsibility for health services), whose production could be environmentally intensive. Similarly, in countries with publicly-owned electricity supply generation, public sector demand for different fuels can be environmentally-significant.

Unfortunately, systematic data on the relative environment-intensity of public procurement is limited (See section 2.2). However, comparing American public procurement data (François et al 1996) with data on the environment-intensity of different sectors derived from the Industrial Pollution Projection System (Hettige et al. 1994), it is possible to identify environment-intensive sectors in which the share of public in total demand is also important. It is the co-existence of these factors (high public-demand intensity and high environment-intensity) which is key to the relative importance of greener public purchasing programmes in bringing about general environmental improvements.

As such, Table 1.10 lists those sectors which have both public shares of demand which are greater than the weighted mean for all sectors and for which emissions per unit of production (for eight separate pollutants) are greater than the weighted mean for all sectors. In total, 26 of the 65 sectors listed in the I-O tables had greater-than-average public shares of demand. However, only a subset of these appear to also have greater-than-average environmental implications (for the seven pollutants listed).

25. Including hospitals, universities, defence, municipal governments.

Table 1.10. American Sectors with Above-Average Public Shares of Demand and Environment-Intensity

SO_2	NO_2	CO	VOCs	PM	BOD	TSS
Electrical Industrial Machinery	Cutlery, Hand Tools, & General Hardware	Fabricated Metal Products Nec	Shipbuilding And Repairing	Shipbuilding And Repairing	Pulp, Paper, & Paperboard	Fabricated Metal Products Nec
Pulp, Paper, & Paperboard	Electrical Apparatus And Supplies, N.E.C.	Electrical Apparatus And Supplies, N.E.C.	Furniture & Fixtures Of Metal	Pulp, Paper, & Paperboard	Industrial Chemicals Except Fertilizer	Pulp, Paper, & Paperboard
Industrial Chemicals Except Fertilizer	Pulp, Paper, & Paperboard	Pulp, Paper, & Paperboard	Structural Metal Products	Chemical Products, N.E.C.		Industrial Chemicals Except Fertilizer
Fertilizers & Pesticides	Paper & Paperboard Containers & Boxes	Industrial Chemicals Except Fertilizer	Fabricated Metal Products Nec			Fertilizers & Pesticides
Synthetic Resins, Plastic Materials & MM Fibres	Industrial Chemicals Except Fertilizer	Synthetic Resins, Plastic Materials & MM Fibres	Electrical Apparatus And Supplies, N.E.C.			Synthetic Resins, Plastic Materials, & MM Fibres
Chemical Products, N.E.C.	Fertilizers & Pesticides	Chemical Products, N.E.C.	Pulp, Paper, & Paperboard			Rubber Products, N.E.C.
Railroad Equipment	Synthetic Resins, Plastic Materials, & MM Fibres		Pulp, Paper & Paperboard Articles,			
	Railroad Equipment		Industrial Chemicals Except Fertilizer			
	Tires And Tubes		Fertilizers & Pesticides			
			Synthetic Resins, Plastic Materials, & MM Fibres			
			Paints, Varnishes, & Lacquers			
			Chemical Products, N.E.C.			
			Railroad Equipment			
			Motorcycles And Bicycles			
			Tires And Tubes			

REFERENCES

ATKINSON, PAUL AND PAUL VAN DEN NOORD OECD (2001)."Managing public expenditure: some emerging policy issues and a framework for analysis" (Paris, OECD Economics Department, Working Paper no. 285.)

AUDET, DENIS OECD (2001)."The Size of Government Procurement Markets" in *OECD Journal on Budgeting*, Vol. 1, No. 4.

DALPE, ROBERT and CHRISTIAN DEBRESSON (1989)."Le secteur public comme premier utilisateur d'innovations, " in *Revue d'analyse économique*, Vol. 65, No. 1

DECANIO, STEPHEN J. (1998)."The Efficiency Paradox: Bureaucratic and Organisational Barriers to Profitable Energy-Saving Investments" in *Energy Policy* Vol. 26: 441-454.

EDQUIST, CHARLES AND LEIF HOMMEN (1998)."Government Technology Procurement and Innovation Theory", Innovation Systems and European Integration Research Project Report (http://www.tema.liu.se/tema-t/sirp/PDF/322_1.pdf).

FRANCOIS, JOSEPH. F., DOUGLAS NELSON, AND N. DAVID PALMETER (1996)."Public Procurement: A Post-Uruguay Round Perspective" (London: Centre for Economic Policy Research, Discussion Paper No. 1412).

GEROSKI, P. A. (1990)."Government Procurement as a Tool of Industrial Policy" in *International Review of Applied Economics*, Vol. 4: 182-198.

HETTIGE, HEMAMALA ET AL. (1994)."The Industrial Pollution Projection System" (Washington, D.C., World Bank Policy Research Working Paper 1431).

JAFFE, ADAM B., RICHARD G. NEWELL, AND ROBERT N. STAVINS (2000)."Technological Change and the Environment" (Cambridge, Mass.: National Bureau of Economic Research (NBER).Working Paper 7970, October 2000).

JAPAN STATISTICS BUREAU (2000)."Input-Output Tables for Japan 1995" (Tokyo: Statistical Standard's Department of the Management and Coordination Agency).

JOHNSTONE, NICK, KATRIN ERDLENBRUCH AND KASPAR MÜLLER (2003)."The Implications of Budget Systems for the Environmental Characteristics of Public Procurement" Chapter 4 in this volume.

JOSKOW, PAUL L. AND DONALD B. MARRON (1993)."What Does Utility-Subsidized Energy Efficiency Really Cost?" in *Science*, Vol. 260: 281,370.

MARRON, DONALD B. (1997)."Buying Green: Government Procurement as an Instrument of Environmental Policy" in *Public Finance Review*, Vol. 25 No. 3: 285-305.

MATTOO, AADITYA (1996).“The Government Procurement Agreement: Implications of Economic Theory” in *The World Economy*, Vol. 19, No. 6: 695-720.

OECD (2000). *Greener Public Purchasing: Issues and Practical Solutions* (Paris: OECD).

OECD (2001).“Government Procurement: A Synthesis Report” (Paris: OECD, TD/TC/WP(2001)17/REV1).

RADER, NANCY (1998).“Green Buyer’s Beware: A Critical Review of Green Electricity Products” (Washington, DC.: Public Citizen)

RICHARD, ANNE (2003), "Overview of Budget Systems and Public Procurement in OECD Countries" Chapter 3 in this volume.

SCHUMPETER, J. (1942).*Capitalism, Socialism, and Democracy* (New York: Harper).

SIEMENS, RENETTA (2003)."A Review and Critical Evaluation of Selected Greener Public Purchasing Programmes and Policies" Chapter 2 in this volume.

STATISTIK AUSTRIA (2001)."Input-Output Tabelle 1995" (Wien: Statistik Austria).

TRIONFETTI, FEDERICO (2000), “Discriminatory Government Procurement and International Trade” in *The World Economy* Vol. 23 No. 1: 57-76.

UNITED STATES DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS (2002)."Input-Output Tables for 1997" (Washington, D.C.: US Department of Commerce).

WESTLING, HANS (2000).“Final Management Report Annex III Co-Operative Procurement of Innovative Technologies for Demand Side Management” (Paris: International Energy Agency Demand Side Management Program).

Chapter 2

A REVIEW AND CRITICAL EVALUATION OF SELECTED GREENER PUBLIC PURCHASING PROGRAMMES AND POLICIES

by

Renetta Siemens[1]

Privy Council Office, Government of Canada, Ottawa

1. Introduction

There is heightened public awareness of the importance of environmentally and socially responsible procurement. This is reflected in international efforts (such as the OECD Guidelines for Multinational Enterprises and the UN Global Compact) that encourage the private sector to improve their corporate labour and environmental practices (Gereffi *et al.,* 2001). Similar efforts are being undertaken by public authorities since it is recognised that public purchasing, by virtue of its considerable size and diversity, can have considerable influence in the marketplace, and as such is one avenue to promote sustainable consumption and production.

The purpose of this report is to review a small number of "greener public purchasing" (GPP) programmes and policies to assess their overall effects, particularly their environmental effectiveness, cost effectiveness, dynamic effects, as well as "softer" organisational and behavioural effects. The GPP programmes and policies reviewed were selected primarily based on the availability of quantifiable evidence as well as on their comparative difference of approach, scope and product emphasis to capture a variety of interesting and different GPP efforts across OECD Member countries.

The range of GPP programme options and barriers to effective implementation are presented in Section 2. Evidence for the primary evaluation criteria are then presented for a selection of programmes and policies in Section 3 to provide some insight into their performance. Section 4 makes general observations about the relationship between the design and implementation of GPP programmes and policies, and their performance, and then makes recommendations on GPP best practice. Conclusions are then summarised in Section 5.

2. GPP programme and policy design considerations

GPP programmes and policies have historically been initiated by government institutions as a means to improve the environmental performance of their internal operations. As such, GPP is often viewed as one component of an environmental management system (EMS), and is implemented by the administrative arm of government departments. Given its origins, GPP efforts are often modelled

1. The views expressed in this chapter are those of the authors and do not necessarily reflect those of the Privy Council Office or the OECD.

on an EMS framework, such as EMAS or ISO 14 001, and emphasise internal environmental and cost savings goals. However, GPP is increasingly being applied as a policy instrument that can achieve multiple goals, including dynamic incentives for environmentally-preferable technological innovation.

2.1 GPP programme and policy options

An EMS framework can provide a useful management framework for GPP policies and programmes. The key elements follow a 'plan-do-check' approach, whereby senior management commitment is obtained; GPP goals and targets are identified; GPP instruments are developed and provided; and, performance is measured and reported to improve and refine the overall programme. Because of the effectiveness of the EMS approach, many GPP best practices, including those later identified in this report, incorporate these elements.

However, these elements can be applied in a myriad of ways. GPP can be mandatory or voluntary. The scope of a GPP effort can be national, regional or local in nature. Specific products can be targeted, or a broad-based approach can be taken. Purchases can be made on the basis of "lowest price", comprehensive accounting reforms, such as life cycle costing (LCC), can be adopted, or environmental externalities can be quantified. While there are a number of different types of GPP instruments that can be applied, they can be grouped into the following broad archetypes: information-based tools, training and communications tools, accounting and financial tools (including price preferences), and more direct measures such as legislation and directives. Table 2.1 provides some examples.

Table 2.1. GPP instruments and examples

Instrument Type	Examples
Information-Based Tools	Catalogues, environmental criteria, databases, questionnaires, lifecycle assessment methodologies
Training and Communication Tools	Courses for procurement officers, networks, conferences, websites, newsletters
Accounting and Financial Tools	life cycle costing or value-for-money methodologies and spreadsheets, third-party financing, methodologies to quantify external costs, price preferences
Legislation and Directives	Minimum recycled content or energy-efficiency standards

In addition to the types of instruments applied, there are a few important cross-cutting characterisations that can be made to describe a GPP programme or policy. These include characterisations on how the programme is implemented, (i.e., decentralised vs. centralised approach), and various ways greener products are defined and selected (i.e., single vs. multiple selection criteria, and technology-based vs. performance-based selection criteria).

Decentralised versus centralised implementation approaches

GPP policies or programmes can be characterised as taking either a centralised or decentralised approach to implementation. In a decentralised or "bottom-up" approach, GPP is implemented by institutions according to their specific environmental priorities and procurement processes. To provide guidance, greener products are often identified in co-operation with other institutions or by national governments; however, individual institutions have the discretion to implement GPP in the manner best suited to their needs. Conclusions as to the effectiveness of these individual initiatives are difficult to make, as much of the evidence from these initiatives is anecdotal.

The second approach is a more centralised, "top-down" approach in which very focused GPP policies or programmes are targeted at priority environmental issues or products. Often specific procurement requirements are dictated, leaving little discretion on the part of government institutions. Because of their highly focused nature, these programmes often fit within a larger environmental agenda to address a political priority. Due to factors such as their political profile, evaluations or other data is often more abundant, and their success in achieving identified objectives is more easily demonstrated.

Single versus multiple selection criteria

Another way of characterising GPP programmes or policies is on the basis of what criteria are used to define environmentally-preferable products. Greener product selection is often the greatest challenge to effective GPP programme implementation. Ideally, environmentally-preferable goods should be defined based on a comprehensive life cycle assessment (LCA) that objectively assesses the environmental effects of products and processes over their entire lifetime - from 'cradle-to-grave'. However, because a product typically has multiple environment-related attributes – such as recycled content, water- or energy-efficiency, emissions of volatile organic compounds and other pollutants – its environmental preferability depends upon the weighting applied for different factors.

LCA is a complex and resource-intensive process requiring the engagement of a diverse group of experts. Moreover, given current methodological limitations, it may be unrealistic, and possibly undesirable, that LCA serves as the sole basis for determining environmentally preferable products. From a practical perspective, LCA also places a large burden on purchasers who are usually more concerned with other factors such as price and quality.

To counter these problems, OECD Member countries have actively supported developments in the science of LCA, often through formal eco-labelling schemes (or Type I - ISO 14024), where greener products are selected on the basis of multiple criteria and are labelled to provide a clear signal to the marketplace. Eco-labelling programmes have been developed in a number of OECD Member countries. Ideally, these schemes should have built-in mechanisms to ensure transparency in the selection and establishment of product criteria through the involvement of expert groups and public reviews.

Many GPP programmes and policies place a heavy reliance on eco-labels to limit the complexity of identifying greener products (i.e., "investigation and search costs"). However, formal eco-labels are not appropriate in all circumstances as they may not be suitable for products with a short market lifetime due to the time-consuming eco-label criteria development process. Moreover, the variety of products is limited due to ceilings placed on both the number of product categories and the number of products that are usually permitted within each category (i.e. the top 10% - 30% of each product group in terms of environmental performance) (Allison and Carter 2000).

Because of these factors and industry resistance to subject itself to third-party evaluation, environmental claims by manufacturers or retailers are frequently made based on self-declarations (or Type II eco-labels - ISO 14021). However, while products may be easier to assess in this manner, self-declared claims are not formally controlled and, hence, frequently lack credibility due to occurrences of invalid or misleading claims. (See Allison and Carter 2000 for a detailed study on environmental labelling.)

For these reasons, GPP programmes and policies have traditionally applied single environmental criteria or labelling schemes (such as the American Energy Star programme). These criteria are often linked to internationally accepted environmental priorities, such as climate change and ozone depletion. While easier to define, implement and measure, single environmental criteria

have a number of limitations. For instance, they do not account for the effect that the realisation of one specific environmental objective may result in undesirable environmental impacts of another kind.

In order to address concerns associated with the application of eco-labels based upon single criteria, some countries, such as Austria and Denmark, have developed multi-environmental criteria catalogues to guide their GPP efforts.

Technology-based versus performance-based selection criteria

In defining greener products, the type of selection criteria chosen also has important consequences for technological innovation. Two different types of criteria in this regard are technology-based and performance-based criteria. Technology-based selection criteria are those that prescribe the design or composition of a product, whereas performance-based criteria prescribe specific environmental outcomes, such as energy efficiency or noise restrictions. In targeting outcomes and not means, performance-based criteria promote creativity and innovation in product design and development, while technology-based criteria typically have a much less beneficial effect on innovation. However, programmes employing performance-based selection criteria may sometimes involve greater uncertainty of outcomes. Therefore, an understanding of the tradeoffs between these different selection criteria is required in effectively designing GPP programmes or policies to achieve intended environmental and technology advancement goals.

2.2 *Barriers to effective and efficient GPP programmes and policies*

The means of overcoming barriers to effective implementation need to be factored into the design of any GPP programme or policy. While government institutions differ with respect to culture, legislative mandate and management style, many common barriers have been identified from this report and others (OECD, 1999a and 2000) that can limit the effectiveness and efficiency of GPP programmes and policies, if not addressed early on in the design phase.

Management and organisational cultural barriers

A lack of environmental data with respect to the comparative 'greenness' of products is typically considered to be one of the biggest obstacles to GPP. As already discussed, the complexity and cost of LCA encourages a single-issue approach to greener purchasing, or extensive reliance on eco-labels or energy labels to limit "investigation and search costs".

Procurement decisions are becoming more decentralised, thus involving a larger number of purchasers, who are often empowered with increased purchasing authority. This dilutes public spending power, and adds an additional burden on GPP policies and programmes to train a growing number of purchasers, and to measure GPP performance. Moreover, since procurement officers are typically not the product users, greater awareness and training efforts are needed to optimise GPP efforts.

As noted, GPP is frequently seen as one element of an EMS, and hence is typically implemented by the administrative arm of a department that rarely interacts with the policy arm. As a result of this tendency, GPP is often not perceived nor valued as a significant environmental policy instrument that could be integrated within a more comprehensive policy agenda.

Finally, GPP is a voluntary instrument that is typically seen as the 'right thing to do', and is thus not heavily scrutinised by the public. GPP tends to be low on the list of environmental policy priorities. As a result, it can be difficult to obtain and maintain senior management commitment for GPP policies and programmes. Those who design and implement GPP programmes and policies, including procurement managers and environmental officers, often have limited decision-making power, thus making senior management commitment all the more important.

Budget and financial barriers

Procurement of environmentally-preferable products is frequently impeded due to lack of resources to pay premiums for greener alternatives (Miljostyrelsen 1999). Moreover, public budgetary and financing mechanisms can be biased against greener products. One example is the common practice of procuring goods on the basis of 'lowest price' rather than life cycle costs (LCC). This favours products with low initial price over those with a higher capital cost but with lower operating costs that make them less expensive over their lifetime. Because greener products often fall into this later category, they can frequently be excluded early in the decision-making process.

Other barriers inherent in many public budgetary systems include the rigid allocation of budget credits to units within institutions and the split departmental responsibility of operating and capital costs that impede optimal solutions for the institution at large. These and other factors, coupled with the general perception that greener products are more expensive, discourage procurement officers from investigating and purchasing greener products.

Budget reforms, when they occur, can result in more efficient use of public funds, and inadvertently support GPP. Examples of such reforms include the application of LCC, medium- and long-term budget frameworks and accrual accounting. (See Johnstone, Erdlenbruch and Müller 2003 in this volume for a more detailed discussion on budget and financial issues pertaining to GPP.)

Information barriers

The general lack of environmental targets and corresponding indicators for GPP programmes and policies points to the underlining difficulties of GPP goal-setting, measurement and reporting. One important barrier to the definition of environmental targets for GPP programmes is the lack of comprehensive life cycle impact information for the large variety and number of products often included in GPP initiatives. Barriers to good data include difficulties in defining comprehensive, yet easy-to-measure indicators, as well as logistical and technical difficulties of data collection. (For a more detailed discussion on GPP indicator and data considerations, please see section 3.3.)

3. Evaluation of selected GPP programmes and policies

This section presents evidence on the impacts of selected GPP programmes and policies. The six GPP programmes or policies (from Austria, Canada, Denmark, the United Kingdom and the United States) were selected based on the availability of evaluations or other data, as well as for their differences in design and implementation to reflect the variety of GPP approaches undertaken by OECD Member countries. However, the selected programmes and policies do not represent the variety of GPP efforts in all OECD Member countries, nor, for that matter, in the countries represented. While regional representation amongst OECD member countries was sought, it was hindered largely due to lack of evaluation or other data.

The Austrian experience dates from 1990, but has been given renewed impetus in recent years. It involves legislative requirements for environmentally-sound public procurement amongst Federal agencies, including requirements for the incorporation of environmental criteria in the specifications for tendering procedures. Information on the environmental attributes of product groups such as office equipment, cleaning supplies and building materials are provided to procurement officers. The case study also draws upon the experience of local authorities and agencies (i.e. the Vienna Hospital Association, the City of Vienna) in implementing GPP initiatives.

In the case of Canada, two programmes are evaluated: the Green Power Procurement Pilot Project and the Federal Buildings Initiative. The former involved the application of price preferences in order to encourage the purchase of "green" renewable power by selected Federal departments. The latter involved the use of third-party financing to improve the energy-efficiency and water-efficiency of government buildings through the use of third-party financing and energy management firms.

In Denmark, GPP programmes have relied upon the application of the provision of information, training and communications tools. In addition to these more general measures, life-cycle environmental accounting is being integrated into the procurement services provided by the main procurement agency to government institutions. Subsidies are provided in some cases to encourage take-up. The programme covers 11 broad product categories (approximately 50 product groups in total).

In an effort to incorporate environmental criteria in procurement decisions, the United Kingdom government has developed information-based tools (particularly the *Green Guide for Buyers*). In addition, efforts are being made to integrate environmental characteristics through the use of "whole life costing" (effectively LCC) through the government's commitment to "value for money" in procurement decisions. This includes environmentally-relevant factors such as future disposal costs, lifecycle operating costs, etc…

The United States has sought to introduce GPP through the use of Presidential Executive Orders. One example (Energy Star) prescribes energy efficiency standards for computer equipment purchased by Federal agencies. This has been expanded to include all features of energy management. These programmes are supported by a variety of information-based, communications, training and accounting tools.

In terms of implementation, a decentralised implementation approach has been applied by Austria, the United Kingdom, and to a lesser extent Denmark (due to the central GPP policy requirement, but decentralised implementation approach). They also encompass a broad array of environmentally preferable products often applying a multi-criteria, or LCA approach. The examples selected from Canada and the United States reflect more centralised approaches for targeted products and apply single criteria (i.e., GHG emission reductions).

In addition to the differences in degree of centralisation and number of applied criteria, these examples also reflect differences with respect to legal requirements (i.e., mandatory vs. voluntary), degree of scope (national, provincial/state, local), instruments applied (information-based tools, financial tools, etc…) and product types (i.e., cleaning supplies, recycled paper, green power, energy efficient equipment, organic food), again to provide greater insights. (Table 2.2 provides a summary of the main characteristics of the programmes. For a more detailed summary please refer to Annex 2.1.)

Table 2.2. Key Characteristics of GPP Programmes and Policies Reviewed

	Products or Product Categories	Responsible Level of Government	Key Implementation Instruments	Identified Targets	Responsibility for Implementation
Austria	Broad range, depending on initiative. Case studies involved: cleaning supplies, paper, building materials, furniture, organically-grown foods.	National initiative, then applied to state and local authorities.	Information-based tools: information centre providing advice, guidelines, environmental criteria catalogue Financial tools: Price preferences for certain products (i.e. organically grown foods).	No national targets identified, left to individual institutions. By 2005, all public facilities, (particularly hospitals, schools, daycare centres, old-age homes & nursing homes) to increase share of organically grown food to 30%.	Decentralised and broad – affecting all national institutions. Affects a large number of procurement decision-makers.
Canada (Green Power)	Specific focus on "green" renewable power.	National then provincial and local authorities.	Financial tools: procurement commitment with targeted supplier, provision of subsidies for 10 years, life-cycle analysis of key environmental and market variables.	100% green power for Natural Resources Canada and Environment Canada buildings in Alberta by 1998.	Centralised approach focused on two departments, along with procurement department. Affects a small number of procurement decision-makers.
Canada (FBI)	Specific focus on energy and water efficient building systems and components.	National initiative, then promoted by provincial and local authorities.	Information-based tools: website Training and communications tools: training, promotions, demonstration projects Financing tools: third-party financing of capital projects.	No specific procurement targets.	Centralised financeing structure, but decentralised implementation amongst Federal departments with significant custodial responsibilities. Affects a moderate number of procurement decision-makers.
Denmark	Broad range, including computer and office equipment, paint, transport, cleaning agents, furniture, paper	National initiative, promoted to states, counties and local authorities.	Information-based tools: environmental guidelines, checklists, website; Training and communications tools: training, coordination committees Financial tools: subsidies are granted to qualifying projects	Environmental procurement policy and action plan by February 1996. Targets at the discretion of individual institutions	Decentralised across all national institutions. Affects a large number of procurement decision-makers

Table 2.2. Key Characteristics of GPP Programmes and Policies Reviewed (continued)

	Products or Product Categories	Responsible Level of Government	Key Implementation Instruments	Identified Targets	Responsibility for Implementation
United Kingdom	Broad range at national level, but specific focus at departmental level. (Case study focuses on paper.)	National initiative	Information-based tools: Green Buyers Guide, model policy and improvement programme framework. Training and communications tools: extensive website fact sheets. Financial tools: Investment appraisal based upon value-for-money, including environmentally-relevant criteria.	No national targets, Some departmental targets. 100% recycled paper (DEFRA, Environment Agency). 100% recycled paper for publications (DTI).	Decentralised, across all central government departments. Affects a small number of procurement decision-makers involved in bulk purchases
US (Energy Star)	Specific focus on computer equipment, then other energy-related products	National initiative, then promoted to state and local authorities	Information-based tools: environmental criteria database, integration in nat'l procurement catalogues. Training and communications tools: pilot projects, scorecard reporting, interagency committees, partnerships with suppliers. Financial tools: Life-cycle cost financial analysis requirement in purchasing decisions.	100% Energy Star procurement for personal computers, monitors and printers for all National agencies 30% reduction in GHG emissions from facility energy use by 2010 compared to 1990 emissions levels.	Decentralised, across all national institutions. Affects a large number of procurement decision-makers

The review uses the policy assessment criteria as set out in OECD (1996a), with particular attention being paid to the following criteria:

- *environmental effectiveness* which relates to the environmental impact and performance of the GPP programme or policy, i.e., to what extent the GPP programme or policy meets stated environmental objectives (if defined), or reduces negative environmental impacts (if no specific objective is defined);

- *cost effectiveness* which refers to the extent to which the GPP programme or policy realises stated environmental objectives at minimum cost;

- *dynamic incentives* which refer to the extent to which the GPP programme or policy provides incentives for the development and diffusion of environmentally preferable products and processes; and,

- *soft effects* which refer to changes in awareness and attitudes, such as leadership, credibility and signals to the marketplace. Because soft effects are difficult to quantify, they are discussed in more general terms.

Empirical evidence, in the form of evaluations and other data, was obtained directly from Member countries as well as from website and literature research. The presented data does not attempt to provide a comprehensive summary of all evidence for these GPP programmes and policies.

Moreover, the available information was not sufficiently detailed and rigorous to allow for a 'formal' evaluation based on these criteria. As a result, much of the presented evidence that relies on 'soft' data, such as projections, estimates, surveys on programme implementation, as well as "incidental observations" and "observation-driven intuitions" (OECD 1994), which limit the extent to which direct comparisons and conclusions can be made. The paper will now review the main criteria, and, for each, present evidence and observations regarding the impacts of each of the six selected GPP programmes and policies.

3.1 Environmental effectiveness

Environmental effectiveness is, of course, the key evaluation criterion for GPP programmes and policies, given that their main purpose is to encourage more sustainable consumption, and reduce negative environmental impacts. Ideally, an assessment of environmental effectiveness of GPP programmes and policies should be based on an assessment of the full life-cycle impacts to ensure that there are not any unintended negative environmental impacts resulting from the procurement decision. Given the complexity of conducting a LCA, available data of this type is very limited.

A less preferable, but more feasible option is to assess the environmental effectiveness of GPP based on the achievement of defined environmental objectives. Where objectives are not defined, a not infrequent occurrence, evidence can also be based on single environmental criteria such as the impact on polluting emissions, measured in physical units (such as reduction of a defined number of tonnes of pollutant emitted). Data of this sort was available for Austria, Canada, and the U.S. In some cases, the economic value of such impacts can then be estimated. Data of this type was identified for Canada, in the case of the Green Power programme.

Many of the selected GPP programmes and polices were successful, either by achieving stated GPP targets (Austria, Canada – Green Power) or by realising some positive environmental impacts based on targeted environmental criteria (Canada – FBI, U.S). However, conclusions with respect to their overall environmental effectiveness cannot be made given their emphasis on a single or narrow set of environmental criteria, which can inadvertently result in negative environmental impacts elsewhere. For example, efficient energy use based on increased insulation may generate problems in the waste phase (i.e., contamination of other materials, emissions from incinerators, etc.) (See Cinq-Mars and Pesso, 1998).

Other programmes or policies, such as those from Austria and Denmark, that emphasised multi-criteria and multi-product GPP approaches were generally unable to provide any substantive data as to their environmental effectiveness. Even GPP implementation data, such as the total value of greener purchases, was not available. Therefore, it is not possible to ascertain if desired programme goals have been met, or to make any conclusions as their environmental effectiveness.

The general lack of environmental data to assess GPP is alarming, particularly since these programmes and policies are 'advanced' compared to those not selected for this review. This lack of concrete data could very well jeopardise the credibility of GPP in the future if efforts are not made to measure and demonstrate their environmental effectiveness. (A detailed discussion on data availability and lack of performance evaluations is provided in section 4.3.)

Austria

While data at a national level was not available to provide any insights into the environmental effectiveness of Austria's larger GPP efforts, a few anecdotal reports from smaller GPP programmes in local governments indicate that some success has been achieved, based largely on

single environmental criteria. For example, the Vienna Hospital Association has almost eliminated the procurement of PVC products, as individual hospitals are approaching their zero-PVC targets (Klausbruckner 2001). It has, therefore, met its stated objectives. However, it is not possible to determine the environmental effectiveness of this programme overall, as reductions in PVC-based products may have led to use of other, possibly more harmful, substances.

With respect to its cleaning product initiative, the Vienna Hospital Association's ban of environmentally harmful substances reduced the number of cleaning agents purchased by three-quarters, from 175 to 42. Because a LCA was used to select the cleaning agents, it is likely that the programme was environmentally effective; however, no data exists to estimate the relative importance of these effects.

The success the Vienna Hospital Association experienced in achieving identified GPP goals can be attributed, in part, to strategic partnerships that fostered shared approaches and learning across hospitals. Moreover, GPP efforts were also bolstered by the City of Vienna's broader environmental agenda that included PVC reduction targets, support for the application of EMS, and other environmental initiatives as part of its Local Agenda 21 programme. This suggests that larger politically-driven environmental agenda's can serve to strengthen and add credibility to GPP policies and programmes, including in local governments.

Canada - Green Power Purchasing

The Government of Canada's Green Power Purchasing effort was successful, on a small scale, in realising GHG and other emissions reductions. The Alberta Green Power purchase agreement of 12 GWh resulted in an estimated annual CO2 emissions reduction of 11 000 tonnes. This purchase is very small – representing approximately 3% of Federal high-carbon electricity purchases that could be displaced annually in favour of green power[2], or less than 1% of total annual government electricity purchases (NRCan 2000b). Although the original purchase decision was based on the reduction of other air pollutants, such as nitrogen oxides, sulphur dioxide and heavy metals emissions, these emissions reductions have not been quantified.

Projected Federal GHG emission reductions resulting from the 2000 Saskatchewan procurement agreement are 20,000 tonnes annually or roughly 50% of electricity-related Federal emissions in that province. The Federal purchase of 13 MWh of green power in Prince Edward Island is expected to achieve an annual GHG emission reduction of 11,000 tonnes (NRCan 2000a). These two purchase commitments will represent a diversion of approximately 5% and 3% from Federal high-carbon electricity purchases that could be annually displaced by green power. Finally, the Government of Canada's commitment to purchase 20% of its total Federal electricity requirements from green power sources (or an additional 400 GWh) is expected to achieve an additional reduction of 250 kilotonnes of GHG emissions annually starting in 2006. Total green power purchases by the Federal government will therefore represent a significant contribution in helping the Government of Canada realise its commitment to reduce GHG emissions from internal operations by 31%

---

2. There is a limit in the application of green power purchasing for Canadian Federal operations. Approximately 20 % of the electricity purchased by the Federal government for its operations is from high-carbon sources. As a result, it is estimated that a maximum of 400 to 500 GWh - approximately 14% of electricity purchased for Federal government operations - of these high-carbon electricity purchases could be annually displaced in favour of green power. (No.7 - November 27, 2000, Federal Purchases of Electricity from Emerging Renewable Sources Under Action Plan 2000).

These projects have also fostered market take-up green power in their respective provinces, which in turn has resulted in additional GHG emission reductions. (The potential importance of these impacts is discussed in greater detail in the section on dynamic incentives.)

Success in undertaking these green power purchases was due in large part to the inclusion of environmental and other externalities into the original economic analysis. In addition, the project benefited from senior management support, given that it focused on a departmental priority (fostering the growth of renewable energy projects) and reduced GHG emissions resulting from Federal government operations.

Canada - Federal Buildings Initiative

Canada's Federal Buildings Initiative (FBI) has led to a significant reduction of GHG emissions in targeted Federal government buildings, and, as such, has succeeded in achieving its environmental goals related to reductions in GHG and other emissions, as well as in water consumption.

In 1999-2000, NRCan's Audit and Evaluation Branch conducted a programme evaluation study of the FBI (NRCan 2000a) and ascertained some of its environmental and economic impacts – the only evaluation of its kind found for the purposes of this review. The evaluation determined that to date the FBI has achieved a total energy savings of approximately 2,613 terajoules, resulting in GHG emission reductions of approximately 145,000 tonnes. This is less than 1% of total Federal government energy-related emissions from the 53 projects from 1991-2000. However, on a project basis, the results are more significant as the average FBI project realises an estimated energy reduction of 25% and GHG emission reduction of 20%.

The evaluation also projected the energy savings impacts of these completed projects up to 2012 to assess the programme's impact in relation to Kyoto targets. Projected energy savings are 15,964 terajoules from 1991-2012, resulting in a projected CO_2 emission reduction of 884,000 tonnes, or about 2% of total Federal energy-related emissions.

The question of incrementality – i.e. the extent to which departments would have identified and implemented energy management projects in the absence of the FBI – was also assessed. The evaluation estimated that the overall incrementality of the FBI programme is approximately 75%[3], thus making the incremental effect of the FBI in terms of CO_2 emissions reductions even smaller - roughly 121,000 tonnes from 1991-2000, and 675,000 tonnes from 1991-2012.

3. 35% of respondents indicated that their departments would not have done the project if the FBI had not existed (full incrementality); 19% said they would have proceeded with the projects in any event (nil incrementality); and 46% felt they would have conducted the projects without the FBI, but more slowly or with a more restricted scope (partial incrementality of time or scale).

Table 2.3. Principal Achievements of the FBI Programme

Time Period	Total Estimated Energy Savings (terajoules)	Total Estimated Reduction in CO2 equivalent Emissions (tonnes)	Percent of total Energy-related Emissions from Federal Buildings	Estimated Energy Savings due to FBI (terajoules)	Estimated Reduction in CO2 Equivalent Emissions due to FBI (tonnes)
1991 – 2000	2,613	144,737	0.6%	2,183	120,913
1991 – 2012 (Projection)	15,964	884,246	2%	12,204	675,979

In addition to these small but significant reductions in Federal government emissions, the FBI has also been adopted or imitated by provincial or municipal governments. This take-up of EMF services by other public authorities has resulted in additional energy savings and GHG emission reductions. (Please refer to the section on dynamic incentive for a more detailed discussion on these impacts.)

It appears that third party financing by the private sector was a key success factor that enabled Federal government departments to overcome obstacles in accessing capital to undertake expensive energy efficiency building retrofits. The direct operational cost savings and limited risk on the part of departments also encouraged broader Federal government take-up of the FBI programme.

Denmark

While conclusions with respect to the environmental effectiveness of Denmark's GPP efforts are not possible due to the absence of relevant data, a survey assessing the national status of GPP policies and action plans does provide some insights into GPP implementation.

The survey (Honoré 2001) found that despite requirements for GPP policies in public institutions, there was a low level of awareness of these policies. Approximately 50% of central government institutions reported to have a greener procurement policy, when in actuality 90% of these same institutions had previously submitted a GPP policy to the Danish E.P.A. In effect, the institutions had forgotten their own greener procurement policies. Information with respect to actual greener purchases by public institutions was anecdotal. For example, the largest institutions reported that 20% – 40% of their purchases were environmentally-friendly; however, this could not be substantiated.

Implementation efforts were mixed. A minority of institutions was in the process of preparing action plans, and fewer than half had appointed a coordinator for the greener procurement policy. It was also found that public institutions base their selection of GPP products primarily on recognised energy and eco-labels, and secondly on supplier information. Very few entities had environmental experts to assist in product-selection. This would suggest that public institutions are looking for proxies, such as eco-labelling schemes, to simplify complex LCA analysis.

These survey findings suggest that although mandatory GPP policy development is effective in establishing much needed GPP policies, additional efforts, such as targeted awareness, training and reporting requirements, are also necessary to ensure effective and on-going implementation of these same policies.

United Kingdom

In the application of GPP in the United Kingdom, there is a general lack of target setting, data collection and reporting by central government departments precluding any conclusions as to environmental effectiveness (UK Green Ministers 1999).

The narrow set of data on government recycled paper purchasing efforts suggest limited GPP success to date. A VFM study on procurement of recycled copier paper found that there was limited use of recycled paper in central government departments (UK Buying Agency 2000). Apart from a few large departments, most had not implemented recycled paper strategies. Of the three identified departments with the specific procurement target of 100% recycled paper, the study found that success varied: one purchased approximately 95% recycled paper, another purchased approximately 60%, and the third was unable to report its progress. Poor data on recycled paper usage within the central government was attributed to logistical complexities, in that paper is purchased by a number of purchasers in a variety of ways (i.e., through merchants, wholesalers and distributors, or through competitively tendered or locally negotiated contracts).

Because the net environmental impacts (such as water and energy consumption) of these recycled paper purchases were not evaluated nor quantified, no conclusions as to environmental effectiveness can be made. It is surprising to note that a LCA was not undertaken to assess the full environmental implications of purchasing recycled paper, particularly given that a government-wide initiative is now underway to increase central government procurement of recycled paper.

United States

In the American Energy Star programme, limited evidence (i.e., anecdotal information and rough estimates based upon Federal government purchasing power) suggests that GHG reductions resulting from public Energy Star procurement may be significant; however it is impossible to speculate on the precise degree to which this has been the case.

Nonetheless, available data points to the emissions reductions benefits of Energy Star procurement. For example, the Commonwealth of Massachusetts[4] calculated that its purchase of 1085 large and medium photocopiers resulted in an energy savings of approximately 300,000 KWh and achieved reductions of 270 tonnes of CO_2 emissions, 292 tonnes of NO_x emissions and 718 lbs of SO_2. Penetration of Energy Star computer equipment within public institutions also appears to be high. A 1999 study of the City of San Francisco found that 90% of monitors, over 70% of computers and copiers, and 40% of printers and fax machines were Energy Star compliant (Picklum et al 1999).

However, penetration of Energy Star computer equipment alone does not guarantee energy savings and resulting emissions reductions, as correct use is also essential. For example, of the Energy Star equipment purchased by the city of San Francisco, only 40% of its computers, 55% of monitors and 70% of printers were properly configured. Nationally, it is estimated that only 50% of computers and 70% of monitors have their power management properly enabled in the U.S. (Brown 2000). This enabling problem is often attributed to equipment that was disabled before or after delivery, underscoring the need for awareness and possible training on the correct use of Energy Star products.

National procurement of the full range of Energy Star products is estimated to have reduced total U.S. energy needs by more than 200 billion kilowatt (kWh) hours since 1995, with a peak of 75

4. CO_2 reductions resulting from Energy Star, Office Equipment Savings Calculation. Commonwealth of Massachusetts. Draft Data 2001

billion kilowatt hours in 2000 which translates into an estimated carbon reduction of 9 million tonnes (Energy Star website). Procurement and effective power management of Energy Star office equipment is estimated to have achieved an annual national energy savings of 23 TWh or 24% from baseline levels (Kawamoto et al 2000).

Forecasts on the energy and CO_2 savings potential of increased energy-efficiency of Federal procurement speak to the significant untapped potential of public procurement. It has been estimated that reductions were between 2.7 and 6.8 trillion Btu/year, representing 2% of energy consumption in Federal buildings (Harris et al 2000).

Although difficult to define the precise extent of success that the government has experienced due to Energy Star procurement, it is clear that the Executive Order requiring Federal Energy Star procurement was crucial in creating awareness and in the development of markets for energy-efficient office equipment. Moreover, extensive promotion efforts to all government levels, tools to demonstrate cost and GHG emission savings, and integration within government procurement catalogues, appear to also have been effective in promoting Energy Star procurement.

3.2 Cost effectiveness

The analysis of the efficiency of selected GPP programmes and policies is limited to a discussion on the direct financial costs associated with the realisation of stated environmental objectives. A discussion of the much broader question of whether or not the programmes are economically efficient is not included as an assessment of key issues.[5]

The direct financial costs of a GPP policy or programme include the cost of any premium paid for greener goods by government institutions, as well as the administration costs for the implementation of the programmes and policies. Government institutions can experience countervailing cost savings through a number of ways, including a lower demand for energy, water and materials, an abandonment or reduced use of certain products and services, or reduced disposal fees.

Unfortunately, the lack of data for the GPP programmes and policies reviewed limits the possibility of drawing firm conclusions as to their cost effectiveness. Programmes that targeted single products, or single environmental criteria, tended to have more cost data, while data was generally non-existent for those programmes involving multiple product categories. This is probably due to data collection difficulties, as a result of the sheer number of product and procurement interactions.

Many of the GPP policies and programmes selected resulted in direct financial cost savings, or some other broadly defined economic benefit. Indeed, a few of the selected GPP programmes and policies (Canada – FBI, and U.S. Energy Star) were designed to identify and implement apparent 'win-win' strategies whereby GPP led to both environmental improvements (defined by the single energy efficiency criteria) and cost savings.

GPP programmes that emphasised the efficient or effective use of greener products (Austria, U.S.) also appeared to generate some cost savings, though quantities are nominal or not measured. While self-evident and applicable to sound procurement practices generally, these savings underline

---

5. Such a discussion would necessitate an evaluation of the extent to which the programme reduces environmental damages at minimum cost. However, since GPP programmes only target a subset of the sources of damage (i.e. public sector sources), such an evaluation is beyond the scope of this report.

the importance of comprehensive awareness and training efforts to promote the proper use of greener products.

Cost effectiveness was also achieved through improvements to accounting and financial practices. The U.K.'s VFM approach, which introduces "whole life costs" (including investment, use, maintenance and disposal costs) as well as product quality and market implications, not only results in more efficient use of public funds, but in the case presented, also fostered environmentally preferable purchasing.

Some of the other selected GPP programmes and policies are more controversial in that they resulted in increased government outlays to pay for premium priced greener products. In one case (Canada – Green Power), the inclusion of environmental and other externalities justified a price premium. In another case (Austria – organically grown food), public institutions committed to pay a price premium on the basis of environmental and health benefits - however, these benefits were not defined through a cost-benefit analysis, but rather appear to have been intuitively inferred. It is clear that in both instances, senior management commitment to GPP was a key factor in justifying the purchase of these premium-priced greener products. However, given data limitations, the cost effectiveness of these more controversial GPP programmes and policies, cannot be measured.

Finally, data with respect to the administration costs of GPP policies and programmes was limited, preventing any conclusions as to the efficient implementation of the GPP programmes or policies themselves. This points to the need for better reporting and accounting systems to measure both the economic effectiveness and cost implications of GPP policies and programmes.

Austria

Anecdotal evidence suggests that some GPP programmes at a local level have achieved small cost savings in specific product categories; however, these costs savings were largely achieved through more efficient use of greener products. For example, Wiener Neustadt's efforts to purchase environmentally preferable cleaning products and to reduce their excess through targeted training of cleaning staff resulted in a savings of 500 000 ATS (or $33,000 USD) or one-third of this budget item (EU-LIFE 2000).

Other examples point to the incremental costs of GPP programmes. The Vienna Hospital Association's assessment on the incremental cost of organic food found that the achievement of its 30% of organic food target by 2005 would result in a food cost increase of approximately 17% (Klausbruckner 2001). No effort was made to quantify the financial benefits from improved health (and thus reduced public health services expenditures) and other associated effects.

Canada - Green Power Purchasing

In an effort to assess the Green Power Purchasing programme on economic grounds, Acres (1998) analysed the net environmental benefit of green power, the value of green power as a hedge against future prices increases, and the benefit from stimulation of the market for green power and applied the following formula to evaluate the "maximum" premium which could be economically justified:

Economic Price of Green Power < or =

Price of Replaced Conventional Power + Net Environmental Benefit + Hedge Value.

Given that energy sources (and hence, the net environmental benefits) varied across Canadian provinces, the study assessed the externalities on a province-by-province basis. (Alberta, Nova Scotia, Prince Edward Island and Saskatchewan have the most carbon-intensive electricity in Canada.)

It was estimated that a maximum "economic" price of green power could be as much as three times the cost of displaced traditional power. This premium was justified largely on the basis of reduced impacts from N_2O, SO_2, NO_x, methane, particulate matter and CO_2 with a range from 1 cent to almost 4.5 cents CDN per kWh. While the value of the hedge should not be dismissed (between 0 and 0.6 cents / kWh), it is clear that the primary justification in paying the price premium for green power was made in large part on the basis of the reduced environmental externalities. Moreover, it is not clear that such a programme is an efficient means of "hedging" against potential future increases in the price of fossil fuels.

While no assessment has been made of the costs of these benefits relative to those that would have arisen through other policy measures, under the Government's assumptions the net impacts of the programme could be deemed to be positive. Nonetheless, the net cost outlay was significant. The price premium of total green power purchases has been roughly $19 million CDN (or $12.3 million USD) over 10 years. This includes the original Alberta purchase, involving a premium of approximately $2 million CDN (or $1.3 million USD); the 2000 Saskatchewan green power agreement entailing a total premium of $12.4 million CDN (or $8 million USD); and the Prince Edward Island agreement which will result in a total premium of $4.5 million CDN (or $3 million USD). Moreover, the implementation of the Government of Canada's commitment to purchase 20% of its total Federal electricity requirements from green power sources by 2006 will involve an additional investment of $30 million CDN (or $19.4 million USD) (Government of Canada 2000a).

Canada - Federal Buildings Initiative

The Federal Buildings Initiative has been cost effective, resulting in a relatively small net savings for Federal government departments. Through the FBI, Federal government departments secured a private-sector investment of $143 million (or $92 million USD) and realised an annual operating savings of $20 million per year (based on constant 1999-00 CDN dollars) (or $13 million USD) for the 53 projects. The evaluation estimated that the net present value of Federal government energy savings (meaning savings net of capital costs, programme costs and any increased operating costs) from the FBI is roughly $97,000 CDN (or $63,000 USD) from 1991-2000.

The total projected savings from 1991-2012 are expected to be $38 million CDN (or $25 million USD) (NRCan 2000a). The relatively small net present savings from 1991-2000, compared to 1991-2012 figures, is due to the fact that many of the assessed projects are presently in the payback phase, and so the cost savings currently accruing to the government are not significantly larger than programme costs. However, these findings would appear to support policy analysis that suggests that the real cost savings from such energy efficiency efforts are often less than originally projected (see Joskow and Marron, 1993 and Marron 2003).

According to the evaluation, 76% of respondents indicated that the FBI had either completely or partially removed the major barriers to energy efficiency retrofitting. Capital financing arrangements through ESCO experts seems to have been the major factor in the programme's success in removing identified barriers, namely, the shortage of capital funds (68%), lack of incentives (46%), and lack of expertise (29%). To the extent that at least some of these barriers were indicative of "organisational failures" within the public sector, the FBI may have been cost effective.

However, the evaluation also pointed out that the "primary" barrier to the programme's success, namely a "lack of priority", remained. The relatively small economic cost savings resulting from the FBI programme would appear to be an important explanation as to why the FBI is not a high priority among senior managers.

Another challenge of the FBI is that it is designed for projects that are sufficiently large and have substantial energy-savings potential to attract EMF's. Over time, it is likely to become more difficult to attract EMF's for the smaller and hence, less economically advantageous projects, thus underscoring that such private sector partnerships are most applicable to large-scale projects.

Denmark

Despite its legislative mandate, data limitations of Danish GPP initiatives preclude any conclusions as to their cost effectiveness. In particular, the use of subsidies to support GPP initiatives has not been assessed. However, the figures are quite small (less than $150,000 USD).

United Kingdom

Given that the United Kingdom's efforts to "green" public procurement is integrated within the more general objective of encouraging "value for money", the cost effectiveness of the programme is a stated objective. Although lack of data precludes any firm conclusions on cost effectiveness, the previously mentioned study on recycled paper presents some insights into the U.K.'s VFM approach.

The study recommended central government procurement of recycled paper on both environmental and economic grounds, and made several recommendations, including a government-wide contract for recycled paper, to obtain the lowest possible price (UK Buying Agency 2000). The analysis focused largely on the price of recycled paper, finding a wide variation in the premium (2% to 45%) paid by central government departments, when at the same time, a major inter-departmental contract was successful in obtaining the paper at a price less than primary. While this finding speaks more to inefficient public spending due to a lack departmental coordination, it does underline the need to co-ordinate GPP in secure competitive prices for environmentally-preferable products.

In addition to price considerations, the study also assessed the quality and performance of recycled paper compared to virgin paper, as well as the potential for market distortions (on price and supply) resulting from increased recycled paper demand. It concluded that departments would need to update and strengthen their waste paper recycling collection efforts. However, these and other whole-life costs, such as operating, administration costs or training costs, were not assessed in the study. This suggests that the application of the principle of VFM is not a simple undertaking and may require additional resources (for training and data collection) to be effectively implemented.

United States

Anecdotal and other evidence suggests that the American Energy Star procurement has been cost effective for U.S. governments; however, the amount or significance of reported cost savings is not known due to the lack of data.

On a Federal level, it is estimated that building energy expenses decreased by approximately $900 million USD (FEMP website) due to energy management, of which Energy Star procurement is but one element. Anecdotal evidence from the Commonwealth of Massachusetts speaks to the direct

cost savings of Energy Star procurement as it saves approximately $25,000 USD annually from its purchase of over 1000 Energy Star photocopiers[6].

On a national level, the U.S. E.P.A. estimates that Energy Star purchases are estimated to provide a national net savings of more than $4 billion each year (US EPA, Energy Star 2001). Though it is not possible to attribute all of these cost savings to Federal Energy Star procurement, it does point to the opportunity for significant cost-savings by those public institutions that make Energy Star purchases.

The overall success of the Energy Star programme relates largely to the effective market penetration of Energy Star in key product groups, such as computer equipment, and the very cost-saving nature of Energy Star products themselves. These improvements in energy efficiency and cost-savings are heavily promoted to Federal and other government levels through information-based and financial tools, such as cost calculators, that enable government departments to assess their energy and cost savings potential. The directive in the Executive Order to apply LCC to Federal procurement decisions appears to have been another contributor to advancing procurement of Energy Star products, particularly those related to buildings.

3.3 Dynamic effects

Dynamic effects refer to the extent to which GPP provides an incentive for the development and diffusion of environmentally preferable products and technologies - an intended outcome of many GPP programmes and policies. GPP programmes and policies have the potential to impact different stages of environmentally preferable product innovation: invention, commercialisation and diffusion (Marron 2003).

It is difficult to clearly assess dynamic incentives of GPP policies and programmes due not only to data limitations, but also to the sheer complexity of separating GPP impacts from those of other policy instruments and general market trends. However, some observations are possible based on anecdotal observations and industry trends.

Observations as to the dynamic incentives of the selected GPP policies and programmes are mixed. Some of the selected GPP programmes (U.S. Energy Star, Canada Green Power, and Canada FBI) have created strong dynamic incentives, not only for the invention and commercialisation of greener products, but also for their diffusion in the broader marketplace. Conditions that appear to be critical in creating these incentives include a strong and consistent market signal, large purchasing power, a targeted product focus, and early and sustained engagement with the private sector.

It is difficult, if not impossible, to draw any conclusions regarding the dynamic incentives of the other selected programmes and policies (Austria, Denmark, U.K.). Anecdotal evidence and the very nature of many of these efforts (i.e., decentralised, involving many products and suppliers) suggest that there may not be sufficiently strong market signals nor purchasing power to create sufficient incentives for the development and diffusion of environmentally preferable products.

As such, governments need to better coordinate their GPP efforts (i.e., create concentrated buyer groups) or embed them within more comprehensive policy agendas designed to achieve specific greener product development or diffusion goals. One such example is 'co-operative procurement' where specific technology advancement goals are identified and then encouraged

---

6. Estimate from Commonwealth of Massachusetts. (2001) "CO_2 reductions resulting from Energy Star: Office Equipment Savings Calculation" Draft data.

through targeted purchasing power. One technical procurement study conducted by the International Energy Agency (IEA) with the Swedish NUTEK combined advanced technology criteria, with concentrated purchasing power. It resulted in technical energy efficiency improvements such as a 33% energy reduction for refrigerator/freezers, and 70% energy consumption abatement for clothes washers and dryers (Westling 2000).

Austria

Observations cannot be made about the dynamic incentives of GPP programmes and policies in Austria due to the absence of data.

Canada- Green Power Programme

Canadian Federal government procurement of green power purchase was a key catalyst for the commercialisation of green power infrastructure in Alberta, and other affected provinces. Although the benefit from the stimulation of the market for green power was analysed by the Government, it was not quantified. One study (Acres International 1998) assessed that a systematic Federal green power purchase programme could benefit the Canadian renewable energy industry by stimulating the green power market. It was also assessed that Federal leadership could result in cost reductions for other buyers, thus encouraging other consumers to purchase green power.

Prior to the first procurement agreement in Alberta, green power infrastructure on a commercial and residential scale was non-existent in Canada. Following the Federal purchase agreement, Enmax launched its Greenmax brand green power marketing programme in 1998, making Calgary the first Canadian municipality that offered wind-generated electricity at a premium to residential customers. Enmax has subsequently increased its generating capacity for green power by 16 times to supply green power to other customers.

Market take-up of green power is small, but growing among provincial, municipal and private institutions. As one example, the Calgary Public Transit Authority in August 2001 committed to its "Ride the Wind" light rail transit programme, which will make it the first public transportation system in North America to be 100% wind-powered (The Globe and Mail 2001). This ten-year contract with Enmax will reduce CO2 emissions by 26,000 tonnes annually, and will help to provide greater demand for an industry that is still in its infancy. These green power purchases appear to be linked to the benefits of environmental leadership as the residential market appears unwilling to pay even a small price premium: less than 1% of Enmax's residential customers pay the $5 – 15 dollar CDN (or $3 - 10 USD) monthly premium for green power[7].

Early effects from the Federal agreements in Saskatchewan and Prince Edward Island suggest that there will be similar spillover effects among public and private sector institutions. For example, both the Saskatchewan Provincial government and SaskPower, a private electricity utility, have already committed to purchase wind power (StarPhoenix 2001). SaskPower will purchase green power for its head office, at a premium of $2.6 million CDN (or $1.7 million USD) over 10 years, and, while the Provincial government has committed to buying $5 million CDN (or $3.2 USD) of wind power (SaskPower 2001).

Several factors appear to have supported the commercialisation and diffusion of green power. Commercialisation was encouraged by the early engagement of the power utilities and green

7. Discussion with Theresa Howland, ENMAX Energy Corporation.

power suppliers, and by the two 10-year procurement commitments that provided sufficient assurances over the medium-term to encourage risk-taking by the utility. Market diffusion was encouraged by Canada's Climate Change Table process that identified green power as a suitable mechanism for Federal, provincial and municipal governments to reduce GHG emissions. Finally, the recent deregulation of the electricity industry in Alberta, resulting in sharp price increases for conventional electricity, also made the price of green power comparably more competitive.

The success of the Federal government's pilot project in green power procurement has led to the government-wide initiative resulting in the Government of Canada 20% green power commitment – an important success. Canada has largely taken a public procurement approach to foster growth in Canada's green power industry. The resulting impacts, while positive, remain small in scale, particularly in relation to policies which target all purchasers, and not just the public sector. For example, the United States' Production Tax Credit made green power a less expensive alternative to coal, while other countries, such as Australia and the Netherlands, have mandated the incorporation of green power into their national energy supply through a renewable energy portfolio standard. These fiscal and legislative instruments would appear on the surface to have achieved greater market penetration of green power, and correspondingly greater environmental benefits, compared to Canada's GPP approach.

However, the choice of policy instruments is dependent on political and legislative environments. For example, in Canada, the Federal government is not able to impose a renewable energy portfolio standard as this falls under provincial jurisdiction. Given its voluntary nature, GPP was possibly a more feasible mechanism for the Federal government to promote green power in Canada in the short term.

Canada - Federal Buildings Initiative

The dynamic effects of Canada's Federal Buildings Initiative in terms of market development appears to have been pronounced. In particular, the programme has been very successful in helping to consolidate and strengthen the energy efficiency services industry in Canada. The FBI was the first formal government programme of its type in Canada, and as such, helped to encourage the formation of formal EMFs, capable of providing a comprehensive set of services and expertise to meet all FBI requirements. To this end, NRCan acted as a 'broker' to foster partnerships between firms with different specialities to assist them in meeting FBI requirements when it first established the list of pre-qualified energy efficiency service firms.

Presently, approximately 13 larger engineering firms provide energy efficiency services in Canada. A review of the Canadian Energy Performance Contracting Industry (Anshan and Levy 1999) demonstrates that there has been strong market take-up of EMF services by provincial and municipal governments, as well as by universities/colleges, hospitals, nursing homes, hotels and office buildings. The industry has experienced strong initial growth of over 60% between 1990 and 1994, which then slowed and levelled off in 1997, when the dollar value of total contracts signed was $213 million CDN. In the same year, market demand was dominated by schools which represented 20% of total market demand, followed by the Federal and municipal governments, each representing 18% of total market demand.

The City of Toronto's Better Buildings Partnership (BBP) energy efficiency retrofit and building renewal programme, launched in 1996, was modelled after the FBI. BBP projects undertaken to date on 155 public and private sector buildings represent a total value of $100 million CDN (or $65 million USD), and have resulted in an annual operating cost savings of over $6 million, an annual reduction of CO2 emissions by 72,000 tonnes, and the creation of approximately 3,000 jobs. The current CO2 emission reduction represents 4.1% of the former City of Toronto's 20% GHG emission reduction

target. It is felt that the BBP, in co-operation with the building marketplace, has the capacity and momentum to significantly increase the amount of retrofits implemented by 400-800%, and could potentially achieve over 3 million tonnes of CO2 reductions. Other provinces and cities are undertaking similar programs (see: www.torontobbp.on.ca and www.greenbuilding-sbc.com/retrofit/index.html).

Over time, energy efficiency projects have become both larger and fewer in number. In 1995, project size was $1.3 million CDN (or $ 0.9 million USD), and increased to $1.9 million CDN (or $1.2 million USD) in 1996 and then to $3.5 million CDN (or $2.2 million USD) in 1997. In the same period, there was a dramatic drop in the number of projects from 201 projects, in 1995 to 38 in 1997. The total resulting environmental benefits have also been significant. Positive environmental impacts resulting from the EMF services in 1997 were as follows: 230 million kWh of electricity savings (from 54 projects); 26 million cubic metres of natural gas savings (from 46 projects); 3.5 million litres of fuel savings (from 40 projects); and, 1.4 million litres of water savings (from 38 projects). Hence, the FBI was effective in demonstrating the benefits of EMF services, which in turn lead to significant market take-up and resulting environmental benefits.

Denmark

Although data limitations preclude any substantive conclusions, one survey of public suppliers suggests that Danish GPP policies have not been successful to date in promoting the development and diffusion of greener products and services. Results from one study suggest that suppliers have not had a clear signal with regards to GPP efforts in Denmark (CASA 2001). Although two thirds of the 85 firms surveyed in the survey offered greener products, a significant majority of 69%, had "seldom or never" noted GPP requirements from public purchasers. That said, 76% have plans to offer more environmentally preferable products due to expected increases in GPP. This suggests that mandated GPP policy requirements require additional oversight and implementation efforts to ensure congruency between policy and practice.

United Kingdom

While the benefits of the UK's programme in terms of market development and technological innovation are unknown, the potential benefits are recognised. Some departments are working with targeted suppliers to help foster the success of GPP initiatives prior to their implementation. For example, meetings were held with the U.K. paper industry to ensure it could supply possible increases in Federal demand for recycled paper. Potential problems, such as the adequacy of supply of recycled paper, were identified early on to circumvent their occurrence. (UK Green Ministers 2000).

United States

U.S. Energy Star procurement by Federal agencies has been extremely successful in creating dynamic incentives for both the commercialisation and diffusion of energy-efficient office equipment, particularly related to computer equipment. The original 1993 Presidential Order requiring 100% Energy Star procurement by the U.S. Federal government - the largest purchaser of computers in the world - resulted in an "almost an overnight change in the sector"[8]. Prior to the Executive Order, the specified energy efficiency technologies had been applied only to laptop computers. After the Order,

8. Discussions with Jeff Harris and Phil Coleman at the Lawrence Berkeley National Laboratory.

computer manufactures rushed to apply these technologies to a range of computer equipment to maintain their market competitiveness.

The result has been a complete shift in the computer industry: over 85% of the personal computer and monitor manufacturers, 90% of the printer manufacturers, and over 130 components and software manufacturers in the U.S. now participate in the Energy Star programme (OECD 2001b). Energy Star computer equipment now dominates the market, as approximately 95% of monitors, 80% of computers and 99% of printers sold in the U.S. are Energy Star compliant (Brown et al 2000).

This high degree of market penetration is remarkable in light of the finding that energy consumption is not of high importance for most buyers of computer equipment (Dolin et al 1998). However, Federal purchasing power was sufficiently strong to make Energy Star computer equipment a default option in the American marketplace, thereby, circumventing this issue. Proactive Federal government engagement with the computer industry to define energy efficiency criteria for priority products has also been a key success factor in the successful development and commercialisation of Energy Star technologies. Price competitiveness of Energy Star computer equipment (Brown et al 2000), and dominance of the U.S. computer sector have also been important factors in its diffusion, nationally and internationally.

The original success of Energy Star computer equipment has lent credibility to the successful market development and take-up of products subsequently designated under Energy Star. Today, there are more than 11,000 Energy Star products in more than 30 categories, including heating and cooling equipment, lighting, major appliances and home electronics. More than 1,600 manufacturers have signed voluntary agreements to produce and market equipment with the Energy Star label that meet or exceed energy efficiency guidelines set by the E.P.A. and the D.O.E. As a result it is estimated that in 1999 alone, Americans purchased more than 100 million Energy Star compliant products representing approximately 20% market share (U.S. E.P.A. 2000). The Energy Star programme itself has also expanded internationally, with the signing of Energy Star office equipment agreements with Australia, the European Union, Japan, New Zealand, Taiwan, and, most recently, Canada.

3.4 Soft effects

Soft effects refer to the often unforeseen changes in awareness and attitudes amongst employees, suppliers, stakeholders or individual consumers. In addition, changes in organisational procedures can arise as a consequence of the introduction of GPP programmes. Because of their very nature, such soft effects are typically not defined nor anticipated when a GPP programme or policy is created. Moreover, because soft effects vary across GPP programmes and policies due to differences in design and implementation, they are difficult to quantify and compare. As a result such effects are discussed in more general terms.

Anecdotal evidence indicates that the selected GPP programmes and policies realised some important attitudinal and organisational effects related to issues such as leadership and credibility, more effective or efficient public procurement, organisational culture and greater personal responsibility for the environment.

Many of the selected GPP programmes and policies have enabled governments to demonstrate leadership on environment issues, which in turn, has lent credibility to other, often more controversial, environmental policy issues. For example, Canada's Green Power and FBI programmes helped to increase the Federal government's credibility with respect to its broader climate change agenda. By demonstrating real GHG emissions reductions through its internal GPP efforts, the Federal government is perceived to have greater authority in asking other governmental and private sector institutions to embark on the same course.

GPP programmes and policies can also strengthen the design and implementation of environmental management systems within public authorities, given that they are mutually reinforcing - as the Austrian experience has demonstrated. Moreover, GPP efforts that focus on strong public-private sector partnerships or include EMS as procurement criteria, encourage firms to introduce their own internal EMS's and greener purchasing programmes.

GPP also fosters greater environmental awareness and encourages personal responsibility of the environment by employees and suppliers. This in turn can result in increased greener purchasing at an individual consumer level.

GPP efforts can also encourage more general improvements in the efficiency of government procurement, as was found in countries such as Austria and the U.K.. By increasing direct communication between procurement officers, GPP programmes encourage discussions related to other procurement matters, such as experiences with suppliers and products, complaints by users, and effectiveness of computerised procurement systems. GPP also provides an additional advantage of making purchasers more familiar with bulk purchasing opportunities and the internet, thereby increasing the potential for greater cost savings, access to a greater number and diversity of suppliers, and more efficient procurement procedures.

Finally, the process of implementing a GPP programme or policy can also be an effective means of fostering positive cultural change within governmental organisations, and improving employee commitment to the organisation itself. This is due to the participatory nature of GPP programmes and policies that engage public employees in the change process and increase their organisational awareness.

4. Designing effective and efficient GPP programmes and policies

This section assesses the management characteristics of the selected GPP programmes and policies, and provides insights into GPP best practices. In addition, two management elements that have largely not been applied in GPP policies and programmes to date, namely GPP indicators and evaluations, will be explored in greater detail.

4.1 Management assessment of selected GPP programmes and policies

In general, the programmes and policies selected for this review have been very effective in managerial terms. First, the majority of the programmes or policies obtained senior management support early on in the design process to ensure the GPP effort would have sufficient credibility. Moreover, in a few instances (Austria, Denmark, U.S.) senior management commitment was coupled with mandatory GPP requirements that not only underscored this support, but more importantly provided clear directives and expectations to policy makers and purchasers alike.

Second, a majority of selected programmes and policies employed a strategic approach to product selection. For the programmes or policies targeting a broad number of product categories, a LCA approach was often employed, thereby helping to optimise positive environmental impacts resulting from the greener procurement process. For those GPP programmes that targeted either specific products or issues such as energy efficiency, product selection was again strategic, based on high volumes, environmental impacts, or opportunities where emerging technologies could be effectively brought to market.

All of the selected GPP programmes and policies focussed on the development of concrete and practical GPP tools, including information-based as well as accounting and financial tools. These

instruments are crucial for effective GPP implementation as purchasers often lack the expertise or time to select environmentally-preferable goods. The GPP programmes and policies also developed communications and training tools to encourage collaboration and learning through training, committees and networks. This strategy is very effective, particularly for smaller institutions or local governments, in optimising limited resources and learning.

Many of the selected GPP programmes and policies also share elements where their management efforts could be strengthened. First, while some exceptions exist, there appear to be few clear management accountabilities and follow-up for both the implementation and outcomes of GPP initiatives. While clear accountabilities and monitoring can be difficult to put into practice for a number of reasons - such as low political priority and decentralised GPP efforts - the sheer number of people and products involved, they are crucial in achieving desired GPP outcomes.

Related to this is the finding that many of the GPP programmes and policies reviewed highlighted the difficulty of maintaining on-going commitment to GPP in affected organisations. A study commissioned by the Danish E.P.A. (CASA 2001) found that the environment was a low priority when ranking purchasing criteria, despite legislated GPP policies. This suggests that a concerted effort is required by GPP managers to ensure on-going commitment from senior managers and purchasers alike. Regular awareness and training efforts, even where GPP is mandated, appears to be necessary to foster success after initial interest has faded.

Of greatest concern is the general absence of GPP targets and indicators to measure progress. GPP targets were identified for some of the selected programmes and policies; however, they were often embedded within broader targets, or were qualitative in nature. Indicators to assess GPP were not available for a range of key aspects, including: procurement data (i.e., percentages of greener products purchased), environmental data (i.e., environmental characteristics of products, net environmental impacts), economic data (i.e., cost impacts), and market data (i.e., trends in supply of greener products).

A key factor that impedes GPP performance measurement is the fact that it is often not perceived to be a high priority by many public institutions (GDS Associates et al, 2001). Other more practical problems, such as methodological, data collection and cost implications, also help to explain the current lack of GPP targets and indicators. However, the importance placed on GPP targets and indicators will inevitably grow as GPP programmes mature and face increasing pressure to demonstrate their effectiveness. (See section 4.3 for a more detailed discussion of GPP indicators and data.)

Finally, there is a lack of GPP programme or policy evaluations. Evaluations are critical to the continual improvement of GPP implementation, and in the advancement of GPP goals. They also serve other purposes, such as enhancing communication with stakeholders and the public on the purpose, operation and effects of the policy (OECD 1996a). (See section 4.4 for perspectives as to why GPP programmes are rarely evaluated.)

4.2 GPP programme and policy best practices

Based on the review of the selected GPP programmes and policies, many recommendations as to GPP best practice can be made to help optimise the management and effectiveness of GPP programmes and policies in achieving environmental, economic and market goals.

Management best practices

Senior management commitment – Leadership from senior levels is essential in underscoring the importance of GPP, making it a priority for busy managers and procurement officers alike. Senior management commitment is critical to successful implementation even when clear benefits, such as cost savings, can be demonstrated. Perhaps most importantly, this can reduce procurement officers sense of professional risk when applying environmental criteria in their procurement decisions.

Mandatory GPP requirements – Mandatory GPP requirements can be very effective in establishing GPP as a government priority and in sending a signal to the private sector. That said, legal requirements alone are not sufficient, and need to be coupled with other measures, such as on-going visibility, clear accountabilities, as well as monitoring and reporting requirements, to foster effective implementation.

Simple and concrete GPP tools – Concrete and targeted GPP tools are essential in providing guidance to procurement officers. Guidebooks, environmental criteria, and databases help to simplify a sometimes complex and intimidating decision-making process, thereby reducing 'investigation and search costs'.

Awareness and training – GPP awareness and training helps to foster both a change in procurement culture and in purchasing behaviour. Training is necessary not only to assist purchasers in making effective procurement decisions, but also to inform end-users in the appropriate use of environmentally preferable products.

Measurable targets, indicators, and public reporting – Clear targets coupled with regular monitoring and reporting are key as can they provide an accountability mechanism, and enable comparison across 'competing' public institutions.

Pilot projects – GPP pilot projects can foster creativity and risk-taking due to their limited scope. They can also serve to demonstrate the effectiveness of leading edge technologies.

Collaboration to optimise GPP effects – Collaboration in a variety of forms helps to enhance the effectiveness of GPP programmes and policies. Public institutions can optimise limited resources by sharing expertise, developing shared tools and co-ordinating purchasing to secure competitive prices.

Strategic design and implementation best practices

GPP as part of a comprehensive policy approach – The effects of GPP programmes and policies can often be strengthened when they are embedded within other environmental initiatives, such as Local Agenda 21 climate change, or co-operative procurement initiatives.

Life cycle costing - LCC is effective as it fosters more fiscally responsible procurement decisions, and can, in some cases, help to make the business case for GPP, even if "environmental" factors are not explicitly incorporated.

Life cycle assessment and environmental externalities – LCA is invaluable as it fosters environmentally effective decision-making. Although complex and difficult, a comprehensive evaluation of the full environmental impacts of product choices is important in minimizing unintended negative impacts. The quantification of environmental and other relevant externalities can also foster GPP by providing an economic rationale for premium priced greener products.

Private sector engagement and partnerships - Early private sector engagement helps to identify product innovation opportunities, define sound environmental criteria and send clear signals to the marketplace. In certain instances, the private sector can help public manager overcome barriers related to access to capital by providing third-party financing for GPP efforts related to energy efficiency.

4.3 GPP indicators and data considerations

GPP indicator definition and data collection can be both difficult and time-consuming for a number of reasons. These issues require careful consideration and management as inadequate or incomplete data can lead to misleading or incorrect conclusions. As a result of the many factors identified below, it is not surprising that many public institutions are unclear as to how to best monitor the effectiveness of their GPP policies (U.K. Green Ministers 2000).

Defining "greener" products

There continues to be a scarcity of information about the environmental performance of products and services, particularly related to the various life-cycle stages of manufacturing, distribution, use and disposal related to a product (U.S. GAO 2001). Therefore, determining the comparative "greenness" of products is a formidable task, explaining the continued reliance on single environmental criteria.

This difficulty is exacerbated by the great variety and variability of commodity and specialized goods purchased within and across governments (OECD 1999). The cost, time and knowledge requirements to define greener products are substantial, thus creating pervasive obstacles in indicator definition and data collection.

GPP indicator definition and selection

The definition of GPP indicators is also challenging. Methodologies are required for baseline data, raw data (directly collected from a purchasing system) and secondary indicators (calculated from the raw data) for a range of negotiated priority areas such as volume of purchases, energy savings, environmental benefits, LCC savings and dynamic incentives. Moreover, GPP programme indicators, in areas such as GPP awareness and capacity building efforts, are desirable for programme evaluation purposes. An American study (GDS Associates 2001) undertaken to define a set of indicators for energy efficient procurement by state and local governments illustrates many of the methodological and consensus-building issues in defining GPP indicators.

Procurement practices, systems and data collection

As previously discussed, public procurement is increasingly decentralised, and conducted by a variety of public procurement mechanisms, from credit card purchases to formal contracts, making detailed GPP tracking difficult. For example, greener products may be embedded within large contracts, thus making it difficult to locate and ascertain dollar values of greener purchases.

A general lack of suitable data tracking systems and procedures also presents a significant obstacle to GPP data collection. Procurement systems typically track only general information related to product categories (such as building products), and not individual purchases (US GAO 2001, GDS

Associates et al 2001). GPP considerations therefore, need be embedded into the planning and design stage of new procurement systems to avoid costly and burdensome system 'retrofits'.

Because of these issues, GPP data collection can be expensive and, at times, may not be justifiable via census methods involving integrated procurement systems. For example, Federal departments in a study by the U.S. General Accounting Office (2001) found that the cost of developing and maintaining a reliable system to address GPP would exceed the value of the information produced.

In order to limit GPP data collection costs, different strategies can be adopted. First, an analysis of the technical feasibility and cost implications of proposed GPP indicators is effective in identifying GPP indicators that can be made operational. In addition, proxies for comprehensive, census data can be identified. While less than optimal, data based on estimates, surveys and statistical samples may represent more feasible and sufficiently effective alternatives in measuring the effectiveness of GPP programmes and policies. Given the general absence of GPP data currently, these proxies would represent a positive step forward in advancing GPP programme and policy monitoring and reporting.

4.4 Why GPP programmes and policies are rarely evaluated

There is a general absence of formal evaluations, either internal or third party, of GPP programmes and policies. However, this failing is not unique to GPP and applies to many environmental policy instruments (OECD 1996). In addition to the lack of GPP indicators and data, explanations why GPP programmes and policies have not been evaluated to date include the following:

Most experiences are too recent – It is simply too soon to investigate the effects of many GPP programmes and policies as they are still in the early implementation stages. More established GPP programmes are more likely to have evaluations or some type of assessment.

GPP is not controversial, and therefore, not heavily scrutinised - GPP programmes do not appear to be overtly intrusive as they do not have direct fiscal or legislative implications for industry, and private sector participation is voluntary.[9] Because it is the "right thing to do", the impetus for evaluations may not be strong. This is supported by the observation that evaluations or other data was typically more available for GPP programmes that were a political priority or that involved the private sector.

Evaluations are often negatively perceived by programme administrators – Anecdotal observations suggest that evaluations may be perceived by programme administrators as "high-risk, low-reward" events, as positive findings may not rewarded and more significantly, negative findings may be punished through budget cuts and/or loss of managerial responsibility.

Conceptual difficulties – As underscored in this review, it is very difficult to assess the true impacts of GPP programmes and policies, and to determine what would have happened had they not been introduced. Moreover, it is difficult to isolate the contribution of GPP in isolation from the effects of parallel measures undertaken by the same or other levels of government.

---

9. Although at the level of the individual firm they do have significant commercial implications. These can be positive or negative, depending upon how programme is implemented and how the individual firm is affected. Indeed, the potential for strategic behaviour for "favoured" firms is quite considerable.

Division of responsibility – In general, evaluations are more complex for policies that are divided between government departments and agencies. Because GPP programmes are often divided internally (between environmental policy and procurement operations units) and across different departments and government levels, GPP evaluations may not be conducted due to their highly complex and decentralised nature.

5. Conclusions

The initial scan of OECD Member countries to select the GPP programmes and policies for this review indicates that while many OECD Member countries are implementing GPP programmes and policies, the majority of these are at the very early stages of implementation. Moreover, GPP programmes and policies are often limited in terms of their product-focus (energy savings), scope (environmental departments lead the initiative) or environmental impact (single environmental criteria).

The different degrees of success of the selected policies and programmes speak to both the promise and compromise of GPP as both an EMS component and a policy instrument; however, the unavailability of GPP targets, indicators and programme evaluations limit the degree to which conclusions can be made.

Conclusions regarding the environmental effectiveness of GPP, its principle justification, are either mixed or not possible. Some of the selected programmes and policies were successful in achieving identified goals or in reducing negative environmental impacts of governmental operations. However, in the majority of cases, these 'successes' are based on single environmental criteria, such as energy savings or GHG emission reductions, thus precluding any conclusions as to their overall environmental effectiveness.

Other GPP programmes or policies, typically those employing a multi-criteria, multi-product approach, were not able to demonstrate environmental benefits due to lack of data. While their very nature suggests an intuitive operational environmental benefit, it is not possible to ascertain if this is indeed the case, or to speculate on their degree of effectiveness.

Conclusions with respect to cost effectiveness are also mixed. Some GPP efforts, such as those targeting energy savings, were able to demonstrate either small or significant operational cost savings. Programmes that applied VFM or included quantified environmental externalities were also justified on financial grounds. However, for the more controversial programmes and policies (i.e., where a premium is paid for environmentally preferable goods), conclusions as to their cost effectiveness are not possible due to lack of data. This raises questions regarding both the environmental and cost effectiveness of programmes of this nature. It appears that soft considerations, such as leadership and intuitive benefits, weighed heavily in these decisions.

Evidence with respect to the dynamic effects of GPP again points to mixed results. A few programmes and policies introduced dynamic incentives that fostered the development and diffusion of targeted environmentally preferable goods. Moreover, the resulting market take-up led to subsequent environmental and economic benefits at a more national level. Large purchasing power, clear market signals and direct engagement with the private sector all helped to foster these successes. Other programmes, largely decentralised and involving multiple products, were not able to demonstrate positive dynamic effects.

The soft effects of GPP programmes and policies resulted in unforeseen benefits. In some cases, GPP helped to demonstrate government leadership on the environment, and lent credibility to national environmental agendas, such as climate change and sustainable consumption. GPP also

fostered greater environmental awareness, thereby encouraging greener purchasing by employees as individual consumers, and by the private sector. There may have also been important organisational consequences arising from the implementation of some programmes.

With respect to implementation, two broad GPP approaches can be discerned: One is a decentralised bottom-up implementation approach that often targets a broad range of products for a wide number of purchasers as part of an internal EMS, while the other is a more strategic, top-down approach for targeted products which strive to, not only advance environmental goals, but also to create strong market incentives. Findings suggest that GPP programmes and policies that are more centralised and emphasise specific products are more successful in demonstrating not only environmental benefits, but also dynamic incentives and occasionally, cost savings. GPP efforts that were decentralised and involved multiple product categories were generally unable to provide data to demonstrate environmental or other benefits. This raises questions as to the effectiveness of these GPP approaches in promoting EMS and in advancing environmental goals.[10]

Product identification also varied. There seems to be a high reliance on eco-labelling products or their underlying environmental criteria to select greener goods. Governments, particularly smaller public institutions with limited resources, look for LCA proxies to minimise 'investigation and search costs'. However, eco-labelling programmes have their own limitations because of the relatively small number of eco-labelled products available, the time-intensive specification and certification processes, and the general reluctance by the private sector to be evaluated by third parties. These factors partially explain the current undue reliance on single environmental criteria. This failing, however, is not specific to GPP, but can equally apply to other environmental policy instruments. As the science and methodology of LCA evolves, so too will its application; however, a concerted effort is required to better apply LCA principles to GPP.

GPP design and implementation largely reflects the intended outcomes of the programme or policy. Historically, GPP has been perceived as one means to reduce environmental impacts of internal government operations as part of a comprehensive EMS. Many countries, such as Canada and the U.K., have therefore embedded GPP in their more general agenda to put their own "house in order". As such, other GPP benefits, such as cost savings and dynamic incentives, while identified, are often ancillary and not the focal point. However, increasing international attention on sustainable consumption, and specific efforts, such as the European Commission's work on "Integrated Product Policy", are shifting this perception. As such there is a growing tendency to ascribe multiple goals and objectives to GPP as a substantive policy instrument.

With respect to the scope of the programmes, there appears to be a continuum within and across OECD Member countries, where, on one end, GPP is applied as one component of an EMS designed to reduce negative environmental impacts of internal operations, while on the other end, GPP is applied as an environmental policy instrument which can be strategically embedded within a more comprehensive package of instruments designed to achieve multiple objectives. When embedded within larger environmental agendas, such as Local Agenda 21, GPP not only benefits from the weight, credibility and profile of these broader efforts, but can also contribute to their greater overall success. In fact, their success can be hampered if adequate linkages with GPP are not made (i.e., see Ohler and Jorg 1998). Given the demonstrated success of certain GPP programmes in creating dynamic incentives, linkages with other policies (i.e., environmental or technology-diffusion goals) should be fostered to enhance success in achieving complementary goals. The apparent "untapped potential" of GPP may be related to the fact that GPP is typically implemented within the

10. The broader question of whether or not EMS itself is important for the environmental performance of public authorities is beyond the scope of this paper.

administrative arm of government departments, and hence has historically not been seen as a viable policy instrument.

In certain political environments where the environment is not a priority, GPP can help to advance an environmental agenda, when other, more controversial policy instruments cannot be successfully applied. This is strengthened through the application of more comprehensive budgetary measures, such as VFM (U.K) and the internalisation of environmental and other externalities (Canada), were also shown to be very effective in making the economic justification to purchase premium priced greener products. Engagement of the private sector early on in the programme design stage also appears to encourage success.

While not a panacea, GPP can achieve important positive impacts effectively applied. Before designing GPP programmes and policies, governments, therefore, need to clearly define their intended objectives and make appropriate policy linkages in order to efficiently attain and demonstrate desired outcomes, and to manage stakeholder expectations. Measurable targets and indicators are an essential, but thus far under-utilised, mechanism to achieve these ends.

ANNEX 2.1: CHARACTERISTICS OF GPP PROGRAMMES AND POLICIES REVIEWED

The six case studies reviewed represented a cross-section of GPP programmes and policies, in terms of countries, products affected, environmental impacts, and the nature of implementation. The main features of the six programmes are reviewed below.

A.1 Austria

Austria has given much consideration to the advancement of a 'product related environmental policy' approach. It developed its own eco-labelling system, in 1991, and co-operates with the EU eco-labelling scheme, the "Flower". This focus on products has been expanded to include GPP. The scope of Austria's GPP policy for the purposes of this report includes its national legislative GPP framework, as well as some specific examples of GPP efforts by local authorities.

The Austrian government has applied legislative instruments requiring GPP within Federal agencies. In 1990, it passed a waste management law requiring the Federal government to procure only those products that have a limited impact on the environment and generate small volumes of waste. Another important step for the legal protection of environmentally sound procurement was the inclusion of ecological aspects of goods and services as a basic principle in the Austrian Tender Act in 1993, and in the Austrian Standards System in 2000, thus requiring that environmental issues be considered in the public tendering process. All nine Austrian provinces have since then included these or similar environmental requirements in their procurement laws and guidelines.

An inter-ministerial task force established greener purchasing guidelines that exceeded the requirements of Austrian environmental law. These guidelines were accepted by Austria's Council of Ministers in 1998, and provide information to Federal procurement officers on product groups such as office equipment, buildings and cleaning supplies. Because Federal institutions are responsible for their own GPP initiatives, they share no common GPP targets. One universal GPP target at a municipal level relates to Vienna's comprehensive climate protection programme, where, by 2005, all public facilities, and in particular hospitals, schools, day care centres, old-age homes and nursing homes, are to increase their share of organically grown food to 30%. (www.klip.wien.at/english /basics/ba_programm.htm#)

GPP promotion and tools

The Ministry of Environment provided funding to the Inter-University Research Center for Technology in 1997 to establish *Procurement Service Austria - the Information Center for Environmentally Sound Purchasing*. Procurement Service Austria (www.ifz.tu-graz.ac.at/bsa/) facilitates GPP implementation at all government levels by developing information-based, training and communications tools for GPP. Examples include a quarterly newsletter, "Take it", an information hotline and workshops.

Procurement Service Austria, with three Federal Ministries and five Provincial governments, has managed an EU LIFE Project to develop a criteria catalogue for greener procurement, "Check it!" in partnership with seven scientific and consulting institutions in Austria. This environmental criteria catalogue, published in October 2001, identifies nine priority product groups, including paper, cleaning supplies and furniture. All government levels and the private sector will be encouraged to

include these criteria in their tendering procedures. Procurement Service Austria also supports procurement projects managed by other public institutions. Other groups also work to promote greener purchasing, including the Factor 4+ Association that organised a congress event in 1999 for Federal government and Austrian communities.

GPP implementation – some municipal examples

Although greener procurement requirements impact all government levels in Austria, each has its own authority regarding procurement and GPP more specifically. As a result of this independence, there is no common purchasing policy, and, hence, GPP efforts, including goal setting, implementation and reporting, are largely decentralised and linked through informal structures. Because it is not possible to present an overall picture of Austria's efforts, some specific examples of GPP efforts at the local level are reviewed.

The Vienna Hospital Association has undertaken several GPP initiatives. In 1992, PVC-based packaging material was banned in Vienna and the use of PVC in the medical field was to be minimised. As a result, PVC was phased out in hospitals through a prescribed procurement policy that banned its procurement wherever feasible. The Hospital Association also developed ecological criteria for washing and cleaning agents. An expert panel prepared an information-based tool - a criteria catalogue where ecological aspects were valued at 40%, and price was valued at 60%. The expert panel ranked the various cleaning agents and eliminated 105 out of the 175 due to environmental or data reasons. Vienna hospitals and nursing homes tested the remaining products, resulting in a final set of 40 products that were then recommended for use not only by the Vienna Hospital Association, but also by kindergartens, schools, civic buildings and other public facilities. Finally, the Association has recently assessed the feasibility (cost, availability) of purchasing organically grown food products for its hospitals.

In 1998, the City of Vienna established its environmentally benign purchasing policy and initiated the "Eco-Purchase-Vienna" project to define environmentally sound product options through the development of a comprehensive information-based tool. The project involves all municipal departments and enterprises operated by the City of Vienna including the Vienna Hospital Association. Fifteen working groups were created to define GPP criteria for a range of product groups. The results then formed the basis for an environmental criteria catalogue that specifies ecological recommendations for planning and tendering products and services for all departments in a range of areas (construction, vehicles, civil engineering, interior furnishings, mechanical services, electrical office equipment, household appliances and printing). The environmental criteria include requirements such as minimum packaging, no phosphate or formaldehyde in the products, no chlorine bleaching, no aggressive cleaning agents and no tropical timber. (www.klip.wien.at/english/wohnen/wo_wohnbauproj.htm#)

Finally, in Wiener Neustadt an action group was formed to promote GPP in cleaning products. A comprehensive approach was taken, involving a range of GPP instruments. Information-based tools were developed to provide minimum environmental requirements. Training and communications tools included information exchange, training for procurement staff and centralised purchasing.

A.2 Canada – green power procurement pilot

Canada's pilot project to purchase green power for its facilities began in 1997. Two Federal departments, Natural Resources Canada (NRCan) and Environment Canada entered into two separate 10-year agreements with Enmax, Calgary's electric system, to voluntarily purchase 100% of their

building electricity requirements in the province of Alberta from emerging renewable sources (Government of Canada, 1997). Green power in this case means low or non-emitting energy sources such as wind, solar and biomass. This small pilot project generated 12 GWh of electricity per year.

Because of the highly specific nature of the purchase, the purchasing decision was made by a small number of senior managers and environmental policy experts within both departments. The Department of Public Works and Government Services Canada, the department responsible for the management of Federal facilities and procurement, managed the call for tender and oversaw the contract. NRCan and Environment Canada managed their tenders and negotiated their agreements with Enamx, the successful bidder. Enmax was responsible for securing the electricity, choosing suppliers and ensuring that suppliers met contract specifications. One contract specification was that the suppliers were required to maintain EcoLogo certification for green power under Canada's Environmental Choice Programme.

Quantifying the net benefits of green power

Many traditional GPP tools, such as procurement officer training and GPP catalogues were not developed due to the very targeted nature of the green power purchase. Emphasis was placed instead on accounting and financial tools. As part of the original procurement decision-making process, a study, *Estimated Environmental Benefits of Green Power Purchases for Federal Facilities* (Acres 1998), was commissioned by NRCan in 1996 to quantify the benefits of green power purchases for Federal government facilities given that green power typically costs more compared to traditional, fossil-fuel sources. Its purpose was to determine whether or not the Government of Canada should purchase green power and if so, what was the maximum amount it should be prepared to pay.

The report identified three key benefits of green power purchases. The first benefit was the reduction in emissions from fossil fuel generation that green power could displace. Second, given that green power facilities tend to have fixed costs once they are in place, a green power contract would have a fixed price for a long term, providing a hedge against future price increases. Finally, Federal government purchasing of green power had the potential to stimulate the market for green power, thus leading to its purchase by other consumers.

To calculate the environmental benefit, the study first estimated the relevant damage costs in dollars per tonne of pollutant, including CO_2, methane, N_2O, SO_2, NO_x and particulates. Representative data on emissions based on the mix of generation types and fuels by province was then applied to produce an estimated value for the damage costs from electricity generation in Canada. The net environmental benefit was estimated to range from just under 1 cent to almost 4.5 cents CDN (approximately 0.6 to 3 cents USD) per kilowatt-hour (KWh).

To calculate the value of the hedge, the value against random price increases (called unexpected price increases) and the value against inflation or other expected increases were both determined. The hedge value ranged from 0 (in provinces that use little fossil fuel) to about 0.6 cents CDN (or 0.4 cents USD) per KWh.

The price of replaced conventional power in Alberta and Saskatchewan was estimated at 1.5 cents CDN per KWh and 2.1 cents CDN per KWh respectively (or 1 and 1.3 cents USD). These values were derived from an analysis of market conditions in 1996.

After including the price of replaced conventional power, the net environmental benefit and the hedge value, the maximum economic price for green power in the two most likely pilot provinces was then estimated at 4.6 cents CDN per KWh in Alberta and 6.9 cents CDN per KWh in Saskatchewan (or 3 and 4.5 cents USD). These figures represent a price premium of three times the

replaced conventional power price, and provided the justification for paying the price premium of green power.

Based on the results of the study and subsequent comparisons to estimated green power price premiums, the decision was made to purchase green power at a price premium (i.e., price preference tool) for NRCan and Environment Canada facilities in Alberta. Alberta was selected as the location for the first pilot due to its carbon-intensive electricity and interest by electric utilities in the development of voluntary markets.

Links with Canada's national climate change agenda

A subsequent analysis of the merits of the Green Power programme as a means to reduce GHG emission was embedded into Canada's overarching climate change programme. In 1998, Canada established 16 Climate Change Issue Tables, including one on electricity, to devise recommendations for how to best respond to Canada's greenhouse gas (GHG) target in the Kyoto Protocol. The Electricity Table members involved a wide spectrum of stakeholders including provincial and municipal governments, industry, environmental groups and others.

It examined electricity generation as well as the transmission and distribution elements of the electricity industry to assess the potential contribution that could be made by the electricity and cogeneration industries, including renewable energy, towards GHG reductions. Different options were assessed for their environmental impacts, economic costs, regional effects and international trade implications.

The Electricity Table, in its 1999 Options Report, strongly supported the recommendation that "Federal, provincial and municipal governments (where appropriate) expand purchases of non-GHG/low emitting sources of supply". The Table process and its ultimate recommendation were key in promoting the overall feasibility and effectiveness of public green power procurement.

Rollout of additional green power pilots

Building on the success of the Alberta pilot and in order to maintain momentum towards meeting Canada's climate change objectives, the Government of Canada announced in the 2000 budget that it would expand its purchases to procure $15 million CDN (or $9.7 million USD) of renewable energy in Saskatchewan and Prince Edward Island. An agreement was announced in 2000 with SaskPower, the electric utility in Saskatchewan, where over 25 GWh of wind energy would be provided annually at a total premium of $12.4 million CDN (or $8 million USD) to Federal facilities for ten years starting in 2001 (Government of Canada 2000b).

In Prince Edward Island, a partnership between the Federal and Provincial governments has resulted in a 10-year green power commitment with the Maritime Electric Company starting in 2001. The Federal government agreed to an annual green power purchase of 13 GWh at a premium of $4.5 million CDN (or $2.9 million USD), while the Provincial government committed to an annual purchase of 3,000 MWh at a premium of $1.1 million CDN (or $0.7 million USD). The excess balance of 600 MWh of green power resulting from the agreement will be made available at a premium to commercial and residential customers on a voluntary basis.

Finally, based on recommendations from the Electricity Table, the Federal Government, in its Action Plan 2000, committed to purchase 20% of its total electricity requirements (representing an additional 400 GWh) from green power sources by 2006, involving an investment of $30 million CDN (or $19.4 million USD) (Government of Canada 2000a).

A.3 Canada - Federal Buildings Initiative (FBI)

The Federal Buildings Initiative, announced by NRCan in 1991, was designed to help Federal departments and agencies make their buildings more energy and water-efficient through the provision of a comprehensive package of environmentally preferable products and services. The mandate of the FBI was to reduce the negative environmental impacts of energy use, such as GHG emissions, and achieve cost savings for Federal departments. Examples of environmentally preferable building products, services and systems include energy-efficient lighting, modernisation of control systems, component improvements to heating, ventilation and air-conditioning systems, upgrading of fan motors, co-generation installations burning natural gas, renewable energy technology, energy management training and employee awareness programmes.

Third-party financing of FBI projects

Prior to the FBI, Federal departments were not in a position to improve the efficiency of their energy or water systems. Systems equipment was typically replaced when it grew old or failed, and energy and water efficiency improvements were not considered as they competed with all other capital projects. The FBI provided departments with a financial instrument to implement efficiency improvements outside of the regular capital project stream. Third party financing through energy management firms (EMF) was a key mechanism to overcome the obstacle of high initial capital costs of energy and water-efficient building technologies while minimising the initial outlay and risks incurred by the Federal departments. EMFs also brought current energy management expertise to Federal departments as most have an outdated or limited knowledge of energy management, and do not always know what their energy and waters costs are. (See Chapter 4 for a general discussion on the merits of third-party financing.)

The FBI developed and maintains a list of pre-qualified energy management firms that may respond to requests for proposals issued by Federal organizations for energy efficiency improvement projects. At present, 13 pre-qualified firms meet FBI programme criteria related to engineering and project management experience, financial capability, risk management and contract capability. In particular, firms are required to have the full financial capability that is necessary for the provision of energy management services, or to obtain this capability through a financial institution.

Under the FBI, Federal departments issue a request for proposal for energy and water efficiency improvements for a specific building or group of buildings, and enter into a contract with the qualified bidder to undertake the project. The firm then determines energy product and system improvements for the project, installs them, pays the capital costs of the work, and trains the building maintenance staff to operate the new systems, and guarantees a level of energy savings. The department continues to pay its usual energy bills during the payback period. The private firm is repaid for the work out of the energy savings - the difference between the original energy operating costs and the new, lower costs. When the payback is complete, the contract is terminated and the subsequent energy cost savings accrue to the department.

FBI implementation

FBI is a voluntary programme, and its use is left to the discretion of custodian departments that have responsibility for the management and operation of Federal buildings. As a result, FBI staff promote the programme's benefits and provide technical and other support to these targeted departments. The FBI's main activities include programme, product and service development, programme promotion and marketing, development of training and communications tools, assistance, as well as programme monitoring and reporting. To date, the FBI programme has been implemented

by 10 Federal departments in approximately 6,500 buildings, such as offices, research and testing labs, military bases and one airport, across Canada. These projects represent a private-sector investment of $190 million CDN (or $123 million USD).

A.4 Denmark

Danish public sector purchases approximately 140,000 million DKK (or $17 million USD) each year (Danish EPA). This procurement is roughly broken down in the following way: 19% is purchased by national governmental institutions, 13% by regional institutions and 23% by local institutions, while the final 45% is purchased by different publicly-owned companies (Statistics Denmark 2001). Recognising the opportunity to reduce the environmental impact of the public sector and support greener product development, the Danish government has been a leader in promoting GPP through legislative mechanisms. This review will focus on the Denmark's GPP legislative policy framework that was first established for the Federal level, and was subsequently applied by regional and local authorities.

First, the "Strategy for the Promotion of Sustainable Product Procurement Policy" was developed by the Danish Ministry for Environment and Energy in 1991. This was followed by the "Action Plan for a Sustainable Public Procurement Policy" for the Danish Federal public sector in 1994, to provide guidance to state institutions.

In 1995, a legislative tool was put in place through a circular that ordered central government institutions and government-owned or controlled companies to formulate an environmental procurement policy by February 1996. They were also responsible for drafting an action plan for its implementation, and for documenting results. The circular stated that environmental aspects were to be considered on par with other considerations, such as price, quality and terms of delivery.

Finally, in December 1998, regional and local authorities entered into a voluntary agreement with the Minister for the Environment and Energy. The agreement committed regional and local authorities to implement greener procurement policies by the end of 2001. As with the central government requirements, environmental and energy considerations were to be considered equal to other considerations such as price and quality.

GPP promotion and tools

Implementation of the GPP requirements is decentralised and left to the discretion of the individual institutions. The Co-ordination Group for Green Public Procurement has been formed, including representatives of the Ministry of the Environment and Energy and the National Association of Local Authorities in Denmark. The Group has been given the task to follow and support this work by developing communication and training tools, such as seminars, in-service training, and documentation materials.

The development of information-based tools, in the form of environmental guidelines, has been one of the most important initiatives to support GPP. To date, guidelines have been developed and tested for 11 broad product categories. representing approximately 50 product groups. They include checklists to assess suppliers and products, as well as background documentation that provides the scientific basis for the guideline. The guidelines are developed through a consensus process and are published regularly on the Internet (www.mst.dk/produkt/05020000.htm). Public institutions can include environmental criteria in their tenders as long as the criteria do not discriminate against foreign competitors. Training and communications tools have also been

developed to provide greener procurement training to the range of government levels, including central managers and purchasers, as well as purchasers from hospitals and childcare institutions.

GPP is also being integrated into the national procurement services offered by National Procurement Ltd. to government institutions. Environmental and energy criteria that encompass LCA considerations are being integrated into the negotiation of new framework agreements for key products. Suppliers must demonstrate that they fulfill the environmental criteria for their products. National Procurement Ltd also promotes GPP through information-based tools, such as its electronic supply catalogue which identifies eco- or energy labels. In the future, statistics with respect to GPP purchasing may be derived from the system.

GPP implementation

Because institutions have difficulties in finding the resources necessary for greener procurement policy initiatives, from 1999 the Danish E.P.A. provided subsidies, largely for municipal networks (representing smaller municipalities with decentralised purchasing functions). The subsidies foster greener procurement activities such as environmental labelling and LCA, and encourage collaboration across municipalities to establish purchasing entities and networks. A standard project receives up to 200,000 DKK (or $25,000 USD) to support up to 50% of costs, which include primarily internal wages, education and training costs and external consultants. To date, five projects involving 13 different participants, primarily municipalities, have received a total of 1.2 million DKK (or $147,000 USD).

Benchmarks or indicators on GPP progress of Danish GPP efforts are currently not available. The Danish E.P.A. is considering doing some benchmarking for GPP in state institutions for a few specific products. National Procurement Ltd is also developing a registration system to assess the quantity of greener purchasing through its framework agreements.

A.5 United Kingdom

Public procurement has been recognised by the U.K. government as an important mechanism to raise awareness and increase demand for recycled goods, and to provide greater security of markets for the private sector to invest in new reprocessing capacity or manufacture of recycled products. The scope of the U.K. review for this report includes its broad GPP policy framework, as well as specific efforts related to recycled-paper purchasing and the application of their value for money (VFM) approach.

In 1997, the U.K. government initiated a far-reaching initiative to improve the environmental performance of its operations. As part of this effort, the U.K. government established the Green Minister's Committee to champion environmental matters, including GPP, within their departments. The Green Ministers produce an annual report (the first in 1999) that identifies specific observations and recommendations, while the Environmental Audit Committee has the lead responsibility for auditing the Government's performance in terms of sustainable development.

GPP promotion and tools

One major component of the U.K.'s GPP initiative was the development of an information-based tool - the *Green Guide for Buyers* in 1997 - by the Department for Environment, Food & Rural Affairs (DEFRA). While originally designed for DEFRA purchasers, it is applicable to purchasers in

all central government departments. In addition to covering policy and practice issues, the Guide contains checklists to help buyers specify goods and services that are environmentally preferable.

One of the Guide's key elements is guidance on the use of the accounting tool, VFM, which U.K. Minister's have identified as the focus of government procurement. VFM is further emphasized by a note jointly issued by HM Treasury and DEFRA, *Environmental Issues in Purchasing*.

VFM is defined as the optimum combination of whole-life cost and quality to meet the user's requirements. The Guide identifies many key elements as components of whole life costing:

- direct running costs - e.g. energy, water and other resources used over the lifetime of the product or service;

- indirect costs - e.g. less energy-efficient IT equipment will produce more heat, causing plant in air conditioned buildings to work harder to remove it, so adding to the electricity bill;

- administration costs - e.g. the use of a more expensive product which is less harmful to the environment and people's health may reduce the time spent by staff in complying with the Control of Substances Hazardous to Health (COSHH) Regulations;

- spending to save - e.g. specifying higher levels of insulation where the extra expenditure can be recouped from lower energy costs;

- training - e.g. if the product is not user-friendly it may entail time, money and effort being expended in training staff to operate it;

- recyclability - e.g. purchasers can create markets for their own waste such as paper, toner cartridges etc. by buying products containing recycled materials. Purchasers should however look first to reduce waste at source; and,

- cost of disposal - e.g. it may be worth paying a premium to a supplier giving an undertaking to remove the product or a hazardous substance at the end of its useful life.

VRM enables buyers to award contracts to suppliers whose products best achieve a balance between quality and whole life costing. Because buyers are encouraged to incorporate environmental specifications, the government procurement policy does not limit procurement to only those suppliers with environmental credentials or voluntary codes of practice.

The DEFRA website also provides other information-based, training and communications tools, such as case studies and a greening government model framework to guide Federal departments in developing policy statements, action plans and targets and performance indicators for greening operations.

GPP implementation

GPP implementation is decentralised within the U.K. central government. While tools and model policies are made available to support government departments with their GPP initiatives, specific policies and goals are left to the discretion of individual departments. As a result, there are no formal government-wide targets for GPP.

A small number of departments have identified GPP targets. For example, in its "Greening Operations Policy Statement", DEFRA has committed to buy 100% recycled paper, purchase sustainably produced timber and timber products, and to buy a minimum of 10% electricity from renewable sources by 2002. The Environment Agency and the Department of Trade and Industry (DTI) also have quantifiable GPP commitments pertaining to recycled paper purchasing. Departmental reporting on GPP progress will be required through the Green Ministers annual report starting in 2001.

The U.K. government recently initiated a targeted effort, backed by Green Ministers, to increase recycled paper procurement. In 2000, the central government committed to conduct pilot projects requiring public procurement of recycled paper, as part of its larger Waste Strategy 2000.

A.6 United States - Energy Star programme

The Federal government spends $US 10 to 20 billion annually purchasing energy-related products, and pays an estimated $7 billion USD annually on energy (FEMP website). As the largest purchaser of certain products, such as computers, in the world, the U.S. Federal government has lead a series of GPP programmes to leverage its enormous purchasing power. It established a legislative mandate in 1976 to 'buy recycled' in over 20 product categories. Later, Federal environmentally preferable purchasing was prescribed through an Executive Order in 1993 and again in 1999. One GPP programme that has had considerable influence, both nationally and internationally, has been the Energy Star programme. The scope of the U.S. GPP case study has been limited to Federal procurement of Energy Star products, with an emphasis on computer equipment.

The U.S. Environmental Protection Agency (EPA) introduced the Energy Star label in 1992 as a voluntary market-based partnership programme to reduce air pollution through increased energy efficiency. The original focus of the Energy Star programme was on computers, monitors and printers, as the goal was to promote energy-saving features already common in laptop computers for use in desktop devices.

Directives for Federal Energy Star procurement

The U.S Federal government has emphasised the use of mandatory directives to implement GPP within its agencies. In 1993, President Clinton signed Executive Order 12845 requiring Federal agencies to purchase computer equipment, specifically personal computers, monitors and printers that met E.P.A. Energy Star requirements for energy efficiency.

In 1999, another Executive Order, number 13123 *Greening the Government Through Efficient Energy Management*, was signed which directed Federal agencies to incorporate energy-efficient criteria consistent with Energy Star in a range of Federal procurement procedures including government wide acquisition contracts. The Executive Order also established a series of specific Federal environmental goals (such as GHG emission reduction targets), and a range of implementation measures to foster success. A range of information-based, communications, training and accounting tools were prescribed. An interagency energy committee, involving senior government representation at the Deputy Secretary level from each agency, was established. In addition, each agency created the role of 'energy manager' to oversee implementation of the Executive Order. As part of implementation, LCA was included in product and service assessments, as well as in training for procurement officers. All agencies also were required to prepare annual implementation plans and report their progress through energy scorecard reporting. To date, energy scorecard reports have been undertaken two times, with a different focus each year. It is expected that the next scorecard report will include a status on Energy Star procurement.

GPP promotion and tools

Since 1996, the Energy Star programme has been operated jointly by the U.S. E.P.A. and the U.S. Department of Energy (DOE). The DOE's Federal Environmental Management Programme (FEMP) provides information-based tools to encourage energy efficient procurement initially by Federal agencies. FEMP issues a series of Product Energy Efficiency Recommendations for more than 60 products that identify recommended efficiency levels for energy-using products that meet the criteria of the Executive Order. Energy Star compliant products have also been referenced in government supply catalogues.

FEMP also developed a series of training and communications tools. For example it maintains a comprehensive website which provides existing Energy Star policies and resolutions, communications materials to promote purchasing policies, sample requests for proposals to specify energy efficient products and interactive savings calculators to estimate cost savings. FEMP also works with the Energy Star programme itself to target and label those products that are commonly purchased in the public sector.

GPP implementation

Twenty-two Federal agencies, representing more than 95 percent of Federal purchasing power, have committed to specify and purchase only best-practice energy and water saving products (FEMP 1999). The Federal government also launched its Energy Star Purchasing Initiative in 1997 to encourage state and local governments to commit to purchase only energy-efficient products and to include energy efficiency as a criteria or policy in their procurement practices. State governments, such as Montana, Indiana, Massachusetts and California, and some municipal governments have subsequently committed to specify Energy Star products. (See the U.S. E.P.A. website for Energy Star case studies: http://yosemite1.epa.gov/estar/business.nsf/content/uncover_ local _ step7.htm.)

REFERENCES

ACRES INTERNATIONAL LIMITED (1998) "Estimated Environmental Benefits of Green Power Purchases for Federal Facilities." Prepared for Renewable and Electrical Energy Division, Natural Resources Canada, Ottawa.

ALLISON CHARLES, AND ANTHEA CARTER (2000) "Study on Different Types of Environmental Labelling (ISO Type II and III Labels): Proposal for an Environmental Labelling Strategy" Prepared by Environmental Resources Management for DG Environment, European Commission, Brussels.

ANSHAN, MARK AND ALAN W. LEVY (1999) "1996 and 1997 Annual Review of the Canadian Energy Performance Contracting Industry". Final Report for the Energy Efficiency Office. Natural Resources Canada, Ottawa.

BROWN, RICH, CARRIE WEBBER AND JON KOOMEY (2000) "Status and Future Directions of the Energy Star Program", Published in the Proceedings of the 2000 ACEEE Summer Study. Lawrence Berkeley National Laboratory.

CENTRE FOR ALTERNATIVE SOCIAL ANALYSIS - CASA (2001) "Mens vi venter på den grønne indkøbere (While we are waiting for the green purchasers)". Prepared for the Danish E.P.A., Copenhagen.

CENTRE FOR ALTERNATIVE SOCIAL ANALYSIS - CASA (2000) "First Nordic Conference on Green Public Procurement Summary". Prepared for the Danish E.P.A., Copenhagen.

CINQ-MARS, JEAN AND CARLO PESSO (1998) "The Role of Eco-labelling in Promoting Environmentally Preferable Products and Services." Presented at the International Conference: "Green Goods V Eco-labelling for a Sustainable Future." 26-28, October 1998, OECD, Berlin.

DALPE, ROBERT AND CHRISTEAN DEBRESSON (1989) "Le secteur public comme premier utlisateur d'innovations" in *L'Actualitie Economique*. Vol. 65, no. 1.

DOLIN, JENNIFER, AND NED RAYNOLDS (1998), "The Energy Star Purchasing Initiative". U.S. E.P.A. and Lawrence Berkeley National Laboratory.

EU-LIFE Project (2001) "Development of a Criteria Catalogue for Green Purchasing – Check it! 10/1998 – 12/2000." Vienna, Austria.

EU-LIFE Project (2000) "Check-it! Criteria Catalogue for Green Purchasing." Vienna, Austria.

FEMP (1999) "1999 FEMP Accomplishments Report." U.S. (website: www.eren.doe.gov/femp/aboutfemp/99report_procurement.html).

FRYDENDAL, JEPPE AND ANDERS SCHMIDT (2001) "ICLEI RELIEF International Survey – Denmark" Teknik Energy and Environment, Copenhagen, Denmark.

GADE, STEEN (2001) "Public Procurement Must be Greener", Editorial by Danish Environmental Protection Agency, Danish E.P.A. website.

GDS ASSOCIATES INC, AND PATRICIA BARNES CONSULTING (2001) "State and Local Government Purchasing Initiative – Program Evaluation Scoping Study", Final Report to Consortium for Energy Efficiency (CEE). US.

GEREFFI, GARY, RONIE GARCIA-JOHNSON, AND ERIKA SASSER (2001) "The NGO-Industrial Complex" in *Foreign Policy*, July/August 2001.

GOVERNMENT OF CANADA (1997), "Government of Canada Signs First Green Power Agreement", Government of Canada Press Release, November 24, 1997.

GOVERNMENT OF CANADA (1999) "Electricity Industry Issues Table - Options Report." Government of Canada.

GOVERNMENT OF CANADA (2000a) "Government of Canada Action Plan 2000 on Climate Change." (www.climatechange.gc.ca) .

GOVERNMENT OF CANADA (2000b) "Government of Canada Invests in Green Power in Saskatchewan" Government of Canada Press Release, October 12, 2000.

GOVERNMENT OF CANADA (2001) "Government of Canada Commits to Greenhouse Gas Reductions" Government of Canada Press Release, June 6, 2001.

HARRIS, JEFFREY, AND FRANCIS JOHNSON (2000) "Potential Energy, Cost and CO2 Savings from Energy-Efficient Government Purchasing", Presented at the 2000 ACEEE Summer Study Conference on Energy Efficiency. Energy Analysis Department, Lawrence Berkeley National Laboratory.

HONORÉ C. OFFENTLIGE (2001) "Resultater af spørgeskemaundersøgelse", Arbejdsrapport fra Miljøstyrelsen. KPMG. Nr. 5. www.mst.dk/udgiv/Publikationer/2001/87-7944-411-3/html/samfat_eng.htm

JOHNSTONE, NICK, KATRIN ERDLENBRUCH AND KASPAR MÜLLER (2003) "The Implications of Budget Systems for the Environmental Characteristics of Public Procurement" Chapter 4 in this volume.

JOSKOW, PAUL L. AND DONALD B. MARRON (1993), "What Does Utility-Subsidized Energy Efficiency Really Cost?" in *Science* Vol. 260: 281-370.

KAWAMOTO, KAORU, JONATHAN G. KOOMEY, BRUCE NORDMAN, RICHARD E. BROWN, MARY ANN PIETTE, AND ALAN K. MEIER (2000), "Electricity Used by Office Equipment and Network Equipment in the U.S. August, 2000." Presented at the 2000 ACEEE Summer Study Conference on Energy Efficiency. Energy Analysis Department, Lawrence Berkeley National Laboratory.

KLAUSBRUCKNER, BRUNO (2001), "Greening the Vienna Hospitals – Basic Principles and Practical Examples." Presented to Clean Med 2001, An International Conference on Environmentally Preferable Medical Products, the Vienna Hospital Association, Vienna.

KUNKLE, RICK, LOREN LUTZENHISER, JEANNINE MOGA, LINDA DETHMAN, CHAD DAVIS, JIM PERICH-ANDERSON, AND ROBERT PAULSON (1999), "Public Procurement and Energy

Efficiency in the Pacific Northwest", Market Research Report for Northwest Energy Efficiency Alliance.

LACKNER, BETIN (2001), "ICLEI RELIEF International Survey – Austria." IFZ, Vienna.

MARITIME ELECTRIC (2001) "FYI announcement" Government of Canada Press Release. June 1, 2001.

MARRON, DONALD, B. (2003) "Greener Public Purchasing as an Environmental Policy Instrument", Chapter 1 in this volume.

MILJØSTYRELSEN (1999) "Kontoret for renere teknologi og produkter (Environmental Friendly Public Procurement in Denmark - Status 1998)" Milojostyrelsen Denmark, Copenhagen.

MÜLLER, KASPAR (2000) "Financial, Budgeting and Accounting Barriers in Greener Public Purchasing – An Issue Paper" Ellipson Consulting, Draft Report Prepared for the OECD, Paris.

NATURAL RESOURCES CANADA (2001a) "Backgrounder – Wind Power Project in Prince Edward Island" Natural Resources Canada, Ottawa.

NATURAL RESOURCES CANADA (2001b), "The Federal Buildings Initiative: An Executive Overview." Natural Resources Canada website http://oee.nrcan.gc.ca/fbi/pdfs/.

NATURAL RESOURCES CANADA (2001c) "The Federal Buildings Initiative - Qualification Requirements." NRCan website http://oee.nrcan.gc.ca/fbi/pdfs/.

NATURAL RESOURCES CANADA (2000a) "Evaluation Study of The Federal Buildings Initiative" September 2000 Draft. Audit and Evaluation Branch, Natural Resources Canada, Ottawa.

NATURAL RESOURCES CANADA (2000b) "Renewable Energy Deployment Initiative (REDI) Year-End Report 1999-2000" Natural Resources Canada, Ottawa.

OECD (1994) *Managing the Environment. The Role of Economic Instruments*" (Paris: OECD).

OECD (1996a) *Evaluating the Efficiency and Effectiveness of Economic Instruments in Environmental Policy* (Paris: OECD).

OECD (1996b) "Policies and Measures for Common Actions – Working Paper 5" (Paris: OECD).

OECD (1997) "Greener Public Purchasing." Issues Paper prepared for the Green Goods IV International Conference on Greener Public Purchasing. February 24 – 26, 1997 Biel-Bienne, Switzerland (Paris: OECD)

OECD (1998) "Green Purchasing – Biel Workshop, February 1998 Summary". Prepared for the Group on Pollution Prevention and Control Meeting, 5-6 May, 1998 (Paris: OECD).

OECD (1999a) "Report by the Environmental Policy Committee on Implementation of the 1996 Recommendation on Improving the Environmental Performance of Governments" (Paris: OECD)

OECD (1999b) "Trade Issues in the Greening of Public Purchasing" (Paris: OECD).

OECD (2000) *Greener Public Purchasing: Issues and Practical Solutions* (Paris: OECD).

OECD (2001a) "Government Procurement: A Synthesis Report" (Paris: OECD, TD/TC/WP(2001)17/REV1.)

OECD (2001b) "Enhancing Markets for Climate Friendly Technologies – Leadership Through Government Purchasing Strategies" (Paris: OECD).

OEHME, INES (2001) "Green Procurement in Austria." IFF/IFZ – Inter-University Research Centre for Technology Work and Culture. Austria.

OFFENTLIGE, HONORÉ C. (2001) "Grønne Indkøb. Resultater af spørgeskemaundersøgelse", Arbejdsrapport fra Miljøstyrelsen." www.mst.dk/udgiv/Publikationer/2001/87-7944-411-3/html/samfat_eng.htm.

OHLER, FRITZ AND LEONHARD JORG (1998) "Public Procurement as Collective Action: The Case of the Austrian Low-Noise Rail Programme" Submitted to the European Commission. (Sub-project: 3.2.2: Government Technology Procurement as a Policy Instrument, Vienna, Austria.)

PICKLUM, ROGER, BRUCE NORDMAN AND BARBARA KRESCH (1999) "Guide to Reducing Energy Use in Office Equipment" Bureau of Energy Conservation, City and County of San Francisco and Energy Analysis Department, Lawrence Berkeley National Laboratory.

PLAS, GERALDINE, AND CHRISTOPH ERDMENGER (2000) "Green Purchasing Good Practice Guide – How local authorities spend their budgets responsibly." ICLEI, Freiburg, Germany.

SASKPOWER (2001) "SaskPower to Construct and Operate Eind Power Project." SaskPower Press Release. June 4, 2001.

SIEMENS, RENETTA AND JEAN BILODEAU (1998) "Towards Greener Government Procurement, An Environment Canada Case Study" in T. Russel (ed.) *Greener Purchasing Opportunities and Innovations* (Sheffield: Greenleaf Publishing).

SØRENSEN, STIG YDING, LIS HUSMER, AND METTE LISE JENSEN (2000), "Efteruddannelse om grønne indkøb (Further education on green procurement)", Working Report No. 19, Danish E.P.A. 2000. Centre for Alternative Social Analysis (CASA), Copenhagen. www.mst.dk/udgiv/publikationer/2000/87-7944-258-7/html

SØRENSEN, STIG YDING (1998), "Analysis of Green Procurement Policy in the State." Environmental project no. 437, Danish E.P.A. 1998. Centre for Alternative Social Analysis – CASA (www.mst.dk/udgiv/publikationer/ 1998/87-7909-327-2/html/default.htm).

SPRENGER, R.U. AND J. KORNER, E. PASKUY AND J. WACKERBAUER, J, (1994), "Das deutsche Steuer- und Abgabensystem aus umweltpolitischer Sicht – ein Analyze seiner okologischen Wirkungen sowie der Moglichkeiten und Grenzen seiner starkeren okologischen Ausrichtung," IFO Studien zur Umweltokonomie 18, IFO Institut fur Wirtschaftsforschung, Munich.

SASKATOON STARPHOENIX (2001) "Government makes second foray into wind power" Tuesday, June 5, Saskatoon.

STATISTICS DENMARK (2001), Unpublished appendix to *Honore*, Copenhagen.

THE GLOBE AND MAIL (2001) "Is Calgary's answer blowing in the wind?", August 13, Toronto.

UNITED KINGDOM BUYING AGENCY (2000), "Introducing Recycled Copier Paper to Government Departments as the Norm on Value For Money Grounds" UK Government.

UNITED KINGDOM ENVIRONMENTAL AUDIT COMMITTEE (1999) "Report on The Greening Government Initiative." UK Government.

UNITED KINGDOM GOVERNMENT (2000) "Waste Strategy 2000: England and Wales, Parts 1 and 2." UK Government.

UNITED KINGDOM GREEN MINISTERS (2000) "Greening Government: The Second Annual Report of the Green Ministers Committee." UK Government.

UNITED KINGDOM GREEN MINISTERS (1999) "Greening Government: The First Annual Report of the Green Ministers Committee." UK Government.

UNITED STATES DEPARTMENT OF ENERGY (2001) Federal Environmental Management Programme (FEMP) website: www.eren.doe/femp/procurement/challenge.html.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (2000) "The Power to Make a Difference: Achievements for 1999 – In Brief." US EPA.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (2001) "Energy Star Factsheet" (website: www.nwalliance.org/news/press/esawards.pdf)

UNITED STATES FEDERAL GOVERNMENT (1993) "Executive Order 12845 – Requiring Agencies to Purchase Energy Efficient Computer Equipment" in *Federal Register* Vol. 58, No. 77 Presidential Documents, April 23, 1993.

UNITED STATES GENERAL ACCOUNTING OFFICE (2001) "Federal Procurement – Better Guidance and Monitoring Needed to Assess Purchases of Environmentally Friendly Products." US GAO.

WESTLING, HANS (2000) "Final Management Report Annex III Co-Operative Procurement of Innovation Technologies for Demand Side Management", International Energy Agency Demand Side Management Program. (Paris: IEA).

PART II

GREENER PUBLIC PURCHASING AND PUBLIC EXPENDITURE MANAGEMENT

Overview of Budget Systems and Public Procurement in OECD Countries
by Anne C. Richard

The Implications of Budget Systems for the Environmental Characteristics of Public Procurement
by Nick Johnstone, Katrin Erdlenbruch, and Kaspar Müller

PART II

GREENER PUBLIC PURCHASING AND PUBLIC EXPENDITURE MANAGEMENT

Chapters 3 and 4 look in detail at the issues addressed in the Vienna Workshop -- the links between public expenditure management and greener public purchasing. The chapters examine both the direct links between public expenditure management and explicit GPP policies, as well as the more indirect relationship between public expenditure management and the environmental characteristic of public procurement in general.

Chapter 3 provides an overview of budget systems and public procurement in OECD countries. Drawing upon work undertaken in the OECD's Public Management Service (PUMA) it reviews public accounting and budget practices, as well as the nature and extent of reforms presently being undertaken in these areas. The first section provides an overview of standard procurement practices, including issues such as the design of technical specifications, tendering procedures, and contract awards. It also reviews recent trends in procurement practices such as decentralisation and the use of electronic commerce.

In terms of the broader public expenditure management frameworks the chapter identifies a number of important issues which can result in inefficient public expenditure management and which differ across (and within) countries:

- The extent of managerial accountability for decisions related to procurement;
- The time-frames applied in setting budgets, such as single-year or multi-year budget frameworks;
- The extent of temporal flexibility which exists, such as the possibility for carry-over or borrowing-against-the-future;
- The prevalence of split responsibilities for capital and operating costs between different agencies or divisions; and,
- The nature of the accounting procedures used, including the incorporation of such issues as capital charges.

Chapter 3 concludes that while there has been significant reform in many Member countries much remains to be done in order to realise efficiency gains. Most importantly, it also makes the point that these efficiency gains may also have positive environmental consequences, an issue taken up in greater depth in Chapter 4.

Some "greener" products cost more than more environmentally-damaging substitutes. In such cases GPP will have cost implications for public authorities. However, this is not always the case, particularly if long-run costs and liabilities are included. The extent to which improved public expenditure management will also result in improved environmental performance is a function of two

factors: A) the cost structure of more environmentally-friendly goods and services procured by public authorities; and, B) the nature of the reforms undertaken.

Chapter 4 argues that in many cases (but by no means all cases), such reforms will result in "win wins", in which environmental benefits and improved public expenditure management can co-exist. The most important benefits are likely to arise from cases in which "greener" investments have high relatively high capital cost / operating cost ratios or significant implications for end-of-life costs. In such cases, budget reforms which result in longer planning horizons and better co-ordination of incentives within public authorities will yield both financial and environmental gains.

At a more modest level, there may also be possibilities for integrating measures which improve financial efficiency within public authorities directly within GPP programmes, without needing to undertake broader public expenditure management reforms. More widespread use of life-cycle costing is one such example, and it has often featured in GPP programmes. Recent innovations such as third-party financing and the use of energy-service companies have also grown in importance.

Even if such measures do not include the costs of environmental externalities, there can be considerable environmental benefits. However, if "shadow prices" associated environmental damages are applied the environmental benefits will be even greater. Indeed, the use of shadow prices is – in the absence of direct emission taxes - one of the most effective means of implementing GPP programmes.

Chapter 3

OVERVIEW OF BUDGET SYSTEMS AND PUBLIC PROCUREMENT IN OECD COUNTRIES

by

Anne C. Richard[1]

Consultant, OECD Environment Directorate

1. Introduction

This chapter is intended to provide background information on whether budget systems and procurement practices provide incentives or barriers to the purchase of environmentally preferable goods and services. The focus of the chapter is on budget and procurement practice in a general sense, rather than their implications for the environmental performance of public procurement. However, by providing an overview of common practice and the extent of reform in public expenditure management, the chapter allows for an analysis of the environmental implications in Chapter 4.

Following this brief introduction, Section 2 provides an overview of standard procurement practices among OECD member and other countries. The paper reviews the types of tenders or bids issued by governments, and the types of contracts used in making awards. It also examines the factors used in selecting contractors and looks at trends in procurement policy.

Section 3 is the core of the chapter, and presents an overview of selected budget and accounting practices now in use in OECD member countries. These practices influence budget decision-making and can affect how and when procurements are made. Central to this discussion is the interest many OECD member countries have demonstrated in making changes to the budget process in line with management reforms. The specific budget areas affected by these types of management reform are highlighted:

- decentralising decision-making about budgets;
- single-year and multi-year budgeting;
- the use of carry over and borrowing against the future;
- the ability to retain efficiency savings;
- separation of capital and current (or operating) expenses;
- accounting practices (cash flow and accrual) for budgeting and financial accounting;
- the use of capital charges; and,

---

1. The views expressed are those of the author and do not necessarily reflect those of the OECD. The author appreciates the guidance and direction of Nick Johnstone of the OECD's Environment Directorate in preparing this document. The author would also like to recognise help and advice provided by Michael Ruffner, Prof. James Chan, Randy Lyon, Michael Honegger, Janet Irwin, Jonathan Pershing and Will Davis.

- discount rate policy.

Section 4 summarises the budget reforms now underway in some OECD member countries in these areas. In Section 5, we review the way budget systems may affect procurement practices and draw conclusions about the extent to which budget and accounting practices serve as barriers to environmentally preferable procurement.

2. Overview of standard procurement practices[2]

Government procurement of goods and services represent an important share of GDP, about 10% excluding employees' compensation. (See Annex II of Chapter 1 in this volume for a review of the available data.) However, total procurement includes procurement made by sub-national governments. In fact, for most OECD member countries, local and sub-national governments procure more than central governments. It is important to remember that sub-national governments usually make procurement decisions independently from each other and do not procure as a bloc. However, while not significant in all, or even many, categories, central government procurement can account for a significant share of procurement in some industry sectors, such as those industries related to national defence (shipbuilding and repairing, aircraft). Moreover, many of these same sectors are also quite significant in environmental terms.

Most procurement officers are looking first and foremost for "value for money", and many governments are driven by the concept that an open, fair and transparent process will allow for competition, and that competition will result in lower prices. In pursuit of value for money, several different types of contracts and different methods of tendering a contract are widely used and these are described below. Practices are built in throughout procurement processes to discourage corrupt practices (e.g., favouritism, collusion, fraud) and to safeguard competition.

The Chief Procurement Adviser to the World Bank recommends the following requirements to any public procurement process:

- value for money, or **economy**;
- process should take minimum time and cost, or administrative **efficiency**;
- business opportunity should be open to all competent suppliers and contractors in the country or region which is providing the funds, or **equal opportunity**;
- **transparency** or openness of process; and,
- a mechanism for **dispute resolution,** i.e., potential suppliers should be able to challenge the award and seek remedies from a court or other independent body.

2.1 Types of tenders and the tendering process

Governments purchase everything from office supplies to airplanes to power generation facilities. But they use different methods to make procurements. While the United Nations, World Bank, WTO and NGOs have developed guidance to make government procurement systems more transparent,[3] there is presently no international harmonisation of procurement methods.

---

2. Much of the discussion of procurement practices in this paper is based on information in Arrowsmith, Linarelli, and Wallace Jr (2000).

3. The reader may want to refer to the following websites. The UNCITRAL model law on procurement of goods and construction (1993) and of goods, construction and services (1994) can be found at: www.uncitral.org; the World Bank has information on procurement (both

There are three types of tenders or bids[4]:

1. Open or unlimited tendering under which all interested suppliers may submit a tender;
2. Selective tendering, under which a subset of potential suppliers are invited to submit a tender; and,
3. Limited tendering, where tenders are sought only from those suppliers contacted individually by the procuring entity. This less regulated form of tender might be appropriate in urgent situations or when the item is of limited value, when a formal competition is not feasible.

Awards procedures vary from formal to much more informal. In a formal process, a detailed description or specification of a desired product or service is written and firms are invited to bid on the contract. There is no discussion between the buyer and the supplier; the contract is awarded on the basis of the written bids. This can be the most transparent type of tendering process. Less formal processes usually involve more communication or negotiation back and forth between the purchaser and the contractors. Requests for Proposals (RFPs), competitive negotiations, and Requests for Quotations (RFQs) are examples of informal methods of procurement. An RFP might set out a general description of what is sought (for example, a computer system) and then invite firms to provide technological solutions. An RFQ is generally used to procure items off-the-shelf, such as standard computer software. Finally, sole-source procurement is the method of procurement most open to abuse (because of lack of competition) but may be preferred if the contractor is following up on work already performed, has exclusive rights to the goods or services, or there is an urgent need for the goods or services. Other rationales put forward to justify sole source procurement vary from national defence to artistic license.

2.2 *Types of contract or award*

One way to describe a contract is by the nature of the specified price: it can be either fixed price or cost reimbursement. A **fixed price contract** sets an amount for fulfilment of the contract, the price is agreed by the parties, and the contractor has an incentive to control costs in order to maximise profits. There are variants of the fixed price contract (See Table 3.1) that allow for adjustments, but the basic concept is that a price is set and the contractor is expected to deliver based on the agreed price. **Cost reimbursement contracts** provide for payment to cover costs incurred by the contractor and are usually used when uncertainties exist and no accurate estimate of costs is possible. Cost reimbursement contracts can be structured by establishing an overall cost ceiling for the work to be performed or good delivered. The drawback to this type of contract is that contractors may not have an incentive to be efficient and keep costs down; if not carefully managed, these types of contracts can lead to over-runs. The different types of contracts within these two broad categories are described in the table.

In discussing these two main types of contracts, a question arises: if a target cost can be estimated as part of a cost reimbursement contract, then why can't a fixed price be determined using the estimated price and a fixed price contract be used? The answer is that there is a "narrow but important sector" of procurement where parties do not have enough information to develop an

---

its own procurement and advice for governments) at www.worldbank.org. WTO information on government procurement is one of several trade topics discussed at www.wto.org and transparency international is an NGO that has focused on transparency in governance, including public spending, and has a website at www.transparency.org.

4. Framework for analysing tenders based on WTO Agreement on Government Procurement (GPA).

estimate for a fixed price with confidence (Arrowsmith et al. 2000). They can, however, develop a reasonable target price and reach agreement on a contract where the risks of miscalculation are shared.

Table 3.1. Types of Contracts Used in Public Procurement[5]

TYPE of CONTRACT	DESCRIPTION
Fixed Price Contracts	
Fixed Price	Sets an amount for fulfilment of the contract. The price is agreed by the parties and the contractor has an incentive to control costs in order to maximise profits.
Firm Fixed Price (or Lump Sum)	Not subject to any adjustment, and primarily used when the cost of the goods or services delivered are well defined and there is minimal risk of cost overruns.
Fixed Price Contract with Adjustment	Allows for changes due to certain special circumstances during contract performance. For example, adjustments could be made based on actual costs of labour or materials, or could be linked to the fluctuating cost of a commodity.
Fixed Price Incentive Contract	Used when some adjustment to final profit and contract price is allowed. Parties negotiate a target cost, a target profit, a price ceiling, and a formula for establishing the actual profit to be paid.
Fixed Price Award Fee	May reward contractor with an additional profit if performance exceeds established criteria. Provides an incentive for superior work that is unrelated to cost, and is appropriate when cost incentives cannot be used.
Fixed Price Re-determinable	Agreement on a firm fixed price is deferred – perhaps because work must begin before solid estimates of cost are known; at various stages of performance the fee may be re-examined and set. Useful in situations where no good estimate can be made until contractor has experience performing contract, but is contrary to general policy to avoid initiating contract before agreement on price.
Cost Reimbursement Contracts	
Cost plus a Percentage of Cost	Reimburses contractor for costs and a fee based on percentage of costs. Rarely used because provides disincentive for economy and leads to inflated costs.
Cost plus Fixed Fee	Reimburses contractor for costs (up to a ceiling) plus a fixed, pre-established fee. May be most widely used form of cost reimbursement contract. Keeps contractor risk to a minimum while protecting the government from paying out windfall profits.
Cost plus Incentive Fee	A form of cost reimbursement contract which builds in an incentive for the contractor to keep costs down. The incentive fee can be based on a maximum price, which, if exceeded, could dig into profits or result in penalties. Alternatively, incentives could arise through the promise of a share of any savings that might result should actual costs come in under a target. Successful use requires negotiating a good target.
Cost plus No Fee	Rarely used. Tend to be used with non-profit organisations or for research and development or for consultancies of modest value.

5. Table based on Arrowsmith, Linarelli, and Wallace Jr. (2000), pp. 370-407.

Table 3.1. Types of Contracts Used in Public Procurement (continued)

TYPE of CONTRACT	DESCRIPTION
Other Types of Contracts	
Indefinite Delivery Contract	Used when the amount and timing of the service to be provided cannot be predicted with accuracy, but purchaser would like to establish a relationship with a set price for the good or service to be delivered. For example, keeping a photocopy repairperson "on call" in case the machine breaks down.
Turnkey or Design Build Contracts	Contractor assumes responsibility for the design, construction, equipment and complete preparation of a facility and, in some cases, the initial operation of the facility, in conformance with an overall plan.
Private Finance (or concession or license arrangements)	Private sector provides the finance for a project; investment is recouped from revenue generated by the asset or related services (e.g., toll road) to the purchaser. Downsides include risk of cost and time overruns that can be a drain on government coffers.

Ordering arrangements can be established under various contract terms and conditions in order to establish a relationship with a supplier or to establish a price to be used in the future. A **framework agreement** establishes prices for the goods or services to be supplied but does not specify the amount to be purchased; this allows for open-ended amounts of a product to be procured at a price that has been locked-in. In governments with a central procurement agency or office, the agency can negotiate discounts with suppliers and advise buyers about products and prices (Pento 1998). The State of California in the United States bids and manages over 670 "Master agreements" and contracts worth over $900 million (California Department of General Services, 2001). Framework agreements have been used widely in Sweden and were monitored by a co-ordinating body (the *Kammarkollegiet*). In the United States, the General Services Administration (GSA) maintains extensive schedules or catalogues of goods, from office supplies to computer systems. Federal Departments buy goods from the catalogues, where the selection and prices have already been contracted between GSA and suppliers. This type of indefinite-delivery contract keeps government stocks low while ensuring that purchasers can get what they need promptly.

2.3 Factors in evaluating offers and selecting contractors

There are two broad categories of factors used in evaluating offers (Arrowsmith et al., 2000). The first category encompasses the fulfilment of the contract, and primarily addresses the quality of the good or service to be provided and the price. The second broad category encompasses the use of contracts to advance public policy (industrial, social, and environmental) goals.

If price is the most important factor, the choice among tenders is simplified and mechanical. Selection based on lowest price is usually used when the purchaser is buying something well defined or off-the-shelf and there is little or no question about whether the good to be provided will meet quality specifications. If the standard for an award is to select the "most advantageous" or "best value" tender, then a variety of factors are considered. The selection of a contract can become both more discretionary and more complex, and takes place only after a technical evaluation process in which these factors are scored and ranked. Examples of quality-related factors include: "delivery date, running costs, cost-effectiveness, quality, aesthetic and functional characteristics, technical merit, after-sales service and technical assistance." (Arrowsmith et al. 2000) The purchaser can also use a

"minimum threshold" or a "low price technically acceptable" approach that sets forth minimal standards that must be met before a tender will be considered.

In the United Kingdom, for example, procurement is based on value for money, which is defined as "the optimum combination of whole life cost and quality (or fitness for purpose) to meet the customer's requirement." The emphasis on whole life costs means that departments are "required to take account of all aspects of cost, including running and disposal costs, as well as initial purchase price" (HM Treasury 1999). Thus, life-cycle costing (also known as whole-of-life costing) is an attempt to put a price tag on the true costs of long-life, complex purchases -- from project inception through development, acquisition, and support to disposal at the end of its useful life, also known as "cradle to grave." Rather than analysing just the initial cost, life cycle cost estimates include:

- the cost of making the purchase or acquisition;
- a prediction of useful life;
- training and other personnel costs;
- cost of consumables;
- maintenance costs;
- operational factors; and
- asset disposal or resale.[6]

Life cycle cost comparisons are not likely to be necessary if the life expectancy of the goods is less than one year or if most of the expenditure occurs in one year. However, life-cycle cost comparisons are "critical when comparing lease-rent-buy alternatives. They are also important for low initial price, high ongoing cost versus high initial price, low ongoing cost options, for example, a solar hot-water system compared with either gas or electricity." (Commonwealth of Australia, Department of Finance and Administration 1996)

A well known method for making cost comparisons and determining whether a government program or procurement can be justified - what some might call a "decision rule" – is net present value (NPV). NPV is computed by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits. Items with different life spans can be compared using equivalent annual value (EAV), which is the NPV discount-averaged over the expected life span of each option to give an equivalent annual value that can be used for comparison. When the NPV is calculated for two options, decision-makers should choose the option with the larger NPV. Projects should not be undertaken if the NPV is less than zero, unless the decision-maker is willing to "lose money" to achieve a non-economic objective.

As noted above, procurement policies sometimes are adopted to pursue "secondary" objectives that are considered after the "primary" objective of using procurement policy to obtain goods and services at advantageous terms. For years, procurement has been used as a tool of industrial policy and developed countries have employed preferential procurement policies to promote domestic industries via government contracts. Traditionally, procurement has favoured domestic suppliers. This "home bias" can also result from tacit discriminatory behaviour that is not codified in written rules. (See Trionfetti 2000 for some empirical evidence.)

6. Commonwealth of Australia, Department of Finance and Administration (1996).

In more recent years, procurement policies have been adopted to address social and environmental goals (but these have had a much smaller impact than policies designed to favour domestic industries). Preference is sometimes given to businesses owned by disadvantaged social and ethnic groups. For example, in South Africa emphasis has been placed on procuring from groups disadvantaged during apartheid. Procurement policy can also promote opportunities for the disabled or the use of prison industries. Beginning in the late 1970s, state and local governments in the United States introduced policies to restrict awarding contracts to companies that do business in or with countries with poor human rights records. More pertinently for this report, environmental criteria (which do not relate directly to lifecycle financial costs) have been included as criteria in many procurement regimes.

If secondary objectives are pursued through procurement policy, then in theory cost-benefit analysis can be used to quantify and assign dollar values to the costs, risks, and benefits of investments (US OMB, 1992). By quantifying costs and benefits, a comparison of the effect proposed approaches will have on society can be made and may help to guide the best decision. Conducting a cost-benefit analysis, however, can be a complex and very expensive undertaking. As such it is only likely to be relevant for the most important types of procurement, such as large infrastructure or works.

Nonetheless, the Canadian Treasury Board indicates that "a sound benefit-cost analysis should be at the heart of every business case presented to senior managers and to ministers." Similarly, in the United States, the Office of Management and Budget calls for benefit-cost analysis to support government decisions to initiate, renew, or expand Federal programs or projects that would result in measurable benefits or costs extending three or more years into the future. Just undertaking the analysis can sometimes be an instructive exercise in understanding the long-term effects of a decision.

The use of secondary procurement goals raises issues of discrimination. According to the OECD, "discriminatory or preferential procurement practices can take several pervasive forms, which can act as protectionist measures, thus limiting import competition and introducing distortions that limit choices, increase prices and discourage economic efficiency." (OECD 2001a) Concerns have been voiced that the use of secondary policies may undermine transparency, a key feature of many procurement processes. The Tokyo Round Agreement on government procurement (GATT Code), which entered into force in January 1981, set forth rules for open and transparent bidding with regard to the purchase of goods by central government entities. The WTO Agreement on Government Procurement (GPA) expanded the disciplines to services and construction work and covers sub-national governments, as well as certain public and regulated private companies. The GPA applies to contracts worth more than specified threshold values. (These issues are explored in Chapters 5 and 6 of the report. They have also been discussed previously in OECD 2001a.)

2.4 Trends in procurement policy

In recent years procurement policy has favoured moving away from a centralised form of government procurement towards more decentralised forms, or some combination of both. Work undertaken jointly by the OECD and EU has noted that over the past 20 years, the purchasing office's functions have been decentralised in most countries (SIGMA, 2000). Some government-owned procurement offices have changed their legal status or been privatised (such as the SKI in Denmark, the NCI in the Netherlands, and the VHK in Finland), and some government ministries or agencies have been freed to make purchases on their own, without going through a central supplier. In the UK, for example, a decentralised approach is used where departments do not have to use central buying agencies for procurement, but are expected to do so when these agencies offer best value for money. Central and Eastern European countries are being encouraged to move from what had been entirely

centralised procurement systems under command economies to decentralised systems. EU member countries have experienced a gradual liberalisation of formerly centralised procurement procedures.

More and more, procurement agencies have to compete with the private sector. The advent of electronic commerce has increased choices for consumers and allows comparing shopping and access to suppliers without intermediaries. At the same time, e-commerce benefits firms wanting to do business with the government. Use of e-commerce in publicising government tenders can help inform suppliers, increase transparency, and help fight corruption. A World Bank case study on Chile illustrates the point: "In the relatively short period that e-procurement system has been established in Chile, substantial savings, creation of a more perfect information market, and increased transparency and accountability are all evident" (Orrego et al., 20000). By conducting public transactions electronically through portals, it is possible to eliminate the physical presence (waiting in line, going to multiple offices) that is often required when conducting business with government. On-line transactions reduce the amount of time needed to complete these transactions and the expenses incurred. These savings allow the government to get better value for its money.

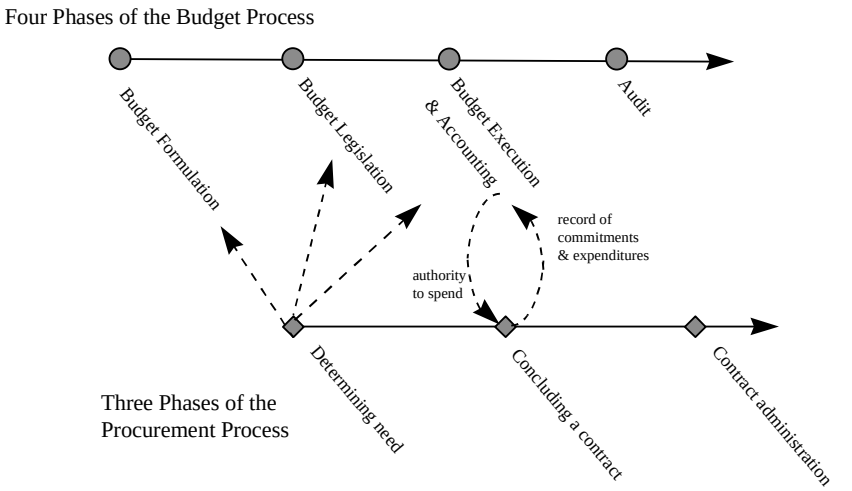
Transparency and probity are increased by publishing government transactions on-line, which provides access to anyone, anywhere, at any time. This reduces opportunities for discretionary use of public funds, increasing the impartiality and integrity of such operations. Additionally, having a traceable electronic record of transactions reduces the opportunities for corrupt practices and increases the accountability of public officials (Orrego et al., 2000).

The combination of the advent of electronic commerce and the trend toward decentralised procurement has resulted in more small purchases being made directly by government consumers using, for example, government purchase cards. The benefits of this arrangement for governments is that money can be saved by making one payment to the purchase card company rather than many payments to thousands of merchants. It also frees up contracting personnel to focus on more complex transactions that require their procurement expertise. The use of purchase cards gives consumers "just-in-time" delivery of supplies and services, while paying contractors quickly. In larger countries, this phenomenon can translate into the dispersal of procurement responsibilities and decision-making among hundreds of thousands of individuals. In the United States, purchase card acquisitions now account for about 5% of all federal purchases (US GAO 2001.) In Canada, more than 25% of employees now have the authority to make purchases of goods and services valued up to $5,000 (Janhager 1995).

3. Budget systems and accounting practices

Figure 3.11 is a diagram representing the four phases of the budget process: formulation, legislation, execution, and audit.

Figure 3.1. Steps in Budget & Procurement Processes



The figure also shows how the three phases of the procurement process relate to the budget process (Arrowsmith et al. 2000.) Planning for a procurement - determining need - can start well in advance of funds becoming available. Ideally, resources for planned procurements should be incorporated into budget estimates during the budget formulation phase. If not included in this early phase, they should be included in budget- estimates as requirements become known. During the legislation and execution phases, budget plans and allocations may be amended to reflect changing procurement needs.

A classic rule of the budget is the annual nature of appropriations (for exceptions, see discussion of carry-over and borrowing, below). Actual procurements usually cannot be made until funding becomes available at the start of the fiscal year. The budget execution phase usually coincides with the fiscal year, plus (in cash-based accounting) a "complementary" period (e.g. 30 or 60 days) after the fiscal year has ended in order to get accounts in order and close the books (Allen and Tommasi, 2001).

Before a contract is let, a "pre-audit" may also take place when procurement officials check legal and contractual provisions. Commitments of funding (such as signing a contract, placing an order) and eventual expenditure of funds for the procurement must in turn be reflected in budgetary accounts (the unreserved fund balance is reduced, and the same amount of fund balance is reserved to make payments; the amount of available appropriation is also reduced).[7]

A well-designed accounting system tracks the use of appropriations at each stage of an expenditure (commitment, verification, and payment) (Allen and Tommasi, 2001). The focus of this paper is on the practices that influence procurement decision-making, and not the post-purchase phases of contract administration (ensuring promised goods or services are delivered, accepting performance, dealing with disputes) or audit (expert examination of legal and financial compliance or performance).

7. Correspondence with Prof. J. Chan, University of Illinois, Chicago.

3.1 Decentralised budgets and managerial accountability

An international trend in budgeting, that dates to the second half of the 1980s, is the desire to shift budgeting from compliance with centrally determined guidance to an emphasis on performance. The trend, spearheaded by innovative governments in Australia, the United Kingdom, New Zealand, Sweden and elsewhere, was and is focused on giving managers the freedom to run their operations as they deem appropriate. Called by different names in different countries (including new public management and results-based or performance-based budgeting), the underlying concept is to use private sector management practices to introduce efficiencies in government services and reap savings in budgets without cutting back on programs. According to Schick (2001) all of the innovators "recognise that transforming operational budgeting requires major changes in the managerial systems within which budgeting is embedded. In contrast to past reforms which sought to change budgeting without regard to public management, recent innovations have been grounded on the presumption that budgeting is a subset of management and cannot be reshaped in isolation from other processes to which it is linked."

The objectives of the Canadian government in adopting a performance-based management culture are illustrative:

- Change the focus of managing and reporting from activities and inputs to impacts and outcomes;
- Make reporting more transparent;
- Promote accountability frameworks that articulate relationships and accountabilities between and within government departments and agencies, other government organisations, etc.; and,
- Report annually to Parliament [and the public] on progress.[8]

In several governments, ministries have or plan to spin off agencies that run somewhat independently of the control of Ministries. In Sweden (where the system of ministries and agencies has been in place for over 200 years) there are 13 small ministries but about 300 agencies of varying sizes, employing collectively 99% of government employees, and run by Director-Generals (OECD, 1998a). In return for managerial flexibility, the Director-Generals are held accountable for results. In the Netherlands, the process of "agencification" is ongoing. The first four agencies were established in 1994 and the total number of agencies will have grown to 23 by January 2003, with another 25 planned for the future. In the Netherlands the agencies publish separate financial accounts and negotiate managerial freedoms with one of 13 parent departments. In addition to increasing managerial autonomy through the creation of agencies, within both ministries and agencies, managers have been given increased financial flexibility as part of global reform efforts (OECD 2001f).

In Mexico, in reaction to budget decision-making centralised at the Federal level and concentrated in the Finance Ministry, an effort is underway to transfer resources and responsibilities to the States, the Federal District, and municipalities. The goal of these efforts is to clarify resource allocation and enhance local government control of resources. In the year 2000, for every peso spent by the Federal Government, local governments will spend 1.49 pesos. The total amount of decentralised expenditure has passed from 3.4 per cent of GDP in 1995 to 7.4 per cent in the year 2000 (OECD 2000b). At the Federal level, ministries and agencies have been granted increased autonomy in managing and allocating their budgets. Reform efforts, however, are still at an early stage and central budget offices continue to maintain overall control of spending decisions (Larre and Bonturi 2001).

---

8. Taken from OECD (1999c), p. 35.

According to Schick (2001), in many OECD countries the relationship between the central budget office and the various departments is changing: "Reformed budget offices are moving away from this system of centralised resource allocation. Reallocation is now promoted by shifting the initiative for proposing policy changes from the centre of government to the spending departments and by encouraging these departments to initiate trade-offs among their programs within prescribed budget constraints." (Schick 1997).

In keeping with this devolution of responsibilities to departments and agencies, there have been moves to eliminate "input controls", or restrictions on a department's ability to choose the right mix of resources to support its work. In Sweden, the last two centrally determined inputs, collective pay bargaining and accommodation (or office space), were abolished in the mid-1990s. Collective bargaining is now totally devolved to the agencies (OECD, 1998a). Central control of personnel policies in the Netherlands has also been somewhat relaxed (OECD, 2001f).

The goal of the trend toward decentralisation is a more efficient use of resources. A side-benefit may be enhanced morale among managers, if they feel empowered with discretion in carrying out their jobs. Possible downsides include the imposition of unrealistic budget cuts by budget offices on the assumption that departments will absorb cuts through unspecified (and perhaps unrealised) management efficiencies.

3.2 *Single-year and multi-year budgeting*

One complaint that has been lodged against modern budget conventions is that the one-year time frame used by most national governments distorts decision-making about budget choices. A recent OECD paper reports, "…annual budgeting may exacerbate the natural short-term focus of political decision-makers and cause authorities to lose sight of future costs of decisions, the best allocation mix, and the appropriate timing of expenditures." (Atkinson and van den Noord 2001)

Single-year budgeting can force perverse government decision-making, both when governments spend less than expected, and when they want to spend more. Guided by the motto "use it or lose it," a spike or binge in end-of-year spending can often occur as the end of the fiscal year approaches and organisations scramble to maintain historic spending levels and avoid losing funding based on lower-than-anticipated actual expenditures. In the military, training exercises can be hastily called in order to deplete stores of ammunition and preserve the rationale for maintaining high levels of procurement. In civilian departments, the end of year can result in purchases of office supplies needed for the following year, or "wish list" items, such as new computers, photocopiers, facsimile machines, televisions or VCRs. One analyst of government spending reports that "in some cases, acquired goods are simply stockpiled, thus generating new expenses and waste management costs." (OECD 2000a)

Strict adherence to one-year budgeting time frames based on historic funding levels also presents challenges when organisations want to make significant investments that represent large, one-time budget increases. Analysts have reported that "agencies can be tempted to use 'camel's nose under the tent' budget tactics that have led to inefficient outcomes. Another, potentially wasteful budget manoeuvre for avoiding spikes is for agencies…to enter into short-term leases rather than to construct or purchase property at the outset – even when the life-cycle cost of the purchase would be lower than the cost of stringing together a series of short-term leases."[9]

9. President's Commission to Study Capital Budgeting (1999), pp. 26-27.

While all OECD countries run on one-year budgets, the budget-planning framework has lengthened as governments move to plan budgets over the medium-term. Many OECD member countries have adopted medium-term budget frameworks for the purposes of planning and to instil budget discipline, force trade-offs within overall budget totals, and cap budget growth. The OECD paper continues: "Medium-term frameworks…aim to anchor annual expenditure appropriations in medium-term projections. They oblige governments to recognise the implications of current budgetary decisions for government finances in the future and to take account of changes in structural and demographic factors and rising government debt levels, as well as the evolving cyclical situations. At the same time, they limit inefficiencies that arise from annual appropriations for multi-year capital projects…" (Atkinson and van den Noord 2001)

In fact, some predict that future budget analysts will regard the medium-term as inadequate for their work, and that governments will lengthen budget time horizons to five or more years (Schick, 2001). In lengthening the time frame, the objectives of budgets move from the operational to the strategic, e.g. recognising previously unnoticed growth trends in expenditures.

3.3 Carry over, borrowing against the future, and keeping savings

In addition to multi-year planning, some governments have adopted practices that build more flexibility into the budget than would be allowed under strict adherence to a single year budget. These practices include the ability to carry over funds from one fiscal year to the next and to pre-spend a portion of the next year's budget. According to one analyst, "several local authorities and agencies have introduced a mechanism by which 50 per cent of savings [achieved during the fiscal year] can be kept and re-allocated by the originators from one budget year to the next." (OECD 2000a) In a recent OECD survey, 21 of 27 member countries responding reported that it is possible to carry over unused appropriations for operating costs from one year into another and 24 of the 27 reported that funding for investments can be carried over (OECD, 2001d). About half of these countries reported a maximum amount or limit to the amount that can be carried over -- for example, in Canada, Ireland, Korea and Norway it is up to five per cent of an appropriation for operating expenses. In some countries, carry over is automatic; in other countries the ability to carry over funding must be approved by the finance ministry or the legislature (or both) on a case-by-case basis or in a supplementary or following year's budget. Mexico uses a different practice to build flexibility into the budget: annual appropriations do not expire at the end of the fiscal year, but are valid for three months into the next year.

One third of respondents to the OECD budget survey reported that it is permissible for managers of ministries or agencies to borrow against future appropriations for operating expenses and/or for investments in capital. Most countries that allow for such borrowing limit the amount that can be borrowed. In the Netherlands, one per cent of total expenditures (operating budgets and capital) can be transferred between one year and another. In Sweden up to 3% of the following year's appropriations can be borrowed, but this is rarely used (OECD, 1998a). In several countries, "spending flexibility is regulated by allowing agencies to earn interest on funds carried forward and charging interest on pre-spent funds." (OECD 1997a)

In Sweden, efficiency gains in agencies can be retained and carried over into the following year. "Without the carry-forward option, it was considered that managers would not have sufficient incentives for seeking efficiency gains in their operations." (OECD 1998a.). A related issue concerns funding allocations that undermine good management because managers do not see any savings that might result from their actions. According to a 1999 OECD report: "the budget structure in some government departments means that savings in operating costs do not flow back to the Department which made the capital investments, but rather to a building leasing company or a Department of Public Works. Until changes are made to this arrangement, it will continue to be difficult to

encourage departments and agencies to make capital investments, even if such investments meet larger energy and environmental goals." (OECD 1999d.) In some countries, reforms have been undertaken to ensure that ministries are charged for the full extent of services and assets they use.

3.4 Separation of capital and current expenses

Some governments budget separately for capital improvements and operating expenses. Capital items are fixed assets, such as buildings, equipment, and other infrastructure improvements.[10] A capital budget usually includes funding for the acquisition, construction, and repair of capital assets. The national governments of very few OECD countries have a capital budget. Sweden, Denmark, and the Netherlands had capital budgets at one time but no longer do; New Zealand and the United Kingdom presently employ different forms of capital budgeting. While the federal government in the United States does not maintain a capital budget separate from the operating budget, most of the state governments do. In fact, in the United States, "most firms in the private sector, as well as many state and local governments, recognise the importance of capital expenditures by making decisions about them separately from decisions about how much to spend on annual operating expenses."[11] Funds for a capital budget can be financed from a different source, primarily bonds, dedicated taxes, fees and trust fund proceeds.

Budgetary accounting looks to the future and estimates the costs of planned acquisitions. The cost of any government decision to use productive resources is the full value of the alternatives that must be sacrificed to undertake the chosen action (O'Neill, 1998). For this reason, and because the decision to use resources is irreversible, some budget experts recommend recognising the full costs of government expenditures on capital investments up front in the budget. Benefits from the acquisition can be expected to materialise over time, and an estimate of benefits should be analysed when comparing policy or procurement alternatives. But benefits can be difficult to quantify and track. A national budget normally only tracks the financial *costs* of an acquisition.

In the private sector, the costs of capital investment are routinely depreciated and written off over a number of years. In contrast to budgetary accounting, financial accounting looks at past financial activity, and may allocate revenues and costs of an acquisition over the course of its useful lifetime. The Director of the Congressional Budget Office in the United States has argued against estimating depreciation for national government capital investments, noting that "changing the budgetary costs of an expenditure from total cost to estimated depreciation would weaken efforts to discipline the federal draw on private resources." She further warns that it would, "displace an objective measure with a subjective one, whose imprecise character would make it a convenient target for manipulation and distortion."

Do budget conventions distort decisions about the relative weight of capital and current spending? Is spending for operating expenses easier to obtain than for capital investment, or vice versa? These questions are of practical importance for the efficiency of resource allocation. Perhaps more importantly, the separation of budgeting for capital and operating costs, may be linked to the extent to which decisions related to the two budget items are taken separately. The issue then arises of split incentives, with those undertaking investments not accounting for the implications on operating costs of other departments.

---

10. This paper uses the term "capital" to fixed assets and physical infrastructure. Different organizations use different definitions of capital. A broader definition might embrace all government investment that produces returns over time, and this could include research and development, education and training, etc.

11. President's Commission to Study Capital Budgeting (1999), p. 3.

In the United States, the President's Commission to Study Capital Budgeting found no clear evidence that current budget conventions fostered a bias against capital spending. However, they did raise a concern that insufficient attention is paid to the long-run consequences of budget decisions.[12] They identified examples where failure to fund capital projects fully in advance led to substantial wasteful spending when projects were cancelled before completion (e.g., cancellation of construction of a super-conducting super-collider). They also found that budget limits or caps were biased against maintenance expenditures. Both routine and major maintenance, such as rehabilitation and remodelling, tend to spend money (or outlay) faster than investment in new construction. When budget caps constrain expenditures, it is easier to budget for the slow-spending start of new construction than to budget for annual maintenance. And while the Federal government provides funding to state and local governments for new capital projects, there is presently no follow-up to determine if state and local governments are properly maintaining the completed projects.

In New Zealand, where accrual-based budgeting and accounting is used (see below), operating flows are reported in an operating statement while capital flows are reflected in a balance sheet. Operating and capital cash flows are separately reported in a statement of cash flows. These different reports serve different purposes, and taken together provide a series of indicators to measure the Government's financial performance. The operating statements indicate whether the government is running a surplus or a deficit. The cash flow statements provide financial markets with a measure of the financial implications of government activity. These reports provide greater transparency as to the fiscal position and medium-term financial trends of the Government of New Zealand (Troup, 1998). The operating statement of each department of the New Zealand Government is required to include the depreciation cost associated with its assets. This means that departments cannot run down their assets by failing to maintain or replace them. While depreciation is recorded in financial statements, departments are required to fully account for all of their costs up front in the budget or, to "allocate all of their costs across their outputs." (Troup 1998) The issue of accrual accounting is discussed below.

Under the New Zealand system, expensive capital projects are still problematic to fund and requests for additional resources must be justified to the Finance Ministry on the basis of "a sound business case". The Department's proposal must be presented in the context of a medium-term business plan, which focuses on the demand for the department's outputs and the efficiency of the department's operations in their entirety. But making a strong case would be necessary for any request - not just capital-intensive ones.

In the United Kingdom, a new distinction is being drawn between current and capital spending, in part to prevent capital investment from being cut back to meet short-term pressures on operating budgets and in part to meet fiscal rules under the new financial framework.

3.5 Accounting practices

Budget systems generally record expenditures on a cash basis. Cash-based systems recognise transactions when cash has been received or paid, and report them during the period in which they occur. The cash system focuses on the flow of cash. It has two important advantages: it is

---

12. They also found evidence of what they termed "micro-biases." Capital spending, they reported citing Congressional Budget Office analysis, is inefficiently allocated among projects. Reviewing the available studies of the measured economic returns from different activities, they found a very large variation, "from programs that have produced estimated social returns in excess of the cost of capital, to those that are producing almost no positive returns." President's Commission to Study Capital Budgeting (1999), p. 27.

easy to apply and simple to explain (OECD, 1995). There is no need for a separate accounting system as accounting data can come directly from payroll and other readily available records. There is no carry-over of assets or liabilities from one period to the next and there is no need to make assumptions about future transactions.

That said, traditional cash accounting could mis-state the true cost of carrying out government programs. It can lead to a misleading picture of commitments when payments are accelerated or deferred. It can also assign costs "to the wrong activity or the wrong time period, such as when managers consume centrally-provided maintenance, printing or automotive services at no cost to their budgets. These 'free goods' distort the allocation of public resources and drain managers of incentives to be efficient." (OECD 1995) Cash-based budgeting can also misstate the costs of government loans (overstating the costs of loans when they are issued and understating their cost if they are defaulted or forgiven) (OECD, 1995). In addition, the introduction of accrual accounting should mean a more even balance between current and capital expenditures. Because both types of expenditures will be treated in terms of costs, unbiased consideration should be possible.

The concept behind accrual accounting[13] is that revenue and costs are recognised when the initial transactions occur (as they are earned or incurred) and not as money is received or paid. Accrual systems take into account that a business entity's or government ministry's life extends into the future, beyond the current period, and thus recognises commitments that have been made but have yet to be completed. Accrual accounting can introduce some clarity to financial statements by recognising expenses as they occur, highlighting the values of assets (and thus leading to improved maintenance of these assets in order to protect their value), and more comprehensive recording of liabilities (OECD, 1997b). This can provide a more accurate picture of the real financial health of an enterprise. In preparing financial statements for an accounting period using accrual accounting, however, there will inevitably be some estimation and uncertainty with respect to the transactions, so these statements will not be a perfect mirror of financial status (Dictionary of Business, 1996).

According to the OECD "full attribution of costs requires far-reaching modifications in accounting systems including the breakdown of the budget into cost/responsibility centres – discrete activities that can be held accountable for the work they perform and the resources they spend, as well as distinctions between fixed and variable costs and the development of other cost measures that allow units of input to be directly linked to units of output." (OECD 1995)

Such a system has been introduced and developed in New Zealand and Australia, and is underway in a number of other countries (see Table 3.2). The World Bank and the International Monetary Fund have also shown increasing interest in record-keeping based on the accrual accounting system, in line with their goals of improving transparency and promoting good governance (Hogendoorn et al. 2001). In New Zealand, reform of the public sector has included a shift from cash-based to accrual accounting. Costs are attributed to the programs or accounts where they are incurred and are "charged" to the outputs they purchase. One benefit is that managers have considerable flexibility in determining the appropriate use of resources. On the other hand, managers are under pressure to produce outputs as efficiently as possible, or the government will be able to compare costs with and consider procuring from alternative suppliers (OECD 1995).

13. According to the Applied Fiscal Research Center (AFReC) of South Africa, accrual accounting is also known as "resource accounting", "wealth accounting", and "comprehensive accounting" in different countries.

Table 3.2. Extent of Adoption of Accrual Practices in OECD countries

Budget	Financial Statements (Consolidated, Whole of Government)
Full Accrual Basis • Australia • New Zealand • Italy (also Full Cash Basis) • United Kingdom (eff. FY2001-02)	Full Accrual Basis • Australia • Finland • Greece • Italy • New Zealand • Sweden • United States
Full Accrual Basis, Except No Capitalisation and Depreciation of Assets • Canada • Finland (exc. Transfers) • Iceland	Full Accrual Basis, Except No Capitalisation and Depreciation of Assets • Canada • Iceland
Cash Basis, Except Certain Transactions on Accrual Basis • Denmark • United States	Cash Basis, Except Certain Transactions on Accrual Basis • Denmark • France • Poland
Plans to Introduce Full Accrual Budgeting • Canada • Korea • Netherlands • Sweden • Switzerland	Departmental/Agency Level Reports Only • The Netherlands • Portugal • Switzerland
Supplementary Accrual Information to Cash Basis Budget • Denmark • Germany • Portugal	Supplementary Accrual Information Only • Belgium • Germany • Hungary • Ireland

Source: OECD/PUMA

3.6 Capital charges

Of 27 respondents to the OECD budget survey, six member countries (Australia, Greece, the Netherlands, New Zealand, Switzerland, and the United Kingdom) report that they impose a charge on individual government organisations for using capital assets in order to capture the government's financing costs associated with ownership of those assets (Troup 1998)

The New Zealand system forces departments to recognise the opportunity costs of capital. Twice a year, departments must pay a "capital charge" to the Treasury. Departments budget for these charges and seek funding for them from Parliament. The charge is essentially an internal transfer, however, and does not show up in financial reports.

The charge is calculated as a percentage of the department's capital base. The "default" rate for the capital charge is currently set at 11%, although some departments have negotiated lower rates. The levy of the charge acts as an incentive for departments to minimise their capital base and not to hoard capital. Coupled with a trend to delegate decision-making to managers, the charge has resulted in the implementation of business-like decisions. For example, surplus assets have been sold to

finance computer upgrades. An increasing tendency has been observed to use rented accommodations than to own and maintain property (Troup 1998).

In the United Kingdom, one of the reasons for the introduction of accrual accounting is to improve asset management. The imposition of a capital charge as part of the reforms has led to creating a list and assigning a value to government properties, and considering whether it is really necessary to retain some properties. Campgrounds owned by the Ministry of Defence, for example, have been sold as a result of the new system (Hogendoorn et al. 2001).

In the United States, the President's *Commission to Study Capital Budgeting* recommended an experiment that stops short of adopting a separate capital budget but is intended to improve government budget and planning processes. The Commissioners called for the establishment of a separate "capital acquisition fund" (CAF) in those government agencies that had capital-intensive operations. The CAFs would be financed with borrowing from the Treasury. The accounts would then collect rental payments from users of the assets sufficient to repay interest and principal to the Treasury. The Commissioners believe that "if units or divisions within agencies are charged the true costs of their space and other large capital items, they are likely to make more efficient use of those assets."[14]

3.7 Discounting and discount rate policy

Determination of the central government's discount rate policy is a basic economic policy choice that affects a broad range of analyses. Discount rates are factored in when budget analysts consider options for a major procurement or program (such as when calculating net present value or making a cost-benefit analysis, both discussed above).

Typically, benefits and costs are worth more to people if they are experienced sooner. All future benefits and costs resulting from a policy or procurement decision should be discounted in order to transform gains and losses occurring in different time periods to a common unit of measurement (US OMB 1992). In other words, discounting addresses the time value of money, also called a time preference. (Discounting is different from and should not be confused with adjustments for inflation, which should reflect changes in purchasing power over time.) There is general agreement among economists that discount rates ought to represent "the opportunity costs of forgoing investment elsewhere in the economy or of delaying consumer gratification."(US CBO 1998)[15]

Different ministries and offices within the same government may use different discount rates in assessments of investments. Sometimes there are reasons underpinning the use of different rates based on the type of analysis being undertaken; sometimes the reasons for using different rates are not clear.

For example, different rates are used by three economic arms of the US Government: the US Office of Management and Budget (OMB), the General Accounting Office (GAO) and the

---

14. President's Commission to Study Capital Budgeting (1999), p. 32-33.

15. Most economic analyses using a single discount rate are predicated on the assumption that all individuals discount at the same rate and that this rate of interest is observable in the market. But research shows that these assumptions are not always borne out in practice. Different people may discount at different rates; real consumers behave differently than textbook models. For example, if the individuals are poor, "the discount rate that reflects their time preference is likely to be high – they will value immediate benefits because they have basic needs that are unmet." Treasury Board of Canada Secretariat (1998).

Congressional Budget Office (CBO). OMB generally uses 7 per cent (in real dollars); GAO tends to base its discount rate on the government's cost of borrowing. Even within each of these offices, different rates are used depending on the purpose of the analysis, e.g. analysing asset sales, considering policies with intergenerational effects involving human life, conducting cost effectiveness analyses, etc. Many federal departments do not discount at all. (See Bazelon and Smetters 1999 and Lyon 1990.)

The higher the discount rate, the lower is the present value of future cash flows. The Treasury Board of Canada Secretariat (1998) found that "most projects look good at a 5 per cent discount rate and poor at a 15 per cent discount rate" and recommends use of a 10 per cent rate (in real dollars). Use of low discount rates can make capital seem less expensive, encourage investment in larger and longer term projects and prompt purchase (rather than leasing) of assets. Higher discount rates favour more cautious investment and labour-intensive, rather than capital-intensive, investments.

4. The extent of budget reform in the OECD

A review of OECD literature on budget systems, accounting practices, and related issues reveals that there is an overall trend among reformist governments toward improved public expenditure management. Steps are being taken to increase transparency in how finances are handled and to link the provision of funds to government performance.

In the area of budgets, reforms are being undertaken with vigour by a number of countries. These reforms include adoption of medium-term spending plans (with some kind of enforcement mechanisms to instil fiscal discipline and tightly monitor overall government spending) and improved fiscal transparency. While the specific approaches may vary from country to country, the overall approach is toward decentralising decision-making and giving public managers flexibility in how they spend money, so long as they deliver a desired outcome. Budget reforms also extend to the finances and operations of public sector entities that may operate outside the usual budget process.

Reformers are moving away from centralised decision-making on the allocation of resources. The initiative for proposing policy changes is shifting "from the centre of government to the spending departments and [by] encouraging these departments to initiate trade-offs within their programs within prescribed budget constraints." (Schick 1997) The central budget office remains responsible for enforcing overall budget limits over the medium-term, reviewing trade-offs made at the margins of annual budgets, and focusing on public sector productivity by improving the ability of the government to measure the volume and cost of government outputs.

Performance monitoring is seen as one way to manage budgets better. Use of performance indicators for specific programs can provide feedback on program implementation and delivery of services to the public. Performance measurement can be used for "organisational learning" and as an instrument for managerial accountability. But poor use of performance measurement can lead to pitfalls such as fixation on the measures at the expense of quality service.

The trend in budgeting also has an impact on accounting techniques used by governments. "The tighter the relationship between budgets and performance, the greater the need for cost accounting methods that allocate the full cost of services to outputs. Given the primitive state of cost accounting in many countries, full cost attribution is not currently feasible." (OECD 1997a) Reforms presently being pursued in the accounting area also focus on improving fiscal transparency, and using accounting systems that provide an accurate picture of the impact of the government's activities on its overall financial positions.

The adoption of accrual budgeting and accounting techniques by governments is seen as one way to improve fiscal transparency. Since 1992, the OECD has undertaken significant work on the role of accruals in budget and financial reporting. Most recently, in November 2000 a major symposium was held on accrual accounting and budgeting. While there remains no consensus among Member countries about the appropriate role for accruals and discussions continue as to the merits of applying accruals to budgeting, there is evidence that an "ever-growing number of Member countries are adopting accruals, to one degree or another." (OECD 2001e) The fact that accrual accounting is being adopted *to one degree or another* also means, however, that it is being fully adopted in very few places (e.g., New Zealand and Australia); most countries are only taking small steps to adopt some features of accrual systems. Accrual accounting, moreover, is very difficult and complex to implement. For many countries, more work needs to be done to improve cash-based budgets before embarking on a path to adopt the far more complex accrual budgeting and accounting techniques.[16]

Thus it appears that some budget, procurement, and accounting conventions in a number of OECD countries have at times distorted decision-making about the optimal use of resources. The neglect of routine maintenance of existing capital assets in response to tight spending caps is one example mentioned earlier. Budget allocations and practices that prevent managers from seeing the full cost of their operations is another. Many of the reforms discussed above can help budget, procurement and accounting systems run more efficiently and effectively.

Some of the trends and reforms we have discussed, however, while helpful in those countries where they have been adopted and appear to work (such as New Zealand and Australia), are not for everyone. Without appropriate budget, accounting, and financial control processes, flexible budget practices such as authority to carry-over or pre-spend funds could lead to confusion or mismanagement.[17] Some countries would do well to get their fiscal houses in order by making more basic improvements in financial management before adopting full-blown accrual accounting practices as part of sweeping management reforms. Indeed, some reforming countries, such as Canada, have decided to phase in reforms gradually, pilot testing reform models over a longer time period, rather than adopting massive changes (OECD 1999c).

5. Environmental implications

This paper has discussed the government procurement market, standard procurement practices, and also examined government budget and accounting practices and reforms. We now consider whether the practices described above, particularly the reforms being pursued by some governments, are barriers to procurement, specifically environmentally friendly or "green" procurement by governments. (These issues will be taken up in greater depth in Chapter 4.)

What are the potential environmental implications of the issues this report has addressed? Some of the reforms discussed above will make greener purchasing more likely. Examples include:

---

16. In fact, "Member countries that have embarked, or are embarking, on accruals emphasised that this was not merely a change in technical accounting conventions, but a fundamental shift in how the government operates and that the reforms should not be seen in isolation but rather as part of wider system reforms, focusing on results-orientation and management flexibility." OECD (2001e), p. 5.

17. See discussion of budget appropriation management rules in Allen and Tommasi (2001), p. 217-221.

- Emphasis in procurement on selecting products based not on lowest price but rather on value for money, with whole life cost factored into consideration of a tender, may help insert some types of environmental considerations into procurement decisions.
- Decentralising management and budget responsibilities to departments and agencies, while holding managers accountable, ensures that decisions will be made by those who are well informed about requirements and have an incentive to achieve them efficiently. Government managers who see ways to conserve resources will have the ability and incentive to do something about it, and should face fewer barriers in implementation, so long as they can demonstrate that savings will be achieved.
- Budget rules that allow for use of carry-over, borrowing from future years, and retention of efficiency savings can give managers the flexibility they need to invest wisely and at the right pace, and to make smart trade-offs among resource inputs.
- Medium and longer-term budgeting should help in the procurement of some environmentally preferable products. Those products that have high up front costs but reap savings over time will be viewed as more affordable when their costs are factored into multi-year budget plans.
- Accrual accounting methods capture future costs when purchase decisions are made, which can help present the true long-term costs of those decisions. These methods also highlight the value of assets, which could lead to improved maintenance of assets to protect their value.
- Capital charges may lead departments to recognise the operating cost of capital and to sell unused properties and to make more efficient use of assets.

However, it must be recognised that some public expenditure management reforms will make green purchasing more difficult. For instance, decentralisation of the functions of the central purchasing office, to the point where government purchase cards are used widely, will assign procurement duties to thousands of government workers who may go outside traditional government purchasing offices to buy their products. Intermediaries at central purchasing offices who might be well positioned to select or encourage greater use of environmentally-friendly goods and services may no longer be as influential in the procurement process. This decentralisation of authority, however, will mostly be for routine and smaller purchases. Similarly, decentralisation of management and budget decision-making responsibilities to departments and agencies means that it may be harder to control the extent to which environmental considerations are incorporated in the planning stages for decisions about major investments.

Proper and active use of current practices, such as cost-benefit analysis for major procurements, innovative use of private finance (such as energy savings performance contracts), and use of centrally-negotiated framework agreements that offer pre-selected, environmentally friendly products to departments and agencies at affordable, pre-determined prices could prove to be fruitful in encouraging environmentally preferable procurement.

Of all the budget and procurement practices currently in use, the ones that appear to hold the most promise for green procurement is greater utilisation of life-cycle costing coupled with multi-year budget frameworks. Because of the traditionally short time frames for politics and budgeting, insufficient attention has been paid to the long-term consequences of budget decisions. Many budget and procurement professionals lack the time, the training and the data to carry out fully these types of analyses. More resources within departments and central budget offices need to be devoted to systematic evaluations before resource decisions are made. And policy decisions, and subsequent guidance, to incorporate environmental effects have to come from top-down in order to clarify that the costs to the environment must be factored into long-term analysis and to ensure uniformity in approach.

A previous OECD report has called for improved accounting and budgeting mechanisms as part of a new set of tools aimed "at favouring environmentally preferable choices *without burdening the procurement officers*" (emphasis added). (OECD 2000a) This report argues that procurement officers will continue to be well placed to influence procurement of green goods and services by virtue of their knowledge, expertise, and the central role they play in budget execution. Even in those governments that are decentralising procurement decisions and authorising many more government buyers, procurement specialists can help to negotiate beneficial framework agreements and produce catalogues of pre-approved products for procurement.

Others have pointed out that the burden on procurement officers could be lessened by equipping them with information tools, such as information about product content, alternative products, and an easy-to-understand assessment of environmental characteristics of products. Examples of how this information could be provided include:

- develop and distribute effective training programs, guides, and information tools for procurement experts and government consumers;
- make identification and selection of products easier through more widespread use of eco-labels and catalogues;
- involve environmental staff and experts in review of proposed procurements;
- foster partnerships among offices and governments to share best practices, avoid duplication of effort and purchase in groups; and,
- develop and improve databanks that provide information on life-cycle costs, in a usable form for non-experts.

All of the steps recommended above could be taken without changes in budget or accounting conventions, but might have greater impact in governments that are open to management reforms and have high standards of transparency, accountability, and performance.

The chief conclusion is that while government budget and accounting conventions can present hurdles to procurement generally and green procurement more specifically, they do not need to be insurmountable barriers. Rather than sweeping changes in budget and accounting techniques, more use of existing techniques to analyse costs over the long term and make a solid case to budget officers for the long-term benefits and efficiency of smart purchases are needed.

REFERENCES

ALLEN, RICHARD AND TOMMASI, DANIEL, editors (2001). *Managing Public Expenditure: A Reference Book for Transition Countries* (Paris: OECD).

APPLIED FISCAL RESEARCH CENTER (AFReC). (Pty) Ltd. (2000). Draft Briefing Report, International Accrual Accounting and Budgeting Symposium, 13-14 November 2000, OECD/Ministry of Finance, Paris. (Affiliated to the University of Cape Town)

ARNOLD, FRANK S., SUSSMAN, FRANCES G., AND DECK, LELAND B. (1997). "Discounting in Environmental Policy Evaluation" US Environmental Protection Agency, Washington, D.C..

ARROWSMITH, SUE, LINARELLI, JOHN AND WALLACE, JR., DON (2000). *Regulating Public Procurement: National and International Perspectives* (The Hague: Kluwer Law International).

ATKINSON, PAUL AND VAN DEN NOORD, PAUL (2001). "Managing Public Expenditure: Some Emerging Policy Issues and a Framework for Analysis" OECD Economics Department Working Papers No. 285 (ECO/WKP (2001)11).

BAZELON, COLEMAN AND SMETTERS, KENT (1999). "Discounting Inside the Washington D.C. Beltway" in *Journal of Economic Perspectives*, Vol. 13, No. 4: pp. 213-228.

BLONDAL, JON (2000). "Overview of Accrual Practices in OECD Member Countries", International Accrual Accounting and Budgeting Symposium, Paris, France, 13 November, (Powerpoint slideshow).

CALIFORNIA DEPARTMENT OF GENERAL SERVICES (2001). "Welcome to Master Agreements and Statewide Contracts" Procurement Division, Sacramento, California, USA. Available at www.pd.dgs.ca.gov/acqui/maumain.asp

COMMISSION OF THE EUROPEAN COMMUNITIES (2001). "Green Paper on Integrated Product Policy" European Commission, Brussels, 07.02.2001 (COM (2001)68).

COMMONWEALTH OF AUSTRALIA, DEPARTMENT OF FINANCE AND ADMINISTRATION (1996). "Whole-of-life costing in the assessment of value for money," Australian Government Publishing Service, Canberra, Australia, May.

CONGRESSIONAL BUDGET OFFICE (1998). "The Economic Effects of Federal Spending on Infrastructure and Other Investments" CBO, Washington, D.C..

DICTIONARY OF BUSINESS (1996). Oxford University Press, Market House Books Ltd.

FRANCOIS, JOSEPH F., NELSON, DOUGLAS AND PALMETER, N. DAVID (1996). "Public Procurement: A Post-Uruguay Round Perspective" Centre for Economic Policy Research Discussion Paper No. 1412, London.

HM TREASURY (1999). "Environmental Issues in Purchasing," Note by the Treasury and DETR, London. Available at http://www.hm-treasury.gov.uk/docs/1999/envte2.html

HOGENDOORN, C., KOK, L. AND VON OOSTEROOM, R. (2001). "The Die is Cast: A Comprehensive Accrual Accounting System for the Central Government of the Netherlands", Ministry of Finance, The Hague, The Netherlands.

INVESTOPEDIA.COM (2000). (http://www.investopedia.com).

JANHAGER, STEFAN (1995). "Procurement Profile: National Capital Region", Administrative Directorate, Environment Canada, 29 November. Cited in: "Towards Greener Government Procurement: An Environment Canada Case Study" prepared by Environment Canada Corporate Services and included in T. Russel (ed.) d *Greener Purchasing: Opportunities and Innovations* (Sheffield: Greenleaf Publishing).

JOHNSTONE, NICK, KATRIN ERDLENBRUCH AND KASPAR MÜLLER (2003). "The Implications of Budget Systems for the Environmental Characteristics of Public Procurement" Chapter 4 in this volume.

KILPATRICK, ROBERT W. (2000). "The Application of Accruals: Budgeting vs. Financial Reporting", U.S. Office of Management and Budget, Washington D.C..

KOPP, RAYMOND J., KRUPNICK, ALAN J. AND TOMAN, MICHAEL (1997). "Cost Benefit Analysis and Regulatory Reform: An Assessment of the Science and the Art", RFF Discussion Paper 97-19, Resources for the Future, Washington, D.C..

LARRE, BENEDICTE AND BONTURI, MARCOS (2001). "Public Spending in Mexico: How to Enhance Its Effectiveness" OECD Economics Department Working Papers No. 288, (ECO/WKP (2001)14).

LYON, RANDOLPH M. (1990). "Federal Discount Rate Policy, the Shadow Price of Capital, and Challenges for Reforms" in *Journal of Environmental Economics and Management*, Vol. 18, S-29-S-50.

OECD (2001a). "Government Procurement: A Synthesis Report", OECD Trade Directorate, Trade Committee, TD/TC/WP (2001)17/REV1.

OECD (2001b). "Main Issues: 22nd Annual Meeting of Senior Budget Officials", OECD Public Management Service (PUMA/SBO (2001)2)17.

OECD (2001c). "The OECD Survey of Budgeting Developments – Country Responses", OECD Public Management Service (PUMA/ SBO (2001)3/ANN1).

OECD (2001d). "The OECD Budgeting Data Base", OECD Public Management Service (PUMA/SBO(2001)3/ANN2).

OECD (2001e). "OECD's Work on Budgeting: 2000-2001 Annual Report of the Working Party of Senior Budget Officials", OECD Public Management Service (PUMA/ SBO (2001)9).

OECD (2001f). "Budgeting and Management in the Netherlands", OECD Public Management Service (PUMA/SBO (2001)6).

OECD (2000a). *Greener Public Purchasing: Issues and Practical Solutions* (Paris: OECD).

OECD (2000b). "The OECD Survey of Budgeting Developments – Country Summaries" OECD Public Management Service (PUMA/ SBO (2000)2/ANN2).

OECD (2000c). "The OECD Survey of Budgeting Developments - Results" OECD Public Management Service (PUMA/SBO (2000)2/ANN1).

OECD (2000d). "Accrual Accounting and Budgeting Practices in Member Countries: Overview" OECD Public Management Service (PUMA/SB)(2000)11/REV3).

OECD (1999a). "Modern Financial Management Practices" OECD Public Management Service (PUMA/SBO (98)8/FINAL).

OECD (1999b). "The OECD Survey of Budgeting Developments – Country Responses" OECD Public Management Service (PUMA/SBO (1999)2/ANN2), 21 May.

OECD (1999c). "Budgeting in Canada" OECD Public Management Service (PUMA/SBO (1999)5/FINAL).

OECD (1999d). "Government Purchasing of Climate-Friendly Technologies" in OECD/DSTI, *Science and Technology Industry Review* No. 25 (Special Issue on Sustainable Development).

OECD (1998a). "Budgeting in Sweden" OECD Public Management Service (PUMA/SBO (98)5/REV1).

OECD (1998b). The OECD Survey of Budgeting Developments – Country Responses (PUMA/SBO (98)3/ANN), 22 May.

OECD (1997a). *Modern Budgeting* (Paris: OECD).

OECD, (1997b). "Budgeting for the Future", OECD Public Management Service (OCDE/GD (97)178).

OECD, (1997c). "Accrual Accounting in the Public Sector" OECD Public Management Service (PUMA/ SBO (97)8).

OECD (1995). *Budgeting for Results: Perspectives on Public Expenditure Management* (Paris: OECD).

O'NEILL, JUNE E. (1998). Statement of CBO Director June E. O'Neill before the President's Commission to Study Capital Budgeting, Washington, D.C., USA, 24 April.

ORREGO, CLAUDIO, WITH OSORIO, CARLOS AND MARDONES, RODRIGO (2000). "Chile's Government Procurement E-System", World Bank Group, Governance & Public Sector Reform Sites, E-Government, Washington, D.C., USA, December 14. Available at http://www.worldbank.org

PENTO, TAPIO (1998). "Implementation of Public Green Procurement Programmes" in T. Russel (ed.) *Greener Purchasing: Opportunities and Innovations* (Sheffield: Greenleaf Publishing).

POLISH OFFICE OF PUBLIC PROCUREMENT (2000). “Brief Description of the Public Procurement System in Poland”, Warsaw, Poland. Available at http://www.uzp.gov.pl/english/booklet.html

PRESIDENT’S COMMISSION TO STUDY CAPITAL BUDGETING (1999). "Report of the President’s Commission to Study Capital Budgeting" Washington D.C., February.

SCHICK, ALLEN (2001). "Does Budgeting Have a Future?" (PUMA/SBO (2001)4), OECD, Paris, 4 May.

SCHICK, ALLEN (1997). "The Changing Role of the Central Budget Office" (OCDE/ GD (97)109), OECD, Paris.

SIGMA (2000). "Centralised and Decentralised Public Procurement" (CCNM/SIGMA/PUMA (2000)108), Paris, 25 October. Available at http://www1.oecd.gov/puma/sigmaweb

TREASURY BOARD OF CANADA SECRETARIAT (1998). *Benefit-Cost Analysis Guide* (Ottawa: Treasury Board).

TRIONFETTI, FEDERICO (2000). “Discriminatory Public Procurement and International Trade” in *The World Economy*, Vol. 23, No. 1: 57-76.

TROUP, GEORGE (1998). “Capital Budgeting in the New Zealand Government”, Testimony to the Presidential Commission to Study Capital Budgeting, New York, USA, 8 May.

U.S. ENVIRONMENTAL PROTECTION AGENCY (2000). “Energy Savings Performance Contracts”, Office of Pollution Prevention and Toxics, Washington D.C., USA. Available at http://www.epa.gov/oppt/epp/ppg/case/espc.htm

U.S. ENVIRONMENTAL PROTECTION AGENCY (1999). *A Guidebook of Financial Tools*, “Section 6: Tools for Lowering Costs”, Environmental Financial Advisory Board and Environmental Finance Center Network, Washington, D.C., USA. Available at: www.epa.gov/efinpage/guidbk98/gbk6.htm

U.S. GENERAL ACCOUNTING OFFICE (2001). "Federal Procurement: Better Guidance and Monitoring Needed to Assess Purchases of Environmentally Friendly Products" GAO-01-430, Washington, D.C., USA, June.

U.S. OFFICE OF MANAGEMENT AND BUDGET (2000). "OMB Memo on FAR Implementation of Greening the Government Executive Orders" Washington, D.C., USA, 12 July.

U.S. OFFICE OF MANAGEMENT AND BUDGET (1992). Circular No. A-94 Revised, “Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs” Washington, D.C., USA, 29 October.

Chapter 4

THE IMPLICATIONS OF BUDGET SYSTEMS FOR THE ENVIRONMENTAL CHARACTERISTICS OF PUBLIC PROCUREMENT

by

Nick Johnstone, Katrin Erdlenbruch**, and Kaspar Müller****[1]

* National Policies Division, OECD Environment Directorate,
** Institut National de la Recherche Agronomique (Montpellier), and
*** Ellipson Consulting (Basel)

1. Introduction

This chapter reviews the potential effects of public expenditure management on the environmental characteristics of goods and services purchased by public authorities. It builds on the discussion in Chapter 3, which reviewed procurement practices, budget systems and accounting practices in OECD member countries.

The focus of the chapter is on synergies between budget reform, accounting and financial practices, and improvements in the environmental characteristics of procurement. It makes the case that environmental benefits can be the incidental by-product of improvements in budgetary systems, and accounting and financial practices. As such, the chapter is a complement to the chapters which focus on intentional and explicit "greening" of public purchasing: Chapter 1 discusses the role of GPP as an explicit environmental policy instrument; and Chapter 2 assesses their efficiency and effectiveness in practice.

Following this brief introduction, Section 2 provides an overview of some of the types of "cost structures" which characterise "environmentally-preferable" goods and services likely to be purchased by public authorities. These examples are primarily illustrative, but they serve to highlight the importance of the issues discussed in subsequent sections. Section 3 reviews some of the main budgetary, financial and accounting issues which are likely to affect the environmental characteristics of procurement, drawing upon Chapter 3 and linking them with the discussion in Section 2.

Following from this, Section 4 discusses some of the budgetary, financial and accounting issues which arise with the explicit internalisation of environmental externalities in public procurement. This is distinct from the discussion in Section 3 where the environmental effects are

1 . The views expressed in this chapter are those of the authors and do not necessarily reflect those of the institutes with which they are affiliated or the OECD.

unintentional by-products of budgetary, financial and accounting systems. Section 5 provides a brief conclusion.

2. Comparing the cost structure of brown and green procurements

The cost structure of procurements is a crucial factor in the decision whether to invest in environmentally preferable goods and services or in other goods and services. The next section looks at three examples to illustrate this.

In the examples, lifecycle costs (LCC) will be calculated for various relatively polluting ("brown") investments (base case) in comparison with alternative environmentally preferable ("green") investments. The examples relate to small- or medium-sized purchases of goods and services. This focus is due to the fact that many larger investments (i.e. public works) will be subject to cost-benefit analyses for which the issues related to budget, financial and accounting concerns are less relevant, and for which environmental concerns are (or should be) addressed explicitly in the investment decision.

In all cases the alternative investments can be considered to be approximately equivalent in terms of functional attributes. This is important since a comparison of LCCs for two qualitatively different investments is not very helpful. For instance, comparing LCCs of petrol-powered vehicles with LCCs of electric vehicles is only valid if distribution networks for the two types of vehicles are comparable, or if the vehicles are used for purposes in which this is not an important consideration.

2.1 Alternative HVAC systems

The first example relates to alternative choices with respect to a building's heating, ventilation, and air conditioning (HVAC) system. A public authority is faced with a choice between a standard "brown" technology and an alternative "green" technology, in which energy-efficiency savings yield environmental benefits in terms of reduced greenhouse gases and other air pollutants. The importance of these environmental benefits will, of course, depend upon the fuel mix in the electricity supply industry.

The alternatives are valued over a 20-year period, with a real discount rate of 3% applied. In both cases, a fan needs to be replaced before the estimated obsolescence of the system itself. Capital costs and operations and maintenance costs (O&M costs) for the "green technology" are higher. However, energy consumption is markedly lower. In addition, the salvage value of the "green" investment (after 20 years) is also slightly higher (see Table 4.1. The example is taken from Fuller and Petersen, 1996).

On this basis, the "green" technology would be chosen since it has a LCC of $431,739 relative to $514,488 for the "brown" technology. Indeed, the real discount rate would have to rise to almost 90% for the "brown" technology to have a lower LCC than the "green" technology. However, the result also depends on the price of energy. The real price of electricity would have to fall from the assumed cost of $0.08/kWh to below $0.02/kWh in order for the "brown" investment to be favoured. Similarly, the length of the planning horizon would have to be shortened considerably to between 1 and 2 years for the "brown" investment to be favoured.

Table 4.1. LCC Evaluation of Alternative HVAC Systems ($US)

	Base Date Cost	Year of Occurrence	Discount Factor (3% inflation & 6% nom discount rate)2	Present Value
Base Case HVAC Technology				
Investment Cost	103,000	Base Year	1.00	103000
Fan Replacement	12,000	12	0.71	8503
Residual Value	-3,500	20	0.56	-1971
Electricity	20,000	Annual	15.00	299968
O&M costs	7,000	Annual	15.00	104989
Total LCC				514488
Alternative "Green" HVAC Technology				
Investment Cost	110,000	Base Year	1.00	110000
Fan Replacement	12,500	12	0.71	8857
Residual Value	-3,700	20	0.56	-2084
Electricity	13,000	Annual	15.00	194979
O&M costs	8,000	Annual	15.00	119987
Total LCC				431739
Source: Fuller and Siegelinde (1995)				

2.2 *Alternative pest management strategies*

Pest control in city parks and schoolyards can represent a significant cost expenditure for public authorities. Using "integrated pest management" strategies, rather than methods which rely upon the application of chemical pesticides, can result in significant environmental and health benefits. The environmental benefits arise from reduced exposure. There can also be ambient environmental benefits in terms of water pollution and other impacts, although this will depend upon local environmental conditions. (see EPA 1993.)

In many cases, IPM can also result in cost savings, although the evidence is ambiguous. (See Webber (2001) for an empirical study of IPM in California schools, and Smith and Raupp (1986) for general landscaping.) In any event, the cost structure is very different. In general IPM results in significant up-front expenditures such as landscaping, training and other costs. It is also much more labour-intensive, particularly for monitoring costs. However, it can also result in significant savings in terms of pesticide costs.

2. The discount factor for a one-time cost is equal to: $1/(1+r)^t$

For a recurring annual cost the discount factor is equal to: $((1+r)^n - 1)/(r*(1+r)^n)$

For a recurring annual cost that changes from year to year at a constant rate, e, the discount factor is equal to: (1+e)/(r-e) [1-((1+e)/1+r)^n)]

Table 4.2. LCC Evaluation of Alternative Pest Management Strategies ($US)

	Base Date Cost	Year of Occurrence	Discount Factor (3% inflation & 6% nom discount rate)	Present Value
Base Case "Cover Spray" Application				
Investment Cost	5,000	Base Year	1.00	5000
Pesticides	7,970	Annual	15.00	119537
Monitoring	0	Annual	15.00	0
Other Labour	2,500	Annual	15.00	37496
Total				162033
Alternative "Green" Integrated Pest Management				
Investment Cost	10,000	Base Year	1.00	10000
Pesticides	3,583	Annual	15.00	53739
Monitoring	2,642	Annual	15.00	39626
Other Labour	2,500	Annual	15.00	37496
Total				139806
Sources: Smith and Raup (1986); Brenner (1997); EPA (1993).				

Table 4.2 provides some cost data derived from Smith and Raupp (1986), comparing expenditures for pesiticide-intensive "cover spraying" relative to more selective IPM for community-owned trees and other landscape plants. (Unfortunately the study only provides data on monitoring and pesticide costs. Relative capital costs and other labour costs are derived from EPA 1993 and Brenner 1997. However, these latter figures are mainly illustrative since these publications provide qualitative information about cost structures, rather than precise figures. Nonetheless, the majority of costs are attributable to pesticide application and monitoring.)

In the example IPM strategies have a cost advantage in terms of lifecycle costs, despite higher initial costs. Relatively small changes in the cost of labour relative to pesticides are the key to the choice of technology. If the relative price of chemical pesticides decreases by 20%, then the "green" IPM technology will no longer be favoured. As will be discussed below, this has key implications for the environmental effects arising from the extent of input flexibility granted departmental and agency managers.

2.3 *Alternative carpeting*

Purchasing carpets involves the choice of alternative carpet materials, ranging from nylon and PET to wool for the carpet itself, and involving different carpet glues. This example concerns the choice between a wool broadloom and a recycled PET broadloom. It is taken from the Building for Environment and Economic Sustainability (BEES) programme, a database and cost-calculator for building material which was set up by the US National Institute of Standards and Technology.

The BEES programme identifies various environmental impacts related to the use of building materials, such as resource depletion and water- land- and air-pollution. This includes the global warming potential, acidification and eutrophication potential of products, as well as their impacts on indoor air quality and solid waste generation. All impacts are computed over the life cycle of the products, using mass and energy contributions to product systems as well as product prices as impact-indicators. All data flows are normalised to a functional unit then classified according to the nature and scale of the impact they trigger. This leads eventually to a set of indices, which are obtained by weighting each classified flow by its relative contribution to the specific environmental impact.

As noted, in this example, a wool broadloom and recycled a recycled PET broadloom are compared. The wool broadloom is supposed to be applied with a standard glue, the recycled PET broadloom with a low VOC glue, transport distances for delivery and other parameters are identical. The potential environmental impacts of the two examples are given in Table 4.3.

Table 4.3. Environmental Impacts from Different Types of Carpets

Potential Environmental Impacts	Units[3]	Wool Broadloom	Recycled PET Broadloom
Acidification	H+	0.2202	0.3722
Eutrophication	PO4	0.4964	1.0676
Global Warming	CO2	10233	2188
Indoor Air Quality	Pts	42	31
Resource Depletion	Index	0.1497	0.0669
Solid Waste	ft3	0.09	0.22

The recycled PET carpet outperforms the wool carpet with respect to climate change impacts, indoor air quality and in terms of resource depletion. However, it performs worse in terms of acidification, eutrophication and solid waste generation. The question arises then, which carpet should be considered as being the "green" one. This depends upon the weights which society places on different environmental impacts. These weights can be chosen in different ways: On the one hand, BEES allows the user, i.e. the procurement officer, to define them. On the other hand, the programme also suggests two alternative sets of weights, which are the outcome of two studies: one by the EPA's Scientific Advisory Board, and the other by a team at Harvard University (Norberg-Bohm et al. 1992).

In this example, the recycled PET broadloom will be considered to be "greener" than the wool broadloom. This is because the overall environmental performance of the PET carpet is better than the one of the green broadloom, whether applying the EPA weights, the Harvard weights, or using equal weights for the environmental impacts.

The cost structure of the considered investment is given in the following table. The "green" recycled PET carpet has lower capital costs but higher operating costs than the "environment intensive" wool carpet. This is why, to a great extent, this is the opposite example of the HVAC example, where the "green" investment had a higher initial cost, but lower running costs.

If the procurement officer only takes initial capital costs into account, he/she will decide in favour of the recycled PET broadloom (which is the "green" product) as it is less expensive ($3.28 per unit, compared to $7.67 per unit). However, if he/she considers operating and replacement costs, given as a stream of future costs which are discounted at a 3% real discount rate, he/she will choose the wool broadloom, thus, the "brown" product (as $11.41<$14.16).

Indeed, he will favour the "brown" product for all nominal discount rates below 12.6% (which approximately corresponds to a real discount rate of 9.5%). Only if the real discount rate were higher than 9.5%, the procurement officer would change his decision and choose the recycled broadloom, which is the "green" product.

3. All environmental impacts are measured relative to the functional unit (1 ft^2 (0.09 m^2) over 50 years: acidification in terms of hydrogen equivalents (grams); global warming in CO_2 equivalents (grams), eutrophication in terms of phosphate equivalents (grams). The resource depletion index reflects remaining years of use and reserve size; the solid waste factor the volumes to landfill (cubic yards). The indoor air quality factor is measured as a dimensionless score based upon epidemiological studies.

Table 4.4. LCC Evaluation of Carpeting Alternatives ($US)

	Base Date Cost (per ft²)	Year of Occurrence	Discount Factor (3%inflation, 6% nom discnt rate)	Present Value
Base Case: Wool Broadloom Carpet				
Investment Cost	7.67	Base Year	1.00	7.67
Replacement Cost	7.67	25	0.49	3.74
Total				11.41
Recycled PET "Green" Carpet				
Investment Cost	3.28	Base Year	1.00	3.28
Replacement Cost	3.28	5	0.87	2.84
Replacement Cost	3.28	10	0.75	2.46
Replacement Cost	3.28	15	0.65	2.13
Replacement Cost	3.28	20	0.56	1.85
Replacement Cost	3.28	25	0.49	1.60
Total				14.16

However, if there were only three replacements for the recycled carpet (and one for the wool carpet, as before), the "green" carpet would always be preferred to the wool carpet. This can be seen in Table 4.5.

In this case, even without any discounting, the "green" carpet would be preferred, as its total costs at a 0% discount rate were $19.71 and the total costs of the wool carpet were $23.73. This shows that the investment decision also depends on the use that is made of the respective product. If the "green" carpet is resistant to frequent use, it will have to be replaced less often and this renders the investment more interesting. However, the original data indicates more frequent replacements for the PET carpet and then, high operating costs make the investment in the "green" carpet less interesting.

Table 4.5. LCC Evaluation of Carpeting Alternatives 2($US)

	Base Date Cost (per ft²)	Year of Occurrence	Discount Factor (3%inflation, 6% nom discnt rate)	Present Value
Base Case: Wool Broadloom Carpet				
Investment Cost	7.67	Base Year	1.00	7.67
Replacement Cost	7.67	25	0.49	3.74
Total				11.41
Recycled PET "Green" Carpet				
Investment Cost	3.28	Base Year	1.00	3.28
Replacement Cost	3.28	8.33	0.79	2.58
Replacement Cost	3.28	16.66	0.62	2.03
Replacement Cost	3.28	25	0.49	1.60
Total				9.50

3. The implications of budget systems and procurement practices for the environmental characteristics of public procurement

On the basis of the discussion in Chapter 3, a number of elements of budget systems were identified as being potentially significant barriers to the efficient allocation of public resources. As pointed out in the introduction, some of these may also have important environmental implications.

Indeed, it will be argued in this section that there are at least some areas in which there is potential for budget reform to result in both more efficient use of public funds, and improved environmental characteristics of procurement. Thus budget reform can lead to "win-win" situations, although they will not always do so. Indeed, some budget reforms may result in more efficient public expenditure management, but increased environmental impacts. Whether or not this is the case is largely a function of the relationship between the budgetary issue to be addressed and the relative cost structures of the "green" and "brown" alternatives. Six distinct, but closely related issues, will be explored.

3.1 Foreshortened planning horizons

As noted in Chapter 3, historical reliance on single-year budgeting procedures has resulted in an inefficient "dynamic" use of funds within public authorities. However, as was noted there have been reforms in this area, with greater use of medium-term and long-term budget frameworks. Allied to this there has also been greater allowance for the use of "carry-over" and "pre-spend" budgetary provisions at the level of the department or agency which is actually undertaking public procurement. Thus, the problem of "foreshortened planning horizons" has been lessened to a great extent.

This is likely to result in significant environmental gains in those areas in which "green" investments have relatively higher capital costs but lower operating costs than their "brown" alternatives. Examples include various energy-saving types of equipment (HVAC, energy-efficient lighting) and water-saving equipment. For instance, if public authorities are able to "pre-spend" some of the budget which has been agreed will be allocated to them in future years, they are more likely to choose investments which are more costly in the first instance, but which have lower LCC over their lifetime (or at least the planning horizon).[4] Similarly, if they can "carry over" some funds from previous years they may be better able to finance low LCC investments in the future through current savings.

This presumes, however, that they are aware of such opportunities - which is largely dependent upon whether or not lifecycle costing is applied when purchasing decisions are made. Thus, even if appropriate incentives are in place, there may not be an appropriate behavioural response if the necessary information is not generated. (See Sorrel, 2000; and Schleich and Böde, 2000, for evidence in the university sector in the UK and Germany.)

Assuming that both conditions are satisfied this may generate important environmental benefits, due to the close association between the financial and environmental benefits associated with reduced energy use. On the other hand, in cases where the "green" investment has lower initial costs but higher operating costs then the introduction of longer budget horizons at the level of the purchasing agent may inadvertently result in more environmentally-damaging procurement strategies. (The carpeting example might provide a good illustration.)

3.2 Split departmental responsibility for operating and capital costs

The existence of split departmental responsibilities has similar consequences to foreshortened time horizons for investments, in so far as inadequate attention is paid to operating and disposal costs when procurement decisions are taken. Since the department or agency responsible for procuring a particular piece of capital equipment has little incentive to reduce operating costs or take

---

4. In any event due to cost uncertainty and other forms of uncertainty, optimal planning horizons will never be infinite.

disposal costs into account which are incurred by another department or agency, they will focus on initial capital costs. (This issue is discussed in Jaffe et al. 2000.)

Thus, one would expect to find similar effects as above with energy-saving and water-saving investments, involving high initial costs being prejudiced.) (See Eppel, 1999, for a discussion concerning energy-related investments.) Indeed, arguably the problem is even greater than in the case where planning horizons are foreshortened, since in that instance the department or agency will still have incentives to reduce lifecycle costs within the time constraint imposed by the foreshortened planning horizon. Thus, there may be cases in which split departmental responsibilities will result in an even greater bias than foreshortened planning horizons.

This distinction can be highlighted by thinking of an example in which a public authority has to choose between single-, double-, and triple-glazing for a new office building. Assume that an LCC analysis indicates that triple-glazing should be chosen. However, in the case where a single authority has responsibility for both capital and operating costs, but there is a binding constraint on initial costs due to a foreshortened planning horizon, then they may well be forced to choose double-glazing because there are insufficient funds available to purchase triple-glazing. However, with split departmental responsibilities (i.e. the department bears investment costs but energy costs are borne by a central fund) then they may well even choose single-glazing since they have no incentive whatsoever to reduce operating costs.

3.3 Inadequate managerial responsibility for operating costs

Closely related to the two previous points is the usual practice of not attributing responsibility for operating costs directly to the relevant operational level. In environmental terms this is particularly important in the case of energy and water use, but also other cases such as paper consumption in administrative offices. When operating costs are borne by a central fund rather than the managers who are able to exercise influence over the means by which energy-using and water-using are used, then there are incentives to use them inefficiently.

This is distinct from the effects which arise in the previous two cases, which are largely concerned with incentives for the purchase of efficient equipment. In this case, there will be inefficient "use" of the equipment, even if the appropriate procurement decision is made. The example of energy-efficient motor vehicles is illustrative. If the procurement officer is not constrained by a foreshortened planning horizon, s/he is likely to choose the vehicle with lowest "assumed" LCC, thus potentially resulting in reduced energy use and associated pollution emissions.

However, in the absence of managerial responsibility for operating costs the users of the vehicles (or those responsible for use patterns) will have few incentives to use them efficiently. No effort will be made to reduce fuel consumption by reducing the number of trips or increasing load charges. Arguably, this is even more significant than an inappropriate purchase decision since in many cases the lifecycle environmental impacts are greatest in the use phase. Moreover, if the operational incentives are sufficiently weak then this may even result in a reversal of technology choices with the "low" LCC investment proving to have higher lifetime costs.

Some empirical evidence of the importance of these issues is reported in the aforementioned studies undertaken in Germany, Ireland and the UK on energy efficiency in the higher education sector. For instance, in the survey of UK universities it was found that charging departments for energy use was a significant determinant of adoptions of energy-efficient technologies. (Sorrell et al 2001) Indeed of the 21 potental reasons for "non-adoption", non-accountability for energy costs ranked fifth in terms of perceived importance, behind "other priorities for capital investment", "strict adherence to capital budgets", "lack of capital" and "lack of time/other priorities". Similar results are

found in the German study (Schleich and Böde 2000), although the study does not treat the data formally.[5]

3.4 Accounting systems and future liabilities

One of the main advantages of the use of accrual (or cost) accounting rather than cash accounting systems is that accrual accounting procedures will reflect the future costs arising from purchase decisions which are taken today. While initially applied by public authorities to better account for the implications of policies and programmes with implications for future expenditures (i.e. social security systems and pension schemes), such accounting procedures also have environmental implications.

For instance, an investment which has significant implications for the level of future costs associated with resource use will be assessed more accurately. This has already been discussed with reference to some of the purchase decisions described in Section 2, and the effects will be alleviated to the extent that planning horizons are not foreshortened in the manner described above. However, such accounting systems would also be better able to reflect the ultimate disposal costs associated with different pieces of long-lived machinery. Ideally, an accrual accounting system would take account of future costs associated with "decommissioning" arising from current investment in nuclear power plants.

Returning to the example of the HVAC system above - if the "green" system had much higher disposal costs (say, for instance, due to the use of toxic substances as refrigerants in the cooling system) then the "residual" cost would be positive (rather than revenue from salvage) and may result in a higher LCC than for the "brown" system. Disposal costs will more than counterbalance financial benefits from energy savings. This example illustrates the danger of using payback periods as a means of assessing alternative investments.

3.5 Costing of physical assets

In addition to improved accounting for potential future operating costs, disposal costs, and environmental liabilities, the introduction of accrual accounting systems should also result in more efficient use of capital assets. In particular, the use of capital charging regimes within accrual accounting systems help public authorities to assess the opportunity costs of buying and retaining fixed assets, such as buildings. This too, can have environmental implications, although the effects are ambiguous.

On the one hand, the use of capital charging regimes serves to correct a historical bias which has favoured capital-intensive investments and the retention of fixed assets. Thus, in the absence of capital charging regimes, public authorities would favour investments with high capital cost/operating cost ratios. Arguably, then, the introduction of capital charging regimes would discourage investments in more expensive energy-saving equipment of the sort described above. In this case, therefore, there is no "win win". Improved public finance procedures can have negative environmental consequences by removing a policy failure which incidentally served as a break on environmental damage.

---

5. In the Irish study (Trace et al. 2000), there were no cases of universities making departments accountable, so there is no basis for comparison.

On the other hand, the use of capital charging regimes may have positive environmental consequences. For instance, by discouraging inefficient public sector construction and infrastructure projects, capital charging is likely to reduce the environmental impacts associated with further development of the built environment. It may also result in greater use of leasing arrangements as the opportunity cost of capital assets rises. This would favour strategies such as the carpet leasing example discussed above.

3.6 Flexibility in choice of inputs and retention of savings

If departmental managers are flexible in the choice of inputs (and not only the point in time where they can purchase particular inputs) and if they are able to retain financial savings from a different purchase decision e.g. from investments in environmental improvements, there can be significant environmental gains.

As has pointed out in Chapter 3, the degree of flexibility enjoyed by departmental managers with respect to choice of inputs has increased in recent years. This has arisen because of the general devolution of responsibility for control over budgets. Moreover, even in countries where this is not the case, various budget line items have been "aggregated up", implicitly allowing for greater substitution of inputs within the broader cost categories.

For instance, in their study of German universities Schleich and Böde (2000) report that recent changes which allow for the use for other purposes of financial savings due to improved energy efficiency, have created incentives for better environmental performance. Similarly, in Canada, the Center for Inland Waters in Burlington was able to retain financial savings arising from energy efficiency and water-savings investments (see Russel 1998).

However, there is one area where strict limits continue to be placed on expenditures - employment costs. In an effort to control growth in public sector employment, many countries have placed strict limits on additional hiring of staff. In some cases, this may result in inappropriate choice of technology, with adverse environmental implications. For instance, if environmental protection and labour expenses are complementary, then restrictions on employment expenditures may result in technology choices which are environmentally-damaging. One example, discussed above is the use of "integrated pest management" in schoolyards and city parks, rather than standard pesticide-intensive pest management practices (EPA, 1993).

4. Specific financial tools to improve the environmental characteristics of public procurment

Most, but by no means all, of the examples cited above are "win wins" in which improved budget and accounting systems result in both improved efficiency in the use of public funds and improved environmental performance of public authorities. In a sense, the environmental benefits are the incidental "fall-out" from improved public finance management. Thus, public expenditure management reforms should in most cases (but not always) result in improved environmental performance of government operations.

However, there are some issues which are explicitly "environmental" in nature which will not arise out of general improvements in budgetary systems. Clearly, a general tightening in the regulatory system (whether through performance standards, environmental taxes, etc….) will affect the environmental characteristics of the procurement of public authorities, as well as that of private firms and households. This does not need to be explored. However, there are several particular issues directly related to budget, financial and accounting issues which do need to be discussed:

- Use of shadow prices in evaluations of investment to reflect non-monetised environmental externalities;

- The use of environmental liability and the extent to which public authorities are granted "sovereign" immunity;

- Using "adjusted" discount rates applied in the evaluation of environmental costs and benefits; and,

- The use of outsourcing, third party financing and other instruments to overcome capital shortness and bounded rationality.

These issues are closely related to one another and will be addressed in turn in the following sub-sections.

4.1 Introducing shadow prices to reflect environmental externalities

In Section 3 the "external" nature of environmental impacts was left implicit. In effect, most of the synergies between reform of budgetary and accounting systems and environmental impacts were coincidental. This arises from the fact that many adverse environmental impacts are associated with the use of resources which are priced in markets, irrespective of the regulatory regime in place. However, we are primarily concerned with addressing environmental externalities directly and not just the incidental environmental benefits associated with reduced use of marketed resources. "Win wins" of the sort described above can get us part of the way toward improved environmental performance of public authorities, but they can never get us all of the way.

How then, should such externalities be addressed in the specific context of "greener public purchasing"? In the presence of an ideal regulatory and budgetary system the question is, to a certain extent, moot. Public authorities will be required to "cost" externalities in their decision-making as would firms or households. This would allow selecting goods and services in a more objective way than before, as monetary values would be attributed to environmental benefits and damages. Improvements would arise irrespective of the nature of the regulatory regime applied - i.e. technology-based, performance-based, economic instruments, etc.

However, three points need to be made in this regard. Firstly, there are a number of studies which have found that public authorities tend to be worse environmental performers than private firms. For instance, DeCanio (1998) finds that American public authorities require a higher rate of return than firms before they will invest in energy efficiency improvements. OECD (2001) reviews some of the other available evidence, which confirms this point. This is often attributed to a widespread perception that publicly-owned agencies are less likely to be penalised for non-compliance than private firms.

Secondly, in many cases public authorities may be exempted from the application of fiscal instruments such as environmentally-related taxes. Indeed, the OECD database on "Economic Instruments" lists a large number of examples of public authorities in different OECD Member countries which are not required to pay taxes which private firms or households are required to pay. (See www.oecd.org/env/tax-database for relevant examples.)

Thirdly, even if public authorities are not exempted, in cases where "flexible" instruments (emission taxes or tradable permits) are applied, in the presence of the kind of budgetary and accounting failures described above, public authorities may face few incentives to improve their environmental performance. For instance, if departmental managers at the operational level have few

incentives to reduce operating costs, they will not do so, whether or not the cost arises from energy prices or carbon taxes. In the presence of a "soft budget" constraint, measures which are designed to realise their environmental objectives through price effects will have little impact. In such cases, performance-based or technology-based standards would be more effective than price based policies.

Thus, in addition to the realisation of win-wins through the removal of budgetary failures of the sort described above, is there anything that public authorities can do to further "green" its purchasing above and beyond regulatory requirements for all actors (public authorities, private firms, households) in the economy? For larger projects, there may be relatively little that needs to be done beyond the consistent application of cost-benefit analyses, which should result in the appropriate choice of technology, reflecting both environmental and financial costs and benefits. This could include the application of life cycle assessment, which describes the environmental impacts of production and recycling processes of different products. These impacts could then be "costed" and included in the environmental assessment. However, LCA is not a necessary requirement for the internalisation of environmental costs.

More generally, a public authority can encourage (or mandate) that procurement officers use a "shadow price" equal to the marginal cost of the environmental damages generated (i.e. equal to the marginal cost of emissions that would emerge from the correct environmental policy if it were in place). Switzerland has done just this, and this is likely to be a preferred route where it can be used. In such cases, procurement should be consistent with that which would be the case in the presence of an ideal regulatory system. Moreover, there will be no need for public authorities to "pick winners", with all of the difficulties that this entails.

However, it is important to note that while the introduction of such a shadow price will encourage procurement officers to purchase more environmentally-friendly goods, unlike the effects of a real charge, tax or permit it will not provide incentives for increased efficiency in their use. As noted, if these effects are important enough then they may outweigh the environmental benefits arising from the procurement decision.

4.2 *Applying liability regimes in order to reflect financial risks associated with procurement with potential environmental damages*

The need to assess the future resource use and disposal cost implications of investment decisions has been discussed in Section 3 above. Less obviously, a good investment appraisal and accrual accounting procedure should also reflect the implications of future expenditures which are less easily "costed", due to their uncertain probabilistic nature. Some of these cases are closely associated with environmental issues, and depend crucially upon the nature of prevailing liability regimes - some liability regimes can encourage environmentally-preferable procurement by increasing the risks associated with potentially damaging investments. In effect, environmental liability is the "ex post" equivalent to "ex ante" regulatory or economic environmental policies.

For instance, the "potential" cost implications of liability associated with investments which result in increased hazardous solid waste generation should be captured by appropriate accrual accounting procedures. However, in such cases, the assessment of future costs is very uncertain. Given the level of uncertainty it is difficult to assign precise figures to potential future costs. Similarly, in the example cited above, it is possible that lawsuits may be brought against schools in cases where the application of chemical pesticides resulted in health damages to school children. School boards may come to assess these potential costs, even if there is no regulatory requirement for the use of IPM.

However, it must be noted that in many OECD countries, public authorities grant themselves some form of immunity from liability ("sovereign immunity"). For instance, in the United

States some states exempt themselves from the possibility of being sued for negligent behaviour,[6] including behaviour which results in adverse environmental impacts and for which private firms would be held liable for equivalent behaviour. In Canada, publicly-owned nuclear energy facilities have their liability capped, implicitly subsiding nuclear power and favouring its use relative to other sources. (See Heyes and Liston-Heyes, 2000.) In the European Union, states are liable if they breach "primary obligation", a much more restricted test than that which private firms can be held liable (see Bergkamp, 2001).[7]

4.3 Adjusting discount rates for procurements with environmental impacts

One of the most controversial areas in environmental economics relates to "discounting". The existence of a positive discount rate means that a resource consumed today has greater value than a resource consumed in the future. There are good reasons to support such a view (see Beckerman 1993, Pearce *et al.*, 1990, for discussions). [8] However, it is argued by some that discount rates applied are too high and that this has a pernicious effect on the environment generally.[9] In the area of public procurement, such a view would lead to the recommendation that lower discount rates be applied in the evaluation of investments with significant environmental implications.

This is not the right context in which to review all the debates on discounting and the choice of discount rate, not least because the focus of our report is much more specific – i.e. implications for public procurement. However, it is important to note that even at a pragmatic level there is no reason to expect that the use of a lower discount rate will necessarily generate environmental improvements. This can be illustrated with specific reference to public procurement. On the one hand, as we have seen whether or not the use of lower discount rates results in the *substitution* of "greener" goods and services for "browner" ones depends crucially upon relative cost structures. On the other hand, adverse *scale* effects may arise from the use of lower discount rates due to the positive effect that it would have on investment and development generally.

Take, for example, a cost-benefit analysis of public expenditures on a hydroelectric facility. (See Table 4.6. This example is taken from Common, 1996.) As can be seen, the effect of lowering the discount rate from 5% to 3% increases the valuation of the environmental (wilderness recreation) and health (mortality reduction) benefits. However, the direct financial benefits (principally due to coal savings arising from the fact that an alternative generating facility does not need to be built) rises by an even greater amount. As such, by lowering the discount rate, there is greater likelihood that the facility will be approved. Of course, if the public authority places greater value on the associated GHG

---

6. See Clain (1994) for an empirical analysis of the effect that "sovereign immunity" has on road safety.

7. Although Bergkamp (2001) advocates that private firms' liability should be reformed to be consistent with state liability, rather than vice versa.

8. There are two main justifications for such a belief: pure time preference and the opportunity cost of capital. Pure time preference reflects the widespread observation that people tend to be impatient, effectively placing a higher value on today than tomorrow. Indeed, empirical studies related to various types of consumer behaviour bear this out very consistently. The opportunity cost of capital arises from the fact that investments undertaken today tend to bear a positive rate of return, and as such there is a cost associated with consuming resources today which could have been profitably invested, generating greater streams of consumption possibilities in the future.

9. Indeed, some dismiss the idea of discounting altogether on ethical grounds (See Parfit 1983).

reductions than on wildlife conservation, this may be environmentally preferable. However, there is no reason to believe that this will always be the case.

Table 4.6. Evaluation of Hydroelectric Dam Project with Alternative Discount Rates ($US)

	Construction & Removal	Wilderness Recreation	Coal Savings	Mortality Reduction	NPV
r = 5%	925.7	21.0	1478.3	117.0	648.6
r = 3%	977.8	34.3	2562.8	174.3	1725.0
% increase	6.0	64.0	73.0	49.0	166.0

In this example the discount rate for all costs and benefits have been reduced, and not just those related to environmental costs and benefits. Is there a case to be made for only reducing the discount rate on such costs and benefits? In effect, this would be dependent upon the assumption that the "value" of environmental quality is rising through time relatively more quickly than other things. This may well be a reasonable assumption, not least since environmental quality is in some sense in "fixed supply" while other elements in the analysis are not.

However, it is usually argued that these issues are best addressed by changing future environmental benefits and costs directly, and not the rate at which they are discounted. The task of valuing the environment and the task of determining the discount rate are separate, and should be kept separate. Using one factor to "correct" for another factor can be arbitrary and result in potentially unexpected consequences. (See Arnold and Sussman, 1997.)

However, there may be cases in which an adjustment in the discount rate is appropriate. In particular, for long-lived environmental impacts (i.e. stock pollutants such as carbon dioxide or irreversible changes to natural landscapes) which have intergenerational impacts it may be inappropriate to use prevailing discount rates - which reflect current generations rate of time preference and opportunity cost of capital - to value future generations concerns. The reasoning is complicated, but relates to the fact that unlike investments which have distributional implications between current generations, there is no potential means of compensating for investments which have important distributional implications across generations.

This remains a very controversial area. (See Arnold and Sussman, 1997, and Portney and Weyant, 2001, for discussions.) However, it must be borne in mind that if such concerns are valid they are only relevant for those impacts which are both very long-lived and which are truly externalities. Thus, on the one hand, general concerns about air and water quality would not usually warrant the application of a special discount rate. And on the other hand in cases where they are warranted, only the "external" benefits and costs should receive special treatment - i.e. the environmental cost of carbon dioxide emissions but not the cost of energy use.

4.4 Outsourcing, third-party financing and other instruments

Due to the presence of obstacles to wholesale reform of public expenditure management systems, it might be necessary to look for instruments which ease the financial implementation of environmentally preferable procurement without requiring far-reaching budget reforms. This is the subject of the present section. Four specific financial tools are to be considered: leasing, outsourcing, third party financing, and the use of dedicated capital funds. Each of these instruments will be discussed with respect to several characteristics: its capacity to tackle capital shortness, its applicability to the procurement of services and its adaptability to the existing budget and accounting system.

Dedicated capital funds

Dedicated capital funds allow public authorities to avoid reliance upon the global budget, and thereby 'protect' environmental investments against competition from other investments. This is a direct way to tackle the problem of capital scarcity for environmentally-friendly investments, and are applicable to goods as well as services. However, their integration within the common budget rules is problematic: on the one hand, it seems difficult to determine the appropriate level of funding; and, on the other hand, to justify the existence of such special funds at all. For this reason, dedicated capital funds seem not to be an appropriate alternative when budget and accounting reforms can not be implemented.

Leasing

Leasing is the most common financial instrument which allows public authorities to invest in capital-intensive environmentally-friendly products with low initial investment costs. For example, leasing a modern photocopier allows the public administration to benefit from the latest technology without incurring any capital costs. Thus, leasing eases problems of capital shortness. However, over the long run, it is not always the less expensive solution (see Umweltbundesamt, 2000).

Leasing is easily compatible with existing accounting systems. However, applications are mainly restricted to equipment. Services can sometimes be 'attached' to the leased good (operating leasing) in form of maintenance services, but this is not the main form of leasing. The lack of its applicability to services is a major shortcoming of this procurement instrument. Indeed, procurement refers not only to purchasing, but covers "all contractual options, including purchase, leasing, rental and hire-purchase with or without the option to buy"(*Government Procurement Agreement*, Art I).

Outsourcing

Outsourcing (or out-contracting) is a specific tool which can be applied for services. A great part of federal government procurement consists in services: In 1993 in the US, for instance, federal non-defense procurement after compensation of employees amounted to US$ 73 billion, of which US$ 14.4 billion were spent on goods and the remaining US$ 47 billion for non-wage related services (see Evenett and Hoekman, 2000). This includes financial and IT services as well as maintenance and cleaning of public buildings (see Atkinson and van den Noord, 2001). At a municipal level, the share of services in total procurement is less important, but still common, in particular in areas such as operating city bus services, waste collection and child-care (see Atkinson and van den Noord, 2001).

Indeed, outsourcing gives public authorities the possibility to establish collaborative relationships with specialised firms for particular environmental services. Those firms, due to their experience and privileged access to information, are generally able to take decisions about environmental issues in a more cost-efficient way. As Atkinson and van den Noord (2001) mention, it is not always easy to design and manage outsourcing contracts effectively, but "where these difficulties can be overcome contracting …has often led to… an improvement in the quality of the services provided". In this sense, outsourcing can be said to address capital shortness. In addition, outsourcing can easily be integrated in common budget and accounting rules.

Continuing with the photocopier example, the public sector could decide to delegate its copy-service to an external company. The company, specialised in the field, will renew its photocopiers more often than the public sector would have done. The public sector could choose those

companies whose new photocopiers are energy, paper, and ink-saving and, hence, more cost-efficient.[10]

Third-party financing

Third-party financing is a special form of outsourcing. However, compared to outsourcing it has several advantages with respect to its applicability and cost-efficiency. Third-party financing consists of a contract between the public sector and an external company, where the external company bears the total research, development and capital costs for an environmentally friendly investment used in the public sector. The public sector uses the savings achieved through this investment to pay the company back. Often, an additional payment is levied by the company as a risk premium.

Continuing with the same example, an external company, which is specialised in the development and use of environmentally friendly photocopiers, would replace an old photocopier used in a public administration office by a new one, which uses less energy, paper and ink. The company has already paid the R&D costs in order to develop the new technology and now buys the machine. The public administration, on the other hand, saves money as it spends less on energy, paper and ink. It pays the companies' services with the difference between past and present energy, paper and ink expenditures, over several years.

In most existing cases, third-party financing is applied to energy-related fields: the company invests in energy-saving equipment, such as insulating windows, the public sector achieves energy-savings which result in reduced costs, heating costs, for example, and allow the public sector to pay the company back. However, more recently, third-party financing has been extended to other areas, such as water and waste-services. In addition, contracting for buildings extends third-party financing to the construction sector. A whole building is built by the external company which is, again, financed by the achieved savings. In Germany, such contracts have been applied to sewage- and waste incineration plants.

Third-party financing eases the burden of undertaking capital-intensive investments and allows for environmentally preferable investments which would not have been undertaken otherwise. It thereby helps to overcome capital scarcity, one of the major barriers to environmentally preferable procurement (see Sorrell 2000). In addition, and as for outsourcing, the intervention of specialists relieves the public agency of having to make a number of difficult decisions about green equipment which it is less well-equipped to make.

However, third-party financing also has some shortcomings. The contracts present long-term commitments (around 25 years) for the contracting agency. This implies future budgetary obligations for the public entity, which can be difficult to assume. Also, in practice, third-party financing contracts can turn out to be rather expensive. Theoretically, the share of energy savings to be paid to the contractor could be reduced over time and the investment would still be profitable, but in practice the external company usually requires a high proportion of the value of energy savings. Moreover, contracts often contain exceedingly high risk premiums which render the service more expensive than it should be.

---

10. This strategy has an additional advantage. Although services are subject to the general GPA rules, in practice they are only subject to them to the extent that they are listed in Annex 4 and 5 GPA and to the extent that they are not subject to "derogation on reciprocity grounds". This means that the scope for environmentally discretionary procurement in the service sector is great. See Chapters 5 and 6.

Those disadvantages and the restriction to certain sectors have led to new forms of third party financing, such as "intractings" (see Umweltweltbundesamt 2001). "Intracting" refers to third party financing between two public entities in which one party has surplus capital. In such cases the contractor offers more preferable repayment contracts than would have been the case with a private counterpart. Examples of intracting are the Federal Energy Bank in the US or the intracting system of the city of Stuttgart, Germany.

Overall, all of the above instruments take the specificity of public procurement operations into account and try to overcome organisational "failures" without undertaking wholescale budget reform. Leasing, outsourcing and third-party financing support the implementation of green public procurement without disturbing existing budget and accounting systems. Outsourcing and third party financing both increase the cost-effectiveness of the procurement by making use of expert opinion held by specialist firms. Third party financing also allows public authorities to overcome capital scarcity in a particularly cost-efficient way.

5. Conclusions

Clearly there are areas in which budget reform will lead to more preferable environmental characteristics of public procurement. Allowing for greater flexibility in input choices, lengthening budget horizons, providing appropriate incentives to managers and procurement officers, and other measures should result in both a more efficient use of public funds and improved environmental performance (which is the case in most, but not all cases). Thus, removing policy failures in one area (i.e. budgeting systems) may incidentally yield benefits in another area (i.e. environmental protection).

Such "win wins" are important and should be pursued. However, they should not be overplayed. The extent to which such "win wins" exist depend upon the nature of the organisational failures and the cost structure of "environmentally-preferable" procurement. In some cases, it is possible that existing failures in public expenditure management have inadvertently served as a brake on environmental degradation.

Moreover, even if there are potential "win wins", in some cases it may not be politically feasible to remove policy failures of the sort described above. In such cases, it may be advisable to address these concerns by other means. Application of environmental shadow prices and effective liability regimes are key. In addition, in limited cases there may be an argument for the use of adjusted discount rates, although such a strategy should be pursued with caution. More promising (particularly in the presence of capital shortness and bounded rationality) is the application of measures such as third-party financing and outsourcing to encourage "green" investments with high initial costs.

Moreover, it is important to note that the removal of policy failures of the kind discussed should be seen as a complement to (and not a substitute for) more directed efforts to improve the environmental performance of public procurement. If governments want to substantially reduce environmental impacts from public procurement budgetary policy reform will not suffice, and this particularly if environmental impacts are not closely linked to the use of priced material inputs. This means that GPP policies of the sort discussed in Chapters 1 and 2 will have to be introduced.

And finally, it is clear that greener public purchasing programmes will not be effective if they are not co-ordinated with more general reforms of the sort discussed above. There is little point encouraging public administrations to purchase energy-efficient HVAC systems, paper-saving double-sided photocopiers, water-saving plumbing systems and other measures if no incentives are provided to use them efficiently. As always, the importance of policy co-ordination and coherence must be stressed.

ANNEX 4.1: HYPOTHETICAL PROCUREMENT DECISIONS REGARDING "GREEN" AND "BROWN" ALTERNATIVES

This annex analyses a hypothetical procurement decision and shows how dependent these decisions are on different parameters and costs applied in the appraisal of the purchase. For this purpose, a base case scenario is presented, and then three different costs or parameters are adjusted independently: first the discount rate, then the disposal costs, then the shadow price associated with the environmental impacts of the good. Thus, we examine the effects of changes in recurring costs (the shadow price of emissions), a future liability which is a fixed cost (disposal costs), and the relationship between future and present costs and benefits (the discount rate). Changes in the procurement decision are then observed.

The procurement decision concerns the purchase of a bus. Two sorts of buses exist: a diesel bus, which generates environmental harms through CO_2 and particulate matter emissions ("brown bus") and a fuel-cell powered bus, which only emits water vapour ("green bus"). (Although there may of course be significant upstream impacts associated with the use of fuel-cell powered buses, these are ignored in the scenarios which follow.) The two buses are assumed to be identical in terms of "performance and quality", and thus the investment decision is based purely on grounds of relative cost (including external costs in the final scenario).

Total costs are divided into capital expenditures, current costs and external costs. Capital expenditures are investments (here, the purchase costs of the bus).[11] Current costs are recurring costs associated with the use of the bus. They include fuel costs, maintenance costs, insurance costs and the driver's salaries. External costs are costs that are not accounted for in ordinary markets, such as damages to the environment. They can be estimated by different methods, for example by valuing the costs that are necessary to repair or avoid the damages they cause.

Total revenue comprises ticket sales during the time where the bus is in use and revenues from the resale of the bus at the end of the period. Total revenues minus total costs give total cash flows, which indicate the amount of money needed every year. As cash flows from different periods are not directly comparable, they have to be discounted before they are summed. The sum of discounted cash flows, finally, gives the present value of the total costs of the procurement over the period being considered (the "investment horizon").

11. Research and development costs are assumed to be ammortised into the cost of the bus.

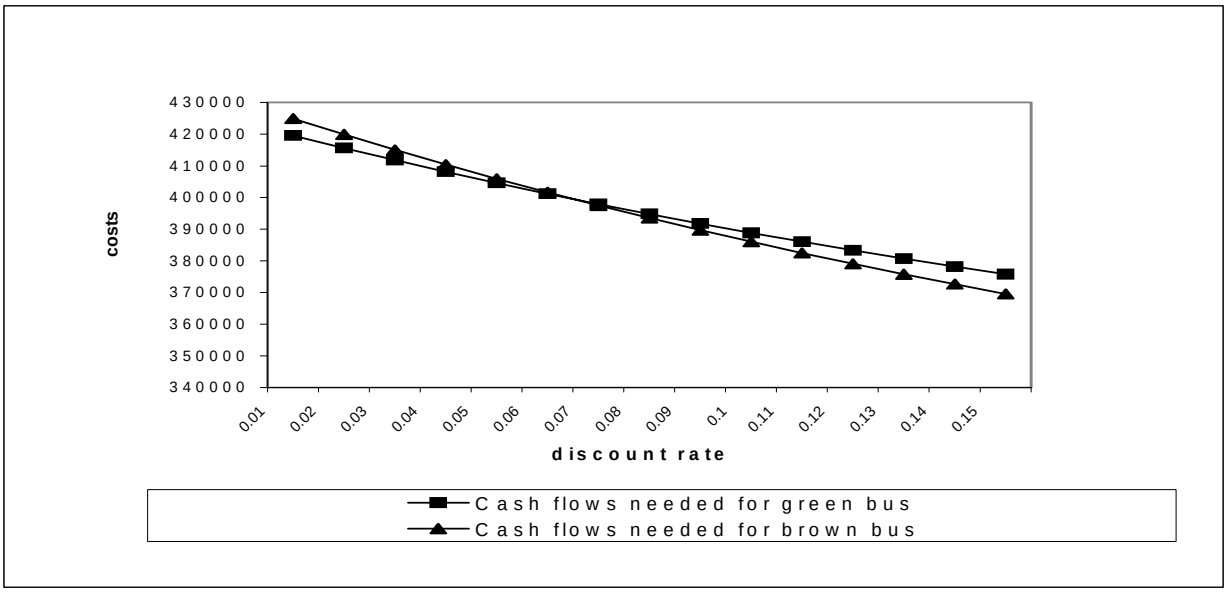
Table 4.6 Cost structure of the base case alternatives

GREEN BUS						
END OF YEAR\ COSTS and INCOMES (euro)	0	1	2	3	4	5
COSTS						
Capital expenditures	262000	0	0	0	0	0
Current costs	0	100000	100000	100000	100000	100000
External costs	0	0	0	0	0	0
TOTAL COSTS	262000	100000	100000	100000	100000	100000
REVENUE						
Current revenue	0	61500	61500	61500	61500	61500
Resale	0	0	0	0	0	30770
TOTAL REVENUE	0	61500	61500	61500	61500	92270
TOTAL CASH FLOW	-262000	-38500	-38500	-38500	-38500	-7730
TOTAL DISCOUNTED CASH FLOW (TDCF)	-262000	-35000	-31818	-28926	-26296	-4800
SUM OF TDCF	-388840					
BROWN BUS						
END OF YEAR\ COSTS and REVENUE (euro)	0	1	2	3	4	5
COSTS						
Capital expenditures	230000	0	0	0	0	0
Current costs	0	107700	107700	107700	107700	107700
External costs	0	0	0	0	0	0
TOTAL COSTS	230000	107700	107700	107700	107700	107700
REVENUE						
Current revenue	0	61500	61500	61500	61500	61500
Resale	0	0	0	0	0	30770
TOTAL REVENUE	0	61500	61500	61500	61500	92270
TOTAL CASH FLOW	-230000	-46200	-46200	-46200	-46200	-15430
TOTAL DISCOUNTED CASH FLOW (TDCF)	-230000	-42000	-38182	-34711	-31555	-9581
SUM OF TDCF	-386029					

The costs for the base case alternatives are given in Table 4.6 above. (Note that these figures are purely hypothetical.) Initial investment costs are higher for the green bus (262 000 euros) than for the brown bus (230 000 euros) whereas current expenses are smaller (100 000 euros instead of 107 700 euros). This might be attributable to higher manufacturing costs, as production methods are more complex and costly. However, the green bus may also have lower fuel costs, due perhaps to greater combustion efficiency or lower fuel prices. All other variables are supposed to be the same for both vehicles, especially the use of the buses (same number of trips, same driver's salaries etc). Initially, external costs are not accounted for in the investment decision. The period considered is five years.

In the first example, only the discount rate is changed and the effects on the procurement decision are analysed. At a discount rate of, say, 10% (as in Table 4.6) the total costs for the green bus (388 840 euros) are higher than the total costs for the brown bus (386 029 euros) and the procurement officer would choose to purchase the brown bus. Changes in the discount rate change the relative costs. This can be seen in Figure 4.1, which provides a graph of total discounted costs of the procurements for different discount rates.

Figure 4.1: Cost as a function of discount rate

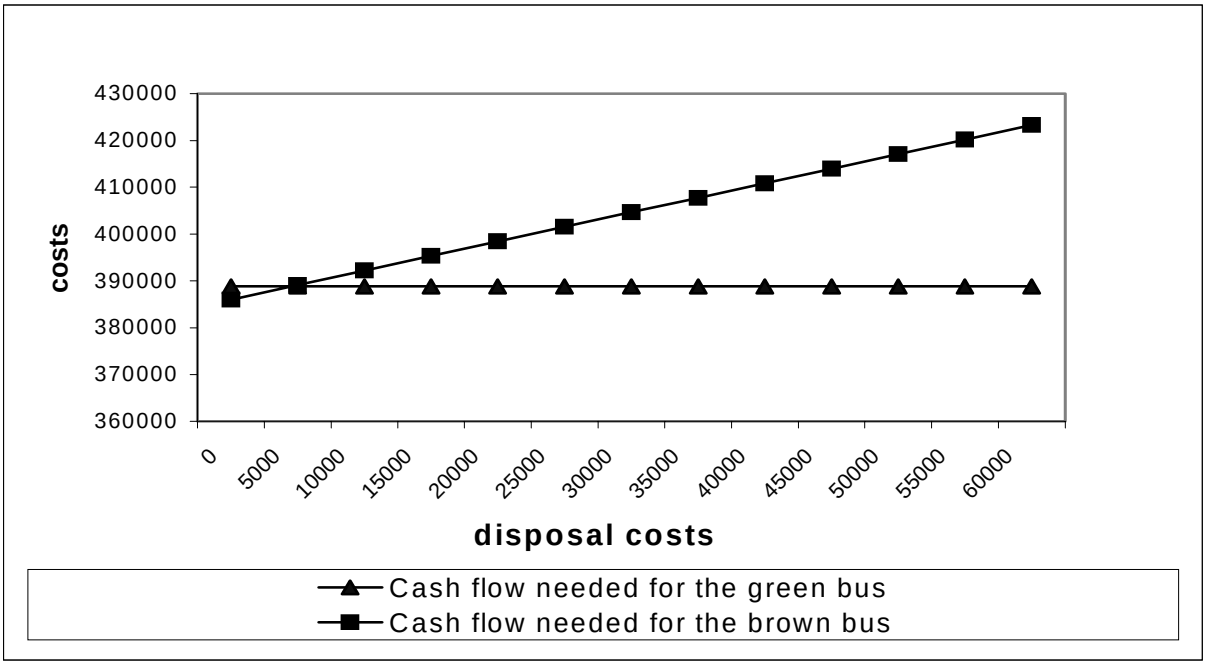


However, at a discount rate of, say, 4%, the result is the opposite: Costs for the green bus are lower (408 104 euros) than costs for the brown bus (410 383 euros) and the procurement officer would chose the green bus. The point where the decision switches is at a discount rate of 6.5%. Thus, at a discount rate above 6.5%, the brown bus will be preferred and at a discount rate below 6.5%, the green bus will be preferred (always conditional on the assumptions about the cost structure).

The second example takes different resale possibilities into account. After five years, the green bus is supposed to be sold for more than the brown. This could have different reasons. First, the life- time for the brown bus could be shorter than for the green and the buyer thus not willing to pay as much for it. Second, the disposal costs for the brown bus could be higher than for the green bus and the buyer would take this into account by subtracting a higher sum from the purchase price.

This example explores the latter issue: Disposal costs are assumed to be zero for the green bus, but vary between zero and 60000 euros for the brown bus. In terms of resale prices, this means that the green bus is sold for 30 770 euros whereas the brown bus is either sold at a price between zero and 30 770 euros or, if disposal costs are very high, has to be paid for in order to be disposed of (i.e. it is a liability rather than an asset.) The effects of this change in disposal costs are important. With no disposal costs, the brown bus is less expensive (386029 euros) than the green (388840 euros). Increasing disposal costs make the brown bus more expensive than the green. For instance, at a disposal cost of, say, 55000 euros, cash flows needed for the brown bus amount to 420179 euros and those for the green to only 388840 euros. (see Figure 4.2). Indeed, the brown bus is more expensive than the green for all disposal costs above 4527 euros per year. This corresponds to a resale price of 26243 euros for the brown bus.

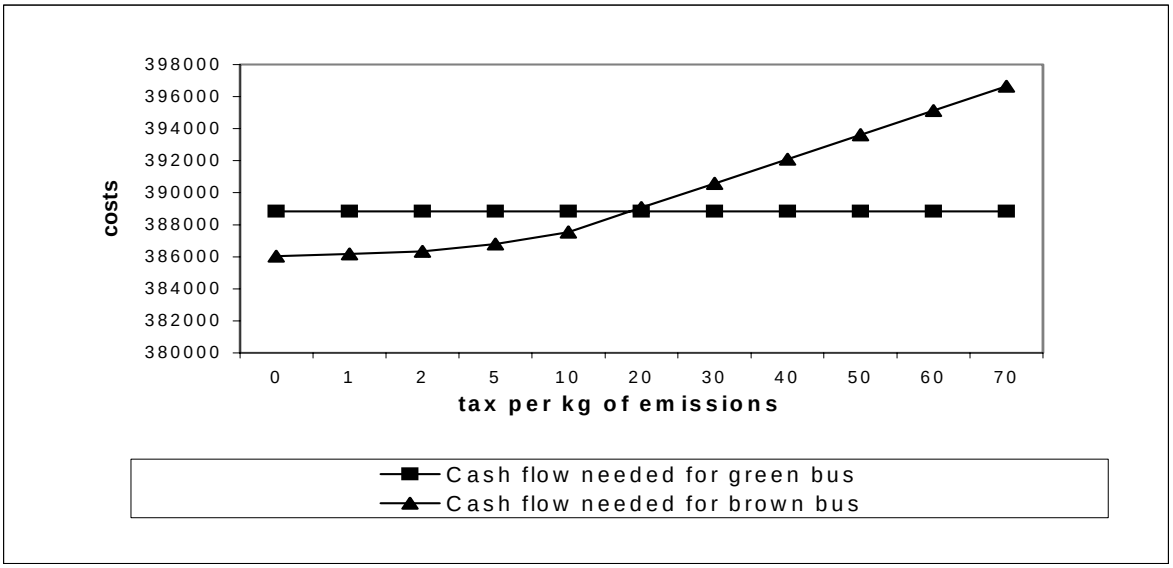
Figure 4.2: Cost as a function of disposal costs



If we combine the two effects (disposal cost and discount rate) it is interesting to note that the effect of increased disposal cost for the brown bus means that a higher discount rate will be required in order for the procurement officer to favour the brown bus. With, for instance, a disposal cost of 15,385 euros for the brown bus the discount rate would have to exceed 16.5% for the brown bus to be favoured, while the figure had been only 6.5% in the absence of disposal costs.

In the third example, the basic cost structure is again given by the base case. However, the government decides to take into account that the green bus causes less environmental damage in use than the brown. It therefore levies a "tax" on particulate emissions by setting a shadow price for a kilogram of emissions. Both buses are supposed to run 20 000 kilometre per year (i.e. the shadow price affects the purchase decision, but not the use decision). However, the brown bus emits 2 g of particulate matter per vehicle kilometre, whereas the green bus only emits water vapour and no particulate matter at all. The effect of these tax rate changes on the procurement decision is represented in the following figure, with a discount rate set at 10% (see Figure 4.3).

Figure 4.3: Cost as a function of emission tax rate



Without taking the shadow price for emissions into account the costs for the green bus (388 840 euros) are higher than the costs for the brown bus (388 606 euros). However, taking the tax on emissions into account makes the brown bus more and more expensive relative to the green bus as the tax rate rises. Above a certain unit tax on emissions, the brown bus is more expensive the green bus.

REFERENCES

ARNOLD, FRANK S. AND FRANCES G. SUSSMAN (1997) "Discounting in Environmental Policy Evaluation" Report Prepared for Economic Analysis Division, Office of Policy Planning and Evaluation, US Environmental Protection Agency, Washington D.C.

ATKINSON, PAUL AND PAUL VAN DEN NOORD (2001) "Managing Public Expenditure: Some Emerging Policy Issues and a Framework for Analysis" OECD, Economics Department, Working Paper No. 285.

BECKERMAN, WILFRED (1993) "Environmental Policy and the Discount Rate" CSERGE Working Paper 93-12, University College London/University of East Anglia.

BERGKAMP, LUCAS (2001) "Liability and Environment" in Lucas Bergkamp (ed.) *Liability and Environment* (Amsterdam: Kluwer).

BRENNER, LORETTA (1997) "Dollars and Sense: The Economic Benefits of Reducing Pesticide Use" in *Journal of Pesticide Reform*, Vol. 11, No. 2.

CLAIN, SUZANNE HELLER (1994) "Effect of Liability Limitations on the Level of Care in the Public Sector" in *Public Finance Quarterly*, Vol. 22, No. 4, pp. 483-497.

COMMON, MICHAEL (1996) *Environmental and Resource Economics: An Introduction* (Harlow: Longman).

DECANIO, STEPHEN J. (1998) 'The Efficiency Paradox: Bureaucratic and Organisational Barriers to Profitable Energy-Saving Investments' in *Energy Policy*, Vol. 26, No. 5, pp. 441-454.

ENVIRONMENT CANADA (1998) "Towards Greener Government Procurement: An Environment Canada Case Study" in Trevor Russel (ed.) *Greener Purchasing: Opportunities and Innovations* (London: Greenleaf Publishing).

EPPEL, SARA (1999) "Government Purchasing of Climate-Friendly Technologies" in OECD Directorate for Science and Technology, *Science Technology Industry Review: Special Issue on Sustainable Development*, No. 25.

EVENETT, SIMON and BERNARD M. HOEKMAN "Government Procurement of Services and Multilateral Disciplines" in: *GATS 2000, New Directions in Services Trade Liberalization*, Pierre Sauvé and Robert M. Stern (eds.), Brookings Institution Press, Washington D.C., 2000.

FULLER, SIEGLINDE AND STEPHEN R. PETERSEN (1996) *Life-Cycle Costing Manual for the Federal Energy Management Program* (Washington: US Department of Commerce, National Institute of Standards and Technology Handbook 135).

HALVERSEN, ROBERT AND RUBY, MICHAEL G. (1981) *Benefit-Cost Analysis of Air-Pollution Control* (Lexington, Massachusetts, Toronto).

HEYES, ANTHONY G. AND CATHERINE LISTON-HEYES (2000). "Capping Environmental Liability: The Case of North American Nuclear Power". *Geneva Papers on Risk and Insurance – Issues and Practice,* Vol. 25, No. 2.

JAFFE, ADAM B., RICHARD G. NEWELL AND ROBERT N. STAVINS (2000) 'Technological Change and the Environment' (Cambridge, Mass.: NBER Working Paper No. 7970).

MARRON, DONALD (2003) "Greener Public Purchasing as an Environmental Policy Instrument" Chapter 1 in the present volume.

MIELISCH, ARNDT AND CHRISTOPH ERDMENGER (2001) "The Case of Public Purchasing and Green Procurement at the Municipal Level: The Local and European Dimension" in Peter Clinch et al. (ed.) *Greening the Budget* (Aldershot: Edward Elgar).

NORBERG-BOHM, V. et al. (1992). *International Comparisons of Environmental Hazards: Development and Evaluation of a Method for Linking Environmental Data with the Strategic Debate Management Priorities for Risk Management* Center for Scientific and International Affairs, John F. Kennedy School of Government, Harvard University, Cambridge Mass.

OECD (2001) *The Firm, the Environment and Public Policy* (Paris: OECD/ENV/EPOC/WPNEP(2000)18 FINAL).

OSTERTAG, KATRIN AND CARSTEN DREHER (2001) "Co-operative Procurement: Market Transformation for Energy-Efficient Products" in Peter Clinch et al. (ed.) *Greening the Budget* (Aldershot: Edward Elgar).

PARFIT, D. (1993) "Energy Policy and the Further Future: The Social Discount Rate" in D. McLean and P. Brown (eds.) *Energy and the Future* (Totowa, New Jersey: Rowman and Littlefield).

PEARCE, DAVID, EDWARD BARBIER AND ANIL MARKANDYA (1990) *Sustainable Development* (London: Earthscan).

PORTNEY, PAUL R. AND JOHN P. WEYANT (eds.) (2001) *Discounting and Intergenerational Equity* (Washington D.C.: Resources for the Future Press).

RICHARD, ANNE (2003) "Overview of Budget Systems and Public Procurement in OECD Countries" Chapter 3 in the present volume.

RUSSEL, TREVOR (ed.) (1998). *Greener Public Purchasing: Opportunities and Innovations* (Sheffield, U.K.: Greenleaf Publishing).

SCHLEICH, JOACHIM AND ULLA BÖDE (2000) "Reducing Barriers to Energy Efficiency in the German Higher Education Sector" EC Energy Programme Joule III Project Report on Reducing Barriers to Energy Efficiency in Private and Public Organisations, Fraunhofer Institute for Systems Innovation Research, Karlsruhe, UK.

SIEMENS, RENETTA (2003) "A Review and Critical Evaluation of Selected GPP Programmes and Policies" Chapter 2 in the present volume.

SORREL, STEVE (2000) "Barriers to Energy Efficiency in the UK Higher Education Sector" EC Energy Programme Joule III Project Report on Reducing Barriers to Energy Efficiency in Private and Public Organisations, Science Policy Research Unit, University of Sussex, Brighton, UK.

SMITH, DEBORAH C. AND MICHAEL J. RAUPP (1986). "Economic and Environmental Assessment of an Integrated Pest Management Programme for Community-owned Landscape Plants" in *Journal of Economic Entomology*, Vol. 79: pp. 162-165.

TRACE, FERGAL, SUE SCOTT AND EOIN O'MALLEY (2000) "The Irish Higher Education Sector" EC Energy Programme Joule III Project Report on Reducing Barriers to Energy Efficiency in Private and Public Organisations, The Economic and Social Research Institute, Dublin.

UMWELTBUNDESAMT und BUNDESMINISTERIUM (2001) "Handbuch Umweltcontrolling für die öffentliche Hand". Verlag Franz Vahlen, München

UNITED STATES ENVIRONMENTAL PROETECTION AGENCY (1993) *Pest Control in the School Environment: Adopting Integrated Pest Management*, USEPA, Office of Pesticide Programs, Report 735-F-93-012.

WEBBER, WHITNEY (2001) "IPM Use in California School Districts" in John Latto, Matt Orr, Reuben Deumling and Justin Remais (eds.) *Investigating the Environment: Research for Environmental Management* (Senior Research Seminar, Environmental Sciences Group Major University of California at Berkeley).

PART III

THE LEGAL DIMENSION OF GREENER PUBLIC PURCHASING

International Procurement Regimes and the Scope for the Inclusion of Environmental Factors in Public Procurement
by Peter Kunzlik

National Procurement Regimes and the Scope for the Inclusion of Environmental Factors in Public Procurement
by Peter Kunzlik

PART III

THE LEGAL DIMENSION OF GREENER PUBLIC PURCHASING

Chapters 5 and 6 review the legal "scope" for including environmental criteria in public procurement. They do so through a review of four international trade regimes, and three domestic laws, focussing on the extent to which they permit public bodies to exercise discretion in favour of environmental protection during the procurement process.

The international procurement regimes (discussed in Chapter 5) are the Government Procurement Agreement (selected because of its character as a plurilateral agreement within the WTO system); the procurement regime of the European Union (selected because it represents a regime operating in the context of a common market rather than only a free trade area); the North America Free Trade Agreement (selected as an example of a procurement regime operating in the context of a regional free trade agreement between Members of the WTO); and the Australia-New Zealand Government Procurement Agreement (selected as an example of a bilateral procurement agreement between countries not party to the WTO Government Procurement Agreement).[1]

The domestic regimes covered in Chapter 6 are the United Kingdom (or rather England and Wales), the United States, and Australia. The three countries adopt quite different policy orientations in relation to environmental discretion in procurement. The United States Federal system requires public agencies to adopt affirmative environmental purchasing policies. The UK policy, whilst encouraging and permitting a degree of "green purchasing" does not generally *require* procuring entities to exercise discretion in favour of the environment in specific respects. Finally, the Australian Commonwealth procurement rules permit procuring agencies to exercise a very wide degree of discretion generally, whilst at the same time mandating certain aspects of "green procurement" through government guidance.

In all cases, the potential for the inclusion of environmental criteria in procurement is assessed in different areas, including: the technical specifications of the good or service to be purchased; the qualification and selection of potential suppliers; and, the contract award criteria. Some of the main points addressed in the two chapters include:

- The distinctions between environmental impacts associated with products and those associated with production processes, and the extent to which the latter can be included in procurement decision-making;

- The precise nature of the "environmental" criteria which can be included (i.e. technological vs. performance, certification for environmental management systems, etc…);

---

1. The revised version of the report will also make reference to relevant elements of the more general legal treatment afforded to the exercise of environmental discretion in trade law, by reference to the provisions of the GATT 1994, GATS, the Sanitary and Phytosanitary Agreement and the Agreement on Technical Barriers to Trade.

- The scope for the inclusion of "whole-of-life" (and even non-financial) costs in procurement procedures; and,

- The definitions of what is "external" to the contracting authority - i.e. the extent to which costs and benefits should be considered globally across all government departments and agencies.

These points are key to an understanding of the extent to which government authorities can incorporate environmental criteria in their tendering procedures and in procurement generally. In general, the chapters conclude that there is, in fact, considerable legal scope to do so. However, it is also clear that a number of important issues remain unresolved due to the relatively immature state of case law in this area. The effect that this uncertainty may be having on the willingness of procurement officers in member country governments to exploit this potential scope is not clear. However, such uncertainty may play an even more important role in discouraging procurement officers from "greening" their purchasing than other oft-mentioned factors such as administrative burdens or information deficits.

Chapter 5

INTERNATIONAL PROCUREMENT REGIMES AND THE SCOPE FOR THE INCLUSION OF ENVIRONMENTAL FACTORS IN PUBLIC PROCUREMENT

by

Peter Kunzlik[1]

Nottingham Law School
Nottingham Trent University

1. Introduction

Through adherence to regional trade agreements, membership in common market areas, and other international treaties, OECD Member country governments have agreed to subject their public procurement procedures to a certain degree of international regulation. In this report we will review the importance of legal constraints which such regimes place on the "scope" for including environmental criteria in public procurement.

The report does so through a review of four international procurement regimes. The regimes included are the Government Procurement Agreement (selected because of its character as a plurilateral agreement within the WTO system); the procurement regime of the European Union (selected because it represents a regime operating in the context of a common market rather than only a free trade area); the North America Free Trade Agreement (selected as an example of a procurement regime operating in the context of a regional free trade agreement between Members of the WTO who are signatories to the GPA); and the Australia-New Zealand Government Procurement Agreement (selected as an example of a bilateral procurement agreement between countries not party to the WTO Government Procurement Agreement).

In all cases, the incorporation of environmental concerns into issues such as the qualification and selection of potential suppliers, technical specifications of goods and services to be procured, and contract award criteria are explored. While many of the same issues arise in the four cases, they are often addressed in very different ways.

2. The Government Procurement Agreement

Government procurement is excluded from the national treatment and most-favoured-nation treatment rules of GATT 1994 (article III:8(a)) and GATS (article XIII:1).[2] It is dealt with instead by the Government Procurement Agreement (GPA) which is one of the plurilateral agreements annexed to the WTO Agreement (see generally Arrowsmith 1996, Blank & Marceau 1996 and WTO 1996). The GPA is therefore part of the WTO Agreement only as between those Members of the WTO

1. The views expressed in this chapter are those of the author and do not necessarily reflect those of the OECD.

2. See Jackson (1997) at pp. 224-228 and Arrowsmith *et al* (2000) at pp. 182-183.

that have accepted it (WTO Agreement, article II:3). It follows that procurements in states not party to the GPA are not regulated within the WTO system. Neither are procurements by procuring entities within a GPA state to the extent that tenderers or potential tenderers are not themselves from another GPA State. Furthermore, the GPA only applies to procurements in excess of prescribed threshold values; and, in respect of sub-central governmental bodies or public utilities, only to the extent that such entities are included within the Annex to the GPA in respect of each Party. (For a summary of the GPA regime see OECD 1999.)

The Preamble of the GPA makes no reference to environmental protection but the Sixth Recital of the Preamble to the WTO Agreement, which recognises the need to act in accordance with the principle of sustainable development and to protect and preserve the environment, informs all the multilateral and plurilateral agreements annexed to the WTO Agreement including the GPA.[3] In fact, as is argued below, the GPA allows procuring entities significant scope to take account of environmental factors when defining specifications, deciding upon criteria for qualification or selection of tenderers and/or framing contract award criteria.

Procuring entities must do so, however, within the GPA framework that, *inter alia*, applies a national treatment rule and a most favoured-nation-treatment rule to procurement under the GPA: article III (1). These rules are supported by GPA article III (2), which prohibits discrimination against locally based suppliers on the basis of the degree of foreign affiliation and ownership or on the basis of the country of production of the goods or services being supplied (provided that the country of production is a party to the GPA).

2.1 Technical specifications

The GPA controls the use of environmental (and other) technical specifications in public procurement in four ways.

- Where "appropriate" technical specifications must be based on international standards, where they exist, or otherwise on national "technical regulations," recognised national "standards" or recognised national building codes (GPA article VI:2(b)). By linking specifications to international and national "standards" and "technical regulations" the GPA indirectly links them to the controls contained in the Agreement on Technical Barriers to Trade (TBA) on the preparation, adoption and application of such standards and regulations.
- The GPA provides (reflecting a like provision in the TBA) that specifications shall, "where appropriate" be prescribed "in terms of performance rather than design or descriptive characteristics" (GPA article VI:2(a)). This clearly encompasses the specification of requirements relating to environmental performance at the consumption stage of the product or facility to be procured.
- Article VI:1 provides that technical specifications must not be prepared, adopted or applied "with a view to, or with the effect of, creating unnecessary obstacles to international trade."
- The use of technical specifications is, of course, subject to the national treatment and most-favoured-nation rules contained in GPA article III:1.

3. Appellate Body Report in *United States - Import Prohibition of Certain Shrimp and Shrimp Products ("Shrimp I")* WT/DS58/RW, June 15, 2001, at para. 129.

Although the equivalent domestic treatment and most-favoured-nation rules under GATT 1994 are based upon the concept of "like products," that concept has not been expressly imported into the rules as stated in the GPA. Article VI: 1 provides that:

> "Technical specifications laying down the characteristics of the products or services to be procured, such as quality, performance, safety and dimensions, symbols, terminology, packaging, marking and labelling, *or the processes and methods for their production* and requirements relating to conformity assessment procedures prescribed by procuring entities, shall not be prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade." (emphasis added)

This provision clearly assumes that requirements as to "processes and production methods" (PPMs) may, in principle, be included in specifications as long as they do not create unnecessary obstacles to trade. More significantly, no distinction appears to be made between product-related[4] and non-product-related[5] requirements in this regard. Indeed since product-related PPM requirements relate by definition to "the characteristics of the products or services procured" it appears that the separate reference to "the processes and methods for their production" is indeed intended to include non-product-related PPM requirements. This interpretation is strengthened by the fact that those words are preceded by the word "or" which indicates that they are intended to cover requirements that are different from those encompassed by the earlier reference to product characteristics.

This view seems to be confirmed by article VI:2(b) which provides, *inter alia*, that "technical specifications" shall, where appropriate, be based on international "standards" where they exist (or otherwise on national "technical regulations" or "recognised national standards"), the terms "standards" and "technical regulations" being defined as referring respectively to non-mandatory and mandatory documents "which [lay] down characteristics of a product or a service *or their related processes and production methods*." The drafting of this provision indicates that the word "characteristics" governs each limb (i.e. product characteristics and production-and-process methods) of the definition that follows. Thus a document will be covered by the definition of "technical specification" if it lays down characteristics of a product, characteristics of a service or characteristics of processes and production methods related to a product or a service. The breadth of the definition is made clear by its second sentence, which provides that, a standard or technical specification may (in each case) "…also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, service, *process or production method*."

Moreover, an interpretation of the GPA that accepts that non-product-related PPM requirements do fall within the definition of "specifications" seems also to be confirmed by a consideration of the consequences if that were not to be the case. The result of holding that such a requirement could not be a "specification" would be that the requirement would not be subject to the rules (in particular the rule against creating unnecessary obstacles to trade and the rules as to basis

---

4. A specification's requirement is "product-related" where it addresses consumption externalities i.e. the damage created by consumption or disposal of a product that is not incorporated into its cost (OECD 1997). Such damage necessarily arises because of some characteristic of the product itself. Where PPMs influence the environmental effects of a product at the consumption stage (in use, or upon disposal, re-use or recycling) specifications may express their requirements in terms of these PPMs, but since the PPMs themselves relate to consumption characteristics of the product such PPM requirements can be considered to be product-related (OECD 1997).

5. A specification's requirement is "non-product-related" where it addresses production externalities i.e. the damage created by the production of a product that is not incorporated into its cost (OECD 1997). Such damage does not arise because of any particular characteristic of the end product itself but because of features of the PPMs deployed in manufacture or harvesting of the product (OECD 1997).

and transparency) that the GPA lays down to govern "specifications." It would be odd if the drafters of the GPA intended such a consequence. The consequence, on the other hand, of accepting that non-product-related PPM-based requirements do constitute "specifications" would not be that they would be deemed *a priori* consistent with the GPA but rather that their lawfulness would depend upon application on a case-by-case basis of the substantive rules of the GPA including, of course, the national and most-favoured-nation rules and the specific rules governing specifications. [6]

It might be argued that even if non-product-related PPM requirements may, in principle, be included in specifications they will, in practice, always be precluded by the rule (in article VI:2(a) GPA) that specifications must, where appropriate, be stated in terms of performance rather than design or descriptive characteristics. On the other hand, this would seem to amount to an *a priori* prohibition of non-product-related PPM-based specifications and would sit uncomfortably with the definition of "technical specifications" provided by the GPA. The "performance" of a product or service might therefore be taken as including its wider "environmental performance" from cradle to grave. Furthermore, even if the concept of "performance" were to be construed as relating only to performance at the consumption stage, procuring entities would arguably be free to derogate from the "specification in terms of performance" rule since it would not be "appropriate" to specify environmental requirements in such narrow terms because an assessment of the "environmental performance" of a product requires life-cycle analysis of its environmental impacts throughout *both* the production and consumption stages.

Both the rule against "unnecessary obstacles to international trade" and the national treatment and most-favoured-nation treatment rules would be infringed by a technical specification that laid down PPM requirements (or, indeed, any other requirements) for tenderers from some GPA states but not for domestic tenderers or those from other GPA states. Cases may, however, also arise in which although the same PPM-based specifications (whether product-related or non-product-related) apply to all tenderers, those from another GPA state may argue that it is in practice harder for them (e.g. because of difficulties of access to appropriate technology, the stage of development of their industries or the regulatory regimes of their own countries) to comply with the specification than it would be for domestic tenderers or those from other GPA states.

The question therefore arises as to whether such a state of affairs would infringe the national treatment or most-favoured-nation rules or the rule against unnecessary obstacles to trade. Clearly if a PPM-based (or any other) specification were deliberately adopted in order to prejudice suppliers from other GPA countries, that specification would be held to have been "adopted…with a view to…creating unnecessary obstacles to international trade" and would also infringe the national treatment and/or the most-favoured-nation rule. Equally, if non-product-related PPM requirements are specified by reference to proprietary technology without permitting "equivalents" the effect of the specification might well be regarded as discriminatory and as creating an unnecessary obstacle to trade.

On the other hand, if it is accepted that procuring entities do in principle have the discretion under the GPA to specify PPM requirements (whether product or non-product related) then provided that such requirements are applied equally to all potential suppliers, both domestic suppliers and

---

6. By way of comparison, for the treatment under GATT of non-product-related PPM measures restricting imports see the Report of the WTO Appellate Body in *Shrimps I* (*supra*) and in *United States – Import Prohibition of Certain Shrimp and Shrimp Products- recourse to Article 21.5 of the DSU by Malaysia* (*Shrimps II*, DS58/AB/RW, of 22 October 2001). See also the Reports of the GATT Panel in *United State-Restrictions on Imports of Tuna ("Tuna I"* DS21/R-39S/155, 1991, unadopted), and the GATT Panel in *United State-Restrictions on Imports of Tuna ("Tuna II"* GATT DS29/R, 1994, unadopted).

those from other GPA states, the fact that the requirement in question relates to process and production methods rather than to characteristics of the product at the consumption stage would not in itself necessarily imply that it infringes the national treatment or most-favoured-nation rules, or constitutes an "unnecessary obstacle" to trade. In the absence of a "like product" concept,[7] the fact that the requirement is equally applicable to all potential suppliers would (in the absence of features such as those referred to above) seem to preclude their being characterised as discriminatory. Equally, in every market some suppliers will be more able to comply with technical requirements of a specification (whether relating to product characteristics or to PPMs) than others and the inability of a particular potential supplier or suppliers to comply with such requirements can hardly be regarded in itself as an obstacle to trade. Indeed, even if it were so regarded then, provided that the non-product-related PPM requirements in question are necessary and apt to achieve the environmental protection goals of the procuring entity it is difficult to see how they could be regarded as creating "unnecessary" obstacles to trade.

Eco-labelling

We have seen that a procuring entity may base its specification upon the use of "terminology, symbols, packaging, marking or labelling requirements" as they apply to a product, service, process or production method. Requirements that goods bear recognised "eco-labels" to reflect their friendliness to the environment could fall in principle within this category.[8] Similarly, the requirements of a specification as to labelling might include labelling as to product's content or as to optimum conditions for use, reflecting environmental or health concerns. The specification's requirements might also specify characteristics of the product's packaging necessary to ensure its reusability or recyclability or, it seems, as to the environmental soundness of the PPMs used in its production. This appears, incidentally, to be consistent with the position under GATT itself since the Report of the GATT Panel in *Tuna I* (*supra*) concluded that restrictions on the use of environmental labels based upon non-product-related PPMs which were "voluntary" in the sense that they did not affect the relevant product's access to a national market were consistent with GATT. (See generally Okubo 1999. For the practical effects of eco-labelling schemes see OECD 1997a). It is important to note, however, that this report was not adopted.

Eco-labelling schemes involve a process of qualification (including verification by the awarding body or a third party) before a product becomes entitled to bear the relevant label. It is possible that a particular scheme's rules and procedures for qualification/verification may preclude participation in the scheme by non-domestic enterprises, or may make their participation more difficult in practical terms (e.g. if a scheme were to require production of specific documents to establish that the product meets the required criteria where these are in practice only available to

---

7. The treatment of non-product-related PPM measures affecting imports depends substantially upon the GATT national treatment rule, which requires that "like products" be treated alike. Such measures infringe that rule but may be permitted by way of derogation under article XX of GATT provided that they satisfy the conditions of such derogation, see *Shrimps I and II* (*supra*). The GPA does not include a concept of "like products" and "[t]he choice of specifications is entirely the responsibility of the procuring entities. The only limit to their discretion is the obligation not to create "unnecessary" obstacles to international trade (Article VI:1). The question whether the choice of specifications is necessary or appropriate appears to escape judicial review, unless the obligation imposed by Article VI:1 is interpreted in a wide manner. Similarly, the "appropriateness" test for the use of performance-based and international standards is a potential loophole" (Hoekman and Mavroidis 1997 at p. 18).

8. This would, however, constitute the use of an eco-label in a manner in which it was not originally envisioned - i.e. as a mandatory requirement for a sub-set of the market (public sector demand) rather than a voluntary measure for the market as a whole. See Chapter 1 for a discussion of the potential perverse effects of such a use.

domestic producers). If an eco-label scheme is indeed characterised by such features then for a procuring entity to specify that products to be purchased must bear the label of that particular scheme would itself disadvantage non-domestic suppliers and thereby infringe the national treatment rule and the rule against creating unnecessary obstacles to trade. The difficulty might, however, be overcome by specifying compliance with the substantive criteria applied by an eco-labelling scheme and, whilst accepting the label as proof of compliance, also accepting other means of proof (see Lind 1996 and EC Commission 2001b).

2.2 *Transparency*

Where procuring entities wish to include environmental requirements in their specifications they must observe the GPA's procedures. The guiding principle for such procedures is the need for transparency. Except in cases of limited tendering, for example, they are required to publish "invitations to participate" in respect of intended procurements (GPA article IX:1). These must also contain "any economic and technical requirements, financial guarantees and information required from suppliers" (GPA article IX:5 and IX:6f). In selective tendering, entities maintaining permanent lists of qualified suppliers must publish annually a notice stating the conditions to be fulfilled by suppliers with a view to their inscription on the list and the methods according to which each of those conditions will be verified (GPA article IX:9b). Where essential to ensuring the firm's capacity to fulfil the terms of the contract in question, these conditions may include requirements as to provision of details of a tenderer's environmental history and its use of environmental management systems. Such requirements, together with details of the specification itself, must also be included in the tender documentation since this must state "any economic and technical requirement, financial guarantees and information or documents required from suppliers" (GPA article XII:2f) and "a complete description of the products or services required or of any requirements including technical specifications" (GPA article XII:2g).

2.3 *Qualification and selection*

GPA article VIII prohibits discrimination between domestic suppliers and those of other parties (or between suppliers of other parties) "in the process of qualifying suppliers." It also specifically provides that "[a]ny conditions for participating in tendering procedures shall be limited to those which are essential to ensure the firm's capability to fulfil the contract in question" (article VIII:(b)). The selection conditions must relate to the potential tenderer's capacity to deliver the contract as specified. In the event that the procuring entity is indeed entitled to specify both product-related environmental characteristics and non-product-related PPM requirements *and in fact does so*, the tenderer's capacity to fulfil both types of condition *as specified* may be taken into account. In such circumstances any technical qualifications or further information which may be required by the procuring entity relating to the potential tenderer's environmental performance (such as its history of prosecution or other proceedings for infringement of environmental laws) might well be regarded as permissible as "necessary for establishing the commercial and technical capacity of suppliers" as required by GPA article VIII:b.

Such capacity might also be measured by reference to the potential tenderer's experience (or track-record of success or failure) in complying with similar environmental requirements as those specified when executing other contracts or by reference to qualification under an environmental management system such as that under ISO 14001 and 14004 or EMAS (as to which see Howard 1996, Thimme 1996 and Murray 1997).

2.4 Compliant tenders – "additional criteria" – "contract compliance"

To be considered for award, a tender must conform to the essential requirements stated by the notices and tender documentation in respect of the contract (GPA article XIII:4a). Nothing in the GPA in principle prevents procuring authorities from including in the documentation and notices details of environmental obligations (including, for example, as to participation in environmental protection programmes) to be imposed by contract terms upon the successful contractor. So long as these do not discriminate against non-domestic contractors such requirements would be permissible under the GPA and, if a tender were not to accept them, the procuring entity would be required to exclude that tender from consideration as being non-compliant.

2.5 Contract award criteria and weightings

GPA article XII:2(h) requires that the contract award criteria, including "any factors other than price that are to be considered in the evaluation of tenders," must be published in the procuring entities invitations to participate. If an entity wishes to include environmental criteria these must therefore be published. It is also essential that the desired environmental specifications and qualification conditions be stated in the tender documentation since awards must be made in accordance with the criteria and essential requirements contained in that documentation (GPA article XIII:4c). Furthermore unless in the public interest a procuring entity decides not to award a contract, it is required to make the award to the tenderer who has been determined to be fully capable of undertaking the contract and whose tender is either the lowest tender or is determined to be the most advantageous in terms of the specific evaluation criteria set forth in the notices or tender documentation (GPA article XIII:4(b)).

It is important to note that the GPA regime does not limit the non-price award criteria to the "most *economically* advantageous" tender, merely to the "most advantageous" in terms of the criteria stated in the tender documentation. This permits a wide discretion for procuring entities when applying environmental award criteria since it is not necessary for the procuring entity to demonstrate that it will itself accrue any *economic* advantage from the application of those criteria, still less any *direct* economic advantage. This may well be an appropriate approach, since the principles underlying the GPA – transparency and non-discrimination – are not threatened by allowing procuring entities to apply published award criteria which incorporate environmental values which, though objectively verifiable, may not always be easily expressed in terms of economic benefits to the entities concerned.

The facts that the "specific evaluation criteria" must be published in advance, and that the procuring entity must apply only those criteria, do of course impose certain limits on the extent of the latter's discretion. Nonetheless, since the GPA does not expressly require that the procuring entity must publish the respective weightings that may be applied as between the specific award criteria (or the hierarchy of comparative importance of such criteria) significant room is left open, should the procuring entity so wish, for the application of weightings at the award stage that may favour environmental criteria. The possibility of the application of weightings that have not been subject to prior publication does, of course, somewhat compromise the transparency and fairness of the process.

2.6 Power of derogation

Provided that such measures are not applied in a manner which could constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail or a disguised restriction on international trade, nothing in the GPA is to be construed to prevent any Party from imposing or enforcing measures necessary to protect, *inter alia,* "human, animal or plant life or health" (GPA article XXIII:2). We have seen that entities are entitled under the general GPA

rules to take account (in the ways discussed above) of environmental factors in defining specifications, conditions for the qualification of tenderers, and award criteria. Nothing in GPA article XXIII:2 purports to restrict that entitlement. Instead, it expressly preserves the right of "any Party" to take measures to advance the legitimate objectives in question subject to the prescribed limitations. Clearly, in interpreting article XXIII:2, previous decisions relating to the interpretation of the comparable exceptions in GATT 1994 article XX (and in particular the interpretation of its *chapeau* whose provisions the introductory wording of GPA article XXIII:2 so closely follows) will be influential.

3. The European Union

The Treaty of Rome, as amended, creates a common market rather than merely a free trade area amongst its Members. Accordingly, although free movement of goods, services, workers and capital are the "fundamental freedoms" upon which the common market is based, the European Community is furnished with institutions and a range of law making powers that enable it to legislate in a wide range of policy fields including, in particular, the environment. In addition, even so far as free trade within the common market is concerned, the Treaty provisions that enshrine the "fundamental freedoms" are subject to specific derogations. Thus, for example, article 30 of the EC Treaty allows derogation from the free movement of goods between Member States for "the protection of health and life of humans, animals and plants…[provided that such derogation] shall not constitute a means of arbitrary discrimination between Member States." Furthermore, the Court of Justice has created a parallel route to derogation based upon its case law.[9] In certain circumstances this permits Member States to derogate from free movement of goods to protect certain "mandatory interests" recognised by the Court of Justice which include, *inter alia*, protection of the environment,[10] a concept that is potentially wider than simply the protection of the life and health of humans, animals and plants.

The Treaty endows the Community with its own environmental mission. It provides that the "task" of the Community includes, by the implementation of stated policies, the promotion of "sustainable development of economic activities" and "a high level of protection and improvement of the quality of the environment" (article 2 EC). The policies in question include "a policy in the sphere of the environment" (article 3(1)(l) EC) the objectives of which are the preservation, protection and improvement of the quality of the environment, the protection of human health, the prudent and rational use of natural resources and the promotion of international measures to deal with regional or worldwide environmental problems (article 174(1) EC). Environmental policy is not to be regarded, however, as existing in isolation. On the contrary, article 6 EC requires that "[e]nvironmental protection requirements must be integrated into the definition and implementation of [other Community policies], in particular with a view to promoting sustainable development."

Community environmental policy is in fact developed within the context of successive Environmental Action Programmes. The Fifth Action Programme, "Towards Sustainability (1992-1999)" (OJ 1993 No.C138/1, p. 26), emphasised the "shared responsibility" of the public and private sectors, together with consumers, for environmental protection and that environmental factors should, in particular, be integrated into the purchasing policies of public authorities. The current programme, "Environment 2010: Our future, Our choice" (COM (2001) 31 final) is the Sixth Environmental Action Programme. The Sixth Action Programme anticipates that within the framework of the proposed "Integrated Product Policy" ("IPP"), as outlined in the Commission's *Green Paper on Integrated Product Policy* (EC Commission 2001) the Commission "will address ways to improve the environmental

9. Specifically, under Case 120/78 *Rewe-Zentrale AG* v. *Bundesmonopolverwaltung fur Branntwein* (*Cassis de Dijon)* [1984] ECR 3199.

10. Case 302/86 *Commission* v. *Denmark (Danish Bottles)* [1988] ECR 4607.

performance of products throughout their life cycle" and that "[t]his will comprise action on economic incentives for environmentally friendly products, enhancing 'green' demand through better consumer information, *developing an objective basis for green public procurement*, and action to encourage more environmentally friendly product design." (p.17, emphasis added).

The *Programme* emphasises that governmental organisations can help in 'greening' the market by using environmental performance as one of their purchase criteria, and that the Commission, while ensuring consistency with the internal market, will seek to encourage the uptake of green procurement practices by including on a database, guidelines to help businesses and local authorities establish good systems. The Commission is also to look at the feasibility of promoting green purchasing by introducing an obligation to carry out an assessment of the environmental impact of the different alternatives available that meet the needs of the purchasing authorities (the *Programme* p.18). The *Green Paper on Integrated Product Policy* (EC Commission 2001) also emphasises that public authorities must act as "leaders" in the process of green management and "in changes of consumption towards greener products."

Eco-labelling schemes, including those already established by the Community and those in a number of Member States, are seen as especially relevant to green purchasing and the *Programme* indicates that the Community scheme will be reviewed and improved if necessary (p. 18) and that the Commission will consider measures, within its IPP ("including the use of fiscal incentives where appropriate"), to encourage the up-take of eco-labels" (p.18).

Since the EC is party to the GPA, its own procurement regime accommodates the GPA requirements.[11] The EC procurement regime itself incorporates two elements. First, it must be remembered that the general body of Community law will, so far as relevant, apply to public and utilities procurement (Arrowsmith 1995a.) Thus, for example, the provisions of the EC Treaty which prohibit discrimination against nationals of other Member States on grounds of nationality apply to all procurements made by public authorities, regardless of whether they are subject to the specific rules provided by the Community's procurement directives. A particular procurement may, for example, not be caught by one of the directives because it does not equal or exceed the relevant value threshold that triggers the directive's application. The Treaty's rule against discrimination on grounds of nationality will, however, apply in any event. Secondly, the Community has two specific regimes of regulations respectively governing: the procurement of works, goods and services by public authorities; and the procurement of works, goods and services by certain utilities (for a summary description of these see OECD 1999 at p. 29). These regimes are provided by means of "directives", which are, essentially, mandatory instructions requiring Member States to ensure that their domestic laws conform to the requirements of the directives but which leave them with a degree of discretion as to the choice of form and method of transposition (article 249 EC).

Public Contracts are governed by three separate directives for works, supply contracts, and services. [12] A separate directive[13] governs procurement by certain utilities in respect of supply, works

11. For the interrelationship between the two regimes see WTO 1998 and 2000, Trepte 1995, Appella 1996 Dingl 1996, Footer 1996 and Eeckhout 1997.

12. Directive 93/37 Concerning the Co-ordination of Procedures for the Award of Public Works Contracts (OJ 1993, No. L199 p. 54); Directive 93/36 Concerning the Co-ordination of Procedures for the Award of Public Supply Contracts (OJ 1993, No. L199 p.1); and Directive 92/50 Concerning the Co-ordination of Procedures for the Award of Public Services Contracts (OJ 1992, No. L209 p.1). At the time of writing it is proposed to replace these Directives with a single Directive covering public supply, services and works contracts, which will simplify and amend the public procurement regime (see COM (2000) 275) final). It is expected that the new Directive will be adopted in the "summer of 2003" and will have to be transposed into national law within 21 months thereafter ("State of Play document (December 2002) UK Government, Office of Government Commerce).

and services contracts. The extent to which the EC procurement regimes permit "green procurement" has been the subject of much debate (Arrowsmith 1995 and 1996b). The guidance provided by the EC Commission has itself recently been updated, the Commission's earlier statements on the subject (EC Commission 1998, 1996, and 1989) now having been replaced by its *Interpretative Communication on the Community Law Applicable to Public Procurement and the Possibilities for Integrating Environmental Considerations into Public Procurement* ("the *Communication*") (EC Commission, 2001a).[14] This follows a judgment of the Court of Justice in the *"Nord Pas-de-Calais"* case.[15] A further important case, *Concordia Bus Finland,*[16] has recently cast further light on the extent to which procuring authorities within the Community can seek to use public procurement contract award criteria to advance environmental policies.

It is argued below that although the procurement directives at present make no express provision as to environmental protection, contracting authorities and utilities may nonetheless further environmental objectives (in several ways at least) through the procurement process. The scope for procuring entities to define the subject matter of their contracts in the way that they consider most environmentally sound is, however, subject to the general rules of Community law, notably those EC Treaty provisions providing for free movement of goods and services laid down in articles 28 to 30 and 43 to 55 EC (Arrowsmith 1995a). This means that the subject matter of the contract may not be defined with the intention or effect of discriminating against tenderers from other Member States. The application of these general rules will tend to require case-by-case analysis.

3.1 Technical specifications

Environmental protection requirements can, to an extent, be incorporated into technical specifications. These, of course, are the technical requirements relating to the works, goods or services being procured and do not relate directly to the environmental performance of the provider unconnected with the contract itself. They do, however, have an indirect effect on selection of potential contractors since the "technical capacity" of potential contractors (as to which see below) relates to its capacity to fulfil the contract as specified.

Under the Treaty itself, specifications must not be drawn so as to discriminate against works, goods or services (or their providers) from other Member States[17] and even if indistinctly applicable must not restrict intra-Community trade.[18] Measures may be justifiable in the latter case, however, under the *Cassis de Dijon* principle, which allows Member States to derogate from free movement of goods to protect "mandatory interests" recognised by the Court of Justice (*Danish Bottles*, *supra*). As

---

13. Directive 93/38 Concerning the Co-ordination of Procedures for the award of Supply, Works and Services Contracts By Certain Entities Operating in the Water, Energy, Transport and Telecommunications Sectors (OJ 1993, No. L199 p.84). At the time of writing it is proposed to replace this directive with a new Directive on utilities procurement (see COM (2000) 276 final). The expected time frame for adoption and national transposition of this proposed Directive is the same as for the proposed directive on public contracts ("State of Play Document (December 2002)," *supra*.

14. For discussions see Thompson 2001 and Williams 2001, 2001a and 2002.

15. Case C-25/98 *Commission* v. *France* ("*Nord Pas-de-Calais*") (2000), judgment of September 26, 2000.

16. Case C-513/99 *Concordia Bus Finland Oy Ab (formerly Stagecoach Finland)* v. *City of Helsinki & HKL-Bussiliikenne*, judgment of 17 September 2002.

17. Case 45/87 *Commission* v. *Ireland (Dundalk Water)* [1988] ECR 4929.

18. Case C-359/93 *Commission* v. *Netherlands (UNIX)* [1995] ECR I-157.

we have seen these include environmental protection so that such measures will be lawful, provided that they are proportionate. It would, therefore, be permissible under the Treaty to impose non-discriminatory product-related specifications as to the environmental performance of products, provided that these requirements have not already been harmonised at Community level, provided that they truly relate to environmental justification, and provided that they are no more restrictive of intra-Community trade than necessary.

It does appear that in the procurement context these rules imply a general principle that specifications must not be drawn up in such a way as to exclude products which meet the authority's performance requirements (Arrowsmith 1996a) so that environmental specifications, like others, should be expressed whenever possible in terms of performance or that, where specific products or processes are referred to, the specification should add "or equivalent." That being the case, an issue arises as to when a product will be said to be "equivalent" to that specified by the public authority. Advocate-General Darmon in *Dundalk* (*supra*) suggested that a product should be so regarded when it has been allowed onto the market in any Member State.

This has, however, been criticised as limiting "government's policy choices to an unacceptable degree"(Arrowsmith 1996a at p. 584), a criticism which is particularly apt in respect of environmental specifications. If authorities are to embrace their "shared responsibility" for the environment they must be permitted to set high environmental specifications and not be forced to accept works, goods or services which attain only lower standards accepted for general market access elsewhere in the Community. This is particularly so since Member States are themselves permitted by article 176 EC to adopt higher levels of environmental protection than those laid down by Community legislation, so long as the measures are compatible with the EC Treaty and are notified to the Commission. However, the level set must not be such as to result in discrimination - i.e. such as where they have the effect of improperly reserving the contract to domestic suppliers. Framing environmental requirements in a specification at a standard intended to exclude non-domestic suppliers would, of course, be discriminatory. Framing them at a objectively stated standard apt to further a contracting authority's chosen environmental objective would not, however, necessarily be discriminatory just because only a few undertakings are capable of meeting that standard (see the *Judgment* in *Concordia Bus Finland*, *supra*).

The further rules as to specifications contained in the EC public procurement directives are "without prejudice to the legally binding national technical rules" of Member States. Thus, contracting authorities and their contractors/suppliers/service providers remain bound by national and Community environmental legislation (provided that this legislation is itself compatible with the Treaty and applicable Community law).

The Directives' rules require that specifications be drawn up by reference to European specifications and, in the absence of these, by reference to international or national standards.[19] This would apply in the environmental area, as elsewhere. The Commission's *Communication* has emphasised that this requirement amounts, however, only to an obligation to refer to such European documents as a benchmark and does not imply that contracting authorities are bound to purchase only products or services conforming to these. Suppliers have the possibility of offering alternative solutions which, if equivalent, contracting authorities must accept (the *Communication*, p. 10.)

The Commission's *Green Paper on Public Procurement in the EU* (EC Commission, 1996) did, however, indicate that efforts should be made to develop European standards or common technical specifications and gave as an example the "European eco-label, complying with Community law"

19. See Directive 93/36 (supplies), article 8(2); Directive 93/37 (works), article 10(2); Directive 92/50 (services), article 14(2); and Directive 93/38 (utilities), article 18(2)).

under Regulation 880/92. It appears, therefore, that a specification, requiring that products meet the criteria for the award of the European eco-label would be permissible.

Finally, the *Communication* also makes clear that, in the absence of European and national standards dealing with the environmental performance of goods and services, contracting authorities are free to specify a higher level of environmental performance than that laid down in legislation or standards, provided that this does not discriminate against tenderers from other Member States.

Specifying product characteristics

The directives' definition of "technical specifications" appears quite narrow at first sight. Annex III of the Public Supply Contracts Directive (93/36), for example, defines the term as meaning

> "the totality of the technical prescriptions contained in particular in the tender documents, defining the *characteristics required of a material, product or supply*, which permits [it] to be described in a manner such that it *fulfils the use for which it is intended* by the contracting authority. These shall include levels of quality, performance, safety or dimensions, including the requirements applicable to the material, the product or the supply as regards quality assurance, terminology, symbols, testing and test methods, packaging, marking or labelling." (emphasis added)[20]

The Commission's view is that the concept of "technical specification" includes "the possibility of prescribing the basic or primary materials to be used, *if this contributes to the characteristics of the product or service* in such a manner that it fulfils the use for which it is intended by the contracting authority" (the *Communication*, p. 11, emphasis added.) In the Commission's view this means that the procuring authority may require that, for example, the window frames of a building should be made of wood rather than plastic, or that recycled glass or other recycled or reused materials must be used. Since the definition of "technical specification" focuses upon a product's fitness for post-procurement use it does not easily seem to encompass non-product-related PPM requirements. The Commission's view is that although the definition does "not explicitly refer to production processes" procuring authorities may require the use of a specific production process "if this helps to specify the performance characteristics (visible or invisible) of the product or service" and "this implies that the product differs from identical products in terms of its manufacture or appearance (whether the differences are visible or not) because an environmentally sound production process has been used, e.g. organically grown foodstuffs, or 'green' electricity.[21] Contracting authorities must be careful that the prescription of a specific production process is not discriminatory" (the *Communication*, p. 11).

The difficulty that arises from this guidance is that, although appearing at first sight to advise that only product characteristics or product-related PPM requirements may be specified, the examples given to illustrate permissible requirements include some, namely "green electricity" in respect of which the PPM requirements in question simply do not affect the "performance characteristics" of the product at the consumption stage. "Green" electricity is, as a matter of

---

20. Similar wording can be found in the definition of "technical specifications" in annex III of the Public Works Directive (93/37), and the Public Services Directive (92/50) and in article 1(8) of the Utilities Directive (93/38).

21. In the *Communication*, the Commission intentionally avoided references to the non-product related PPM's and product-related PPM's.

"performance characteristics" entirely the same as electricity produced using non-green technologies. The same might be true of some organically grown foods (although the possibility, for example, of minute pesticide residues in non-organically grown foodstuffs might justify the conclusion that the use of organic PPMs do result in an "invisible" "performance characteristic"). It is therefore unclear from this guidance whether in the Commission's view non-product-related PPM requirements are precluded or whether they may be acceptable where they contribute to "the characterising of the product" in the minds of consumers even though (as in the case of "green" electricity) they do not affect the product's innate physical composition or properties.

Such an interpretation might arguably reflect the "shared responsibility" of procuring entities for the environment so as to permit non-product-related PPM requirements to be included in the specifications. To do so might also be justified in light of the requirement of article 6 EC that environmental protection be integrated into the definition and implementation of other Community policies, including in this case, procurement policy; and by the renewed emphasis upon the need to manage a product's environmental impacts throughout its life cycle which informs the integrated product policy.

Variants

In cases where a contract is to be awarded on the "most economically advantageous" basis, the public procurement directives allow contracting entities to lay down a standard specification whilst indicating that tenders complying with one or more defined variants of that specification (e.g. variants allowing for a higher degree of environmental performance) will be permitted. This allows contracting authorities to receive a range of solutions (within the permitted variants) to their procurement needs offering different balances between financial considerations and their environmental objectives (the Communication, *supra*, para. 1.4) . Contracting authorities are required to state in their tender notices the minimum specifications to be met by variants and, where variants are not permitted they are required to say so in their tender notice.[22]

Eco-labelling and environmental management systems

The *Communication* defines "eco-labelling" as referring to the award of the label on a *voluntary* basis to products fulfilling specific criteria, and intended to inform consumers about environmentally sound products, the criteria being "based on the lifecycle of the product and relat[ing] to different aspects, such as: performance of the products, materials contained in the products, production processes, take back and recycling, user instructions and consumer information" (the *Communication*, p. 12). Since all of these aspects are regarded as constituting "technical specifications" the Commission concludes that a requirement that a product conform to the criteria of a particular eco-label scheme (such as the Euro eco-label, national eco-labels, pluri-national eco-labels and private eco-labels) is itself a permissible "technical specification" *provided* that the contracting authorities do not limit the means of proof only to the production of the eco-label certificate itself since access to a particular eco-labelling scheme may not in practice be equally available to tenderers from other countries. The contracting authority is entitled, however, to provide that a product having the specified eco-label certificates shall be deemed to comply with the specification but must also accept other evidence of conformity including, for example, test reports.

---

22. Directive 93/36 (supply), article 16; Directive 93/37 (works), article 19; Directive 92/50 (services), article 24; and Directive 93/38 (utilities), article 34(4).

On the other hand, the Commission indicates that "[r]equirements which do not relate to the production itself, like the way how the firm is run…are not technical specifications and can therefore not be made mandatory" (the *Communication*, p. 11). It appears therefore that a firm's adherence to an environmental management system cannot be included in specifications.

3.2 Qualification and selection

Technical capacity

The Commission's *Green Paper on Public Procurement in the EU* (EC Commission 1996 at para. 5.50) suggested that "under certain conditions, environmental protection objectives [may] be included among the criteria for selecting candidates" and that such criteria "are designed to test candidates' … technical capacity and may therefore include environmental concerns depending on the expertise required for specific contracts." The selection grounds are in fact further limited, for public contracts, to those relating to "economic, financial and technical capacity." Utilities may, however, prescribe any "objective criteria and rules" (as to which see below). Accordingly, in the Commission's view, the EC public procurement directives do allow environmental factors to be taken into account in qualification/selection but only to the extent that they relate to "technical capacity" and only to the extent that they relate to the tenderer's ability to perform the contract in question.

Where the technical specification does legitimately provide environment-related requirements, contracting authorities can have regard to the capacity of the tenderers to meet those requirements. In doing so they may, however, only require production of the information prescribed in that regard by the directives themselves and that information "must have a direct link to the subject matter or the execution of the contract" (the *Communication*, p. 15). Permitted information as to technical capacity that might be relevant to environmental information includes; a statement of tools, plant and technical equipment available to the tenderer; a description of the tenderer's technical facilities, its measures for ensuring quality and its study and research facilities; and a statement of the technicians and technical bodies which the tenderer call upon in executing the contract. Furthermore, where the subject matter of the contract requires specific environmental know-how (the Commission gives the example of the construction of a waste treatment plant) then specific experience in respect of such contracts may be included amongst selection criteria.

Environmental management systems

It appears that adherence to an environmental management and audit system can be relevant as a means of proof of technical capacity where the specific system in question has an impact on the quality of the firm's products or on its capacity to execute a contract in accordance with the contract's environmental requirements. Thus, the Commission concludes that "…whenever elements of a company's or organisation's environmental programme and management scheme could be regarded as one or more of the references that could be required for establishing a company's technical capacity the EMAS registration could serve as a means of proof" (the *Communication*, p. 17.) It appears therefore, that contracting authorities can explicitly state in their contract documents or tender notice that whenever potential tenderers have an EMAS system which covers the requirements as to technical capacity, it will be accepted as sufficient proof of that capacity. On the other hand, such authorities may not exclude other means of proof, such as, for example, a certificate under ISO 14001 as to do so would be regarded as discriminatory since access to a particular scheme may not in practice be equally available to tenderers from other countries and since, such schemes being voluntary, some equally qualified tenderers may have chosen not to adhere to the scheme.

So far as utilities' procurement is concerned, the relevant directive allows contracting entities to base selection upon such "objective criteria and rules" as they may establish (Directive 93/38, articles 30[2] and 31[1]). This seems to give the procuring entity at least as broad a discretion to lay down environmentally based selection criteria as to "technical capacity" as do the public procurement directives. It seems possible that it also gives a utility an ability to set selection criteria that are unconnected to the tenderer's capacity to perform the contract as specified, but which are instead based upon "objective criteria" relating to the environmental performance of the tender's organisation as a whole. This also would appear to entitle the utility to use adherence to an environmental management and auditing scheme as one of the criteria for selection, provided that the criteria for adherence to the scheme are themselves "objective."

Environmental crime or misconduct

The public procurement directives allow contracting authorities to exclude contractors found guilty of an offence concerning their professional conduct or of grave professional misconduct.[23] It is generally assumed that these factors also potentially fall within the "objective criteria" that utilities may adopt for selection of tenderers under the Utilities Directive (93/38). This, therefore, allows contracting entities to exclude tenderers from selection where they have been convicted of environmental crimes (such as pollution of watercourses or the breaking of conditions attached to discharge consents etc.). The concept of "grave professional misconduct" is not yet defined by EC legislation or case law but it seems possible that it might apply in the case where a tenderer has been the subject of an adverse decision by a national environmental regulatory agency but in circumstances in which the agency has chosen not to prosecute, perhaps accepting instead the tenderer's agreement to take remedial action.

3.3 Compliant tenders – "additional criteria" – "contract compliance"

When letting a contract a procuring entity may wish to impose upon the successful contractor obligations that are not directly connected with the specific objective of the contract itself but which pursue secondary policy goals. Thus, for example, an authority letting a contract for the construction of an administrative office may wish to include contractual conditions requiring the successful tenderer to participate in social or environmental programmes of one sort or another. The extent to which it is permissible under the directives for authorities to do so, and if it is permissible, the extent to which such authorities may have regard to the conditions in question when selecting contractors or awarding the contract, has been the subject of recent case law. In principle, however, the difficulty arises because, as the Commission itself acknowledges, nothing in the directives constrains the right of procuring entities to decide for themselves what they wish to procure and the terms on which it will do so (although, as already noted, the EC Treaty itself prohibits conduct that amounts to discrimination against suppliers from other Member States). If an authority decides that it wishes to procure, for example, the construction of a building, but that the construction contractor awarded the contract must undertake to participate in a programme of skills training for the local unemployed, or to contribute to an environmental clean up in the procuring entity's area ("secondary policy contract conditions") that, in principle, is a matter of free choice for the authority. If, however, in a particular case it would be more difficult for a contractor from another Member State than a domestic contractor to comply with the secondary policy contract conditions the latter may infringe the rule against discrimination on grounds of nationality enshrined in the Treaty.

---

23. Public Directive 93/36 (supply), article 20(1)(c) and (d); Directive 93/37 (works), article 24(c) and (d); and Directive 92/50 (services), article 29(c) and (d).

In the absence of such infringement, (which would need to be determined on a case-by-case basis) any firms submitting tenders would, if they wish to be considered for the award of the contract, normally be required to accept the secondary policy contract conditions just as they would be required to accept the other conditions of the contract. Unless they do so their tenders will not be "compliant" in the sense that they will not be responsive to the authority's invitation to tender. The principle of equality of tenderers requires that such non-compliant bids be rejected. In principle this issue is quite separate from the process of qualification/selection and from the contract award stage. Under the directives authorities are only required (variants apart) to select tenderers from amongst those who have submitted compliant tenders. Equally, the contract award criteria are intended to be applied to determine to which of the compliant tenderers the contract should be awarded.

The Court of Justice first considered the question of secondary policy contract conditions in the *Beentjes* case[24] in which a Dutch Court had asked it to decide whether an awarding authority could oblige tenderers to undertake to employ a quota of long-term unemployed persons in the performance of the contract. The Court ruled that such a condition has no relation either to selection (the checking of contractors' suitability on the basis of their economic and financial standing and their technical knowledge and ability) or to the criteria for the award of contracts as referred to in the directive. Nonetheless the Court held that this "additional specific condition" was not in itself incompatible with Community law but ought to have been mentioned in the relevant contract notice. This analysis was entirely consistent with the view expressed above that secondary policy contract conditions, whilst relevant to the question as to whether a tender is compliant, are not relevant to the selection or award processes contemplated by the directives. The Commission's subsequent interpretation of *Beentjes*[25] has, however, been problematic. Whilst stressing (quite rightly) that such conditions must not be discriminatory and may not be used as selection or award criteria, the Commission has seemed to imply that the contract terms in question must be disregarded by an authority when deciding whether particular tenders must be rejected as non-compliant.

The problem was considered by the Court of Justice in *Nord Pas-de-Calais* (*supra*) in which a local authority required tenderers for certain works contracts for the renovation and rebuilding of schools to propose participation in the local policy against unemployment. The Court rejected the Commission's interpretation of *Beentjes*. Instead it took the view that the "additional criteria" in that case, because they led to the exclusion of a bidder, must have been regarded as "a criterion for the award of the tender" and, since such conditions were not ruled *a priori* unlawful in *Beentjes*, they were to be regarded as lawful. Furthermore, since the Commission had not alleged that the additional criterion was discriminatory (which, if established would constitute an infringement of the Treaty) or that there had been a failure to publish it in the contract notice (in which case there would have been an infringement of the Works Directive) it was to be regarded as lawful. This outcome may, however, need to be regarded as specific to the case. Should the Commission chose to plead the point in future cases, it may not be difficult to establish that such an "additional criterion" does indeed tend to have discriminatory effects upon suppliers from other Member States who may find it more difficult than local suppliers to conform to the social criterion in question. Equally, the reasoning in *Nord-Pas-de–Calais* does itself seem suspect. As one commentator has put it, the Court's reasoning seems to result from a confusion between questions of compliance and the prescription of award criteria (see Arnould 2001 at p. NA15). The Court, however, failed to distinguish between the question whether a bid is

24. Case 31/87 *Beentjes* v *Netherlands State* [1988] ECR 4635.

25. EC Commission (1998) at points 4.3 and 4.4; (1996) at points 5.38 *et seq*.; and (1989). See also the *Communication* (supra) at para. 3.4 in which the Commission emphasised that additional criteria such as those in *Beentjes* (*supra*) must not have any direct or indirect [adverse] impact in those submitting bids from other Members States and must be expressly mentioned in the tender notice. The Commission added that "[t]his could be equally applicable to conditions relating to environmental protection or performance" (*ibid*.).

compliant, a question in respect of which the awarding authority has no margin of discretion (Arnould 2001 at pp. NA15 and 16), and the quite distinct question as to the permissible award criteria applicable to compliant bids (which imply a margin of discretion for the contracting authority within the award criteria prescribed by the directives).

Be that as it may, however, the current position resulting from *Nord Pas-de-Calais* seems to be that criteria additional to those specified as award criteria by the directives can be used *as award criteria* provided that they are specified in contract notices as required by the directive and are not discriminatory. This means that "additional criteria" related to environmental goals may in principle be permissible as award criteria when the contract it let on the "most economically advantageous" basis. This does, however, raise difficulties in terms of lack of transparency and increased uncertainty as to the application of some of the directive's procedural rules (Arnould, 2001 at pp. NA17-18).

3.4 Contract award criteria and weightings

Contracts covered by the directives must be awarded on the basis either of "the lowest price" or to the "most economically advantageous" tender. Environmental factors have no part to play at the award stage when lowest price is the sole criterion. If "most economically advantageous" criteria are adopted they must observe the principle of non-discrimination. However, as the *Green Paper on Public Procurement in the EU* (EC Commission 1996 at para. 5.51) made clear, the Commission's view prior to *Concordia Bus Finland* (*supra*) was that environmental factors "could play a part in identifying the most economically advantageous tender, but *only* in cases where reference to such factors makes it possible to gauge an *economic advantage* which is specific to the works, supplies or services covered by the contract and *directly benefits the contracting authority or contracting entity*" (emphasis added).

This point was re-iterated by the Commission in its *Communication* in which it stated that in order to be permissible award criteria must "concern the nature of the work to be carried out or the manner in which it is done" (the *Communication*, p. 19) and "the criteria applied shall generate an 'economic advantage' for the contracting authority" (the *Communication*, p. 20). Thus, although general "environmental soundness" cannot be regarded as a permissible criterion since it is not thought to be measurable and does not necessarily bring an economic advantage to the contracting authority (the *Communication*, p. 20), it may be possible to achieve the same objectives by expressing the requirement in terms of "specific, product-related and economically measurable criteria" (the Commission gives the example of the rate of energy consumption). In the Commission's view such criteria relate "in most cases" to the quality or performance of the product or the execution of works or services (i.e. to quality or technical merit which are specifically referred to in the directives as being factors which can fall within the "most economically advantageous" criteria). Equally, all costs borne by the contracting authority during a product's life cycle can be taken into account when assessing the "most economically advantageous tender," including purchase cost, direct running costs (including energy, water and other resources used during the lifetime of the product), maintenance costs, "spending to save" (e.g. by investing in insulation to reduce heating costs), as well as the cost of recycling or disposal of the product at the end of its life.

As a general rule, however, the Commission's position has been that "externalities" are not borne by a purchaser, but by society as a whole and that they cannot therefore generally be taken into account under the "most economically advantageous" criteria (the *Communication*, p. 22). If the Commission is right externalities can only be taken into account under those criteria if, in specific cases, the external costs due to the execution of the contract are borne directly by the purchaser of the

product or service in question.[26] Even then danger of discrimination may arise since, for example, taking into account the external costs of transport might tend to discriminate against non-national suppliers since the Community has no harmonised system for the economic evaluation of such external costs (the *Communication*, p. 22).

The Commission's restrictive approach to the interpretation of the "most economically advantageous" award criteria arose from the word "economically" as it appears in the directives. There is no doubt, however, scope for argument that "economic" advantages" could be construed to include economic advantages accruing to society as a whole, and need not be limited to economic advantages of direct benefit to the procuring authority. On such a basis the elimination of pollution (and consequent clean-up or health care costs) might, for example, be said to constitute "economic advantages" even if the clean up or health care costs would not fall upon the particular contracting authority but upon another government entity. Similarly, the preservation of landscape or the conservation of animals, plants and their habitats might be said to produce economic advantages by attracting tourists; or by improving the quality of life and so attracting potential work force to the area. The Commission's interpretation is, however, much narrower and even when it is possible to link environmental protection with economic advantages it may still be impossible to say that the advantage is "specific" to the works, supplies or services covered by the contract, or that it is "measurable" or that it "directly benefits" the contracting authority.

Concordia Bus Finland

As noted above, the Court of Justice has recently given judgment in the *Concordia Bus Finland* case (*supra*). The case concerned questions referred to the Court of Justice by a Finnish Court directly relating to the permissibility of the use of environmental award criteria.

The first question addressed in the case was whether the Public Service Contracts Directive (92/50) permits the City of Helsinki when seeking to let a contract for bus transportation services to take into account the level of nitrous oxide and noise emissions from potential contractors' bus fleets when applying "most economically advantageous" criteria. The City of Helsinki had sought to do so by awarding extra points in the tender evaluation (as announced by prior publication) to tenderers whose fleets had nitrous oxide emission and noise levels below a stated level (see Thompson 2001).

The Court held that an environmental protection criterion that is not itself of a purely economic nature can, in principle, figure amongst "most economically advantageous" award criteria. This followed from the facts that article 36(1) of the directive, which lists examples of individual criteria that authorities are free to adopt when applying the "most economically advantageous" approach, was not exhaustive; and that it expressly listed the "aesthetic characteristics" of tenders.[27] From this the Court concluded that "[i]t cannot be excluded that factors which are not purely economic may influence the value of a tender from the point of view of a contracting authority" (paras. 54 and 55 of the *Judgment*). Furthermore, the Court held that, in light of the objective of the

26. The implications in terms of economic efficiency of not allowing for such 'internalisation' is discussed in Chapter 4. This issue is increasingly important as procurement becomes more decentralised, resulting in more instances in which such externalities arise.

27. The Court did not expand upon the point, but it seems to have assumed that "aesthetic characteristics" are not necessarily economic in nature. On that assumption the inclusion of such a factor in the list contained in article 36(1)(a) would indeed suggest that "most economically advantageous" criteria are not limited to criteria conferring economic advantages. Advocate General Mischo (who had come to the same conclusion as the Court on the point) had expressly adopted such reasoning (Advocate General Mischo's *Opinion*, 13 December, 2001, para. 104).

directive (to co-ordinate procedures for the award of public contracts in order to eliminate barriers to the free movement of goods and services) and of the principle stated in article 6 EC (that environmental protection requirements must be integrated into the definition and implementation of Community policies and activities) the adoption of criteria relating to the preservation of the environment could not be excluded when a contracting authority is applying the "economically most advantageous" approach (paras. 56 and 57 of the *Judgment*).

Thus the Court clearly rejected the view that an environmental award criterion is only permissible if it has an *economic* character, or if it relates to a *direct* economic benefit attributable to the contracting authority. On the contrary, the Court considered that "[i]t cannot be excluded that factors which are not purely economic may influence the value of a tender from the point of view of the contracting authority" (para. 55 of the *Judgment*). This does not mean, however, that the Court considered that the ability of contracting authorities to rely upon environmental contract award criteria is unlimited. Firstly, the permissibility of the use of an environmental award criteria does not excuse a contracting authority which has opted to let a contract on the "most economically advantageous" basis from assessing the "value" to the authority of the various competing tenders by applying all of the award criteria (including non-environmental criteria) that it has listed in its tender notice. In other words, although the Court considered that certain environmental contract award criteria are in principle permissible it nonetheless affirmed that the function of award criteria should be to determine the most economically advantageous tender, overall.

Furthermore, the authority's ability to rely upon environmental award criteria is subject to four specific constraints, namely, requirements that each award criterion must:

- be "linked to the subject-matter of the contract" (para. 59 of the *Judgment*);
- not have " the effect of conferring on the contracting authority an unrestricted freedom of choice as regards the award of the contract to a tenderer (para. 61 of the *Judgment*);
- be applied in conformity with all the procedural rules laid down by the directive, including those on advertising, so that all criteria must be expressly stated in the tender notice, where possible in descending order of importance (para. 62 of the *Judgment*); and,
- comply with the fundamental principles of Community law including, in particular, the principle of non-discrimination (para. 63 of the *Judgment*).

The Court considered that the particular environmental criteria at issue in the case satisfied all the above requirements. They related to the level of nitrogen oxide emissions and noise levels of the buses to be used in providing the public transportation services for which the authority had invited tenders. As such they were to be regarded as linked to the subject-matter of a contract for the provision of urban bus transport services (para. 65 of the *Judgment*). Furthermore, the point system according to which the environmental criteria were to be applied did not confer unrestricted freedom of choice on the contracting authority since it required tenders to meet specific and objectively quantifiable environmental requirements (para. 66 of the *Judgment*). Furthermore, the criteria had, indeed, been expressly mentioned in the relevant tender notice (para. 67).

The second important question referred to the Court in *Concordia Bus* was whether the use of environmental award criteria is prohibited if it appears that, since few operators in the sector can meet the criteria, only the transport enterprise of the authority which is inviting tenders is in fact capable of submitting a tender satisfying them.

The Court regarded this question as relating to the application of the principle of non-discrimination and held that the environmental criteria in the case had not in fact offended that principle. The criteria were objective and applied without distinction to all tenders, were directly linked to the fleet offered, and were an integral part of a system of awarding points which system also allowed for the awarding of points on the basis of other criteria linked to the fleet (para 83 of the

Judgment). In such a context the Court held that the fact that the environmental criteria could be satisfied only by a small number of undertakings, one of which was an undertaking belonging to the contracting entity, did not in itself constitute a breach of the principle of non-discrimination (para. 85 of the *Judgment*).

Finally, in response to the third question referred by the national court, the Court confirmed that the same interpretation would apply if the contract at issue, instead of being subject to the Directive 92/50 on Public Service Contracts had been subject to the Utilities Directive (Directive 93/38 co-ordinating the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors) (para. 93 of the *Judgment*). In doing so, however, it expressed a broader view that the wording of the relevant provisions of each of the procurement directives (Directives 92/50 on Public Services Contracts, Directive 93/36 on Public Supply Contracts, Directive 93/37 on Public Works Contracts, and the Directive 93/38 on Utilities Procurement) was "substantially the same" (paras. 88 and 89), that those directives are intended to attain "similar objectives in their respective fields" (para. 90), and that the principle of equal treatment "lies at the heart of all of the public procurement directives." It considered, furthermore, that nothing disclosed in the case had indicated that the interpretation of the principle of equal treatment as regards a contracting entity's choice of contract award criteria "should depend in this case on the particular directive applicable to the contract in question" (para 92 of the *Judgment*). From this it appears that, although the Court did not expressly say so, it is likely that its interpretation as regards the use of environmental criteria under Directive 92/50, and as to the application of the non-discrimination rule in relation to such criteria, would be equally applicable under any of the other procurement directives, not just Directive 93/38 .

The *Judgment* of the Court of Justice permits procuring entities greater freedom than the Commission had acknowledged hitherto to use contract award criteria which take account of environmental impacts occasioned in *performance* of public contracts (consumption externalities). This does not, however, mean that it is admissible to use environmental criteria relating to production externalities (e.g. a points system allowing points to be awarded if tenders offer to provide the goods to be procured containing a specified percentage of recycled material where the use of recycled material does not affect the intrinsic characteristics of the product supplied). This question, which did not arise on the facts of *Concordia Bus Finland,* remains open. On the one hand, it might be argued that such criteria would not be "linked to the subject-matter of the contract" if a narrow interpretation (to the effect that award criteria must be linked to *performance* of the contract) were to be put on that phrase. On the other hand, if a broader interpretation were adopted (perhaps reflecting the "integration" principle in article 6 EC) it might be argued that a criterion relating to PPMs not affecting the characteristics of the procured product (such as the above requirement as to recycled content) is indeed linked to the subject matter of the contract since it is linked to the production of that product, and hence to the product itself.

Finally, it should be noted that in cases where the "most economically advantageous" criteria are adopted, although the directives do require prior publication of the contract award criteria, and although they also prohibit procuring entities from applying criteria other than those which have been published, they do not require that the published details indicate the precise weighting, if any, to be given to particular criterion. Instead the directives simply require publication of the criteria "where possible in descending order of importance." The Commission, however, currently proposes amending the directives so as to make it compulsory for procuring entities to state in its prior publication of award criteria the relative weighting to be given to each criterion. [28] Moreover, the

28. See the Proposal for a Directive on the Co-ordination of procedures for the award of public supply contracts, public service contracts and public works contracts; and the Proposal for a Directive on the Co-ordination of procedures of entities operating in the water, energy and transport sectors (both supra).

Court of Justice ruling indicated that criteria should, where possible, be listed in descending order of importance in the tender notice (*Judgment of the Court*, para 62).

4. The North American Free Trade Agreement

NAFTA created a free trade area comprising Canada, the United States and Mexico but did so in a way that was specifically intended to accommodate environmental concerns. Thus the Preamble to NAFTA recites that the Parties undertake to achieve the objectives of the Agreement "in a manner consistent with environmental protection and conservation" (Eleventh Recital) and to "promote sustainable development" (Thirteenth Recital). Furthermore, NAFTA article 104 provides that in the event of any inconsistency between its terms and the specific trade obligations provided by certain multilateral and bilateral environmental conventions[29] the obligations of those conventions are to prevail (provided that the where a Party has a choice between equally effective and reasonably available means of complying with such obligations, it chooses the alternative that is least inconsistent with NAFTA). Equally, NAFTA also makes (non-mandatory) provision exhorting the Parties not to waive or derogate from environmental protection standards in order to attract or maintain inward investment (article 1114(2)). Perhaps unexpectedly, NAFTA Chapter 11, which sets standards of treatment of foreign investors and a binding arbitral mechanism for resolving disputes between governments and foreign investors has, however, proven to have a potentially significant impact upon domestic environmental regulation within the Parties (Mann 2000, Dhooge 2001 and Gantz 2001).

Environmental protection is also the subject of a so-called side agreement to NAFTA, the North American Agreement on Environmental Cooperation (NAAEC). This provides for the establishment of the Commission for Environmental Co-operation (CEC), charged, *inter alia*, with making recommendations concerning a range of environmental issues including specifically eco-labelling (NAAEC article 10(2)(r)) and "the environmental implications of goods throughout their life cycles" (NAAEC article 10(2)(m)). (See also Mann 2000). More generally, the CEC is also tasked with being an institutional link between NAFTA and the NAAEC (and between trade and environmental law) by assisting the Free Trade Commission (set up pursuant to NAFTA) in respect of environment-related matters generally and, more specifically, by making recommendations as to the avoidance of environment-related trade disputes and by constituting a focus for inquiry and comment on trade and environment issues. The objectives of NAAEC (stated in NAAEC article 1) include the fostering of environmental protection and improvement in the Parties' territories, promoting sustainable development based on co-operation and mutually supportive environmental and economic policies, increasing co-operation between the Parties on a range of environmental matters, supporting NAFTA's environmental goals, enhancing compliance with environmental laws, promoting pollution prevention policies and transparency, and promoting "economically efficient and effective environmental measures." A further objective is to "avoid creating trade distortions or new trade barriers" (NAAEC article 1(e)). NAAEC also requires the Parties "with the aim of achieving high levels of environmental protection and compliance" to "effectively enforce" their own environmental laws (NAAEC article 5(1)) and provides two processes for the policing of that obligation, namely (i) reviews by the CEC secretariat following the filing of submissions by citizens or NGOs (NAAEC Articles 14, 15); and (ii) a dispute resolution between the states concerned leading, in the case of a finding of persistent failure to "effectively enforce" to the imposition of sanctions (NAAEC part V).

Government procurement is dealt with by Chapter 10 of NAFTA. This applies to specified federal government entities (those listed in NAFTA annex 1001.1a-1), specified government enterprises (those listed in NAFTA annex 1001.1a-2) and to a number of state or provincial entities (listed in NAFTA annex 1001.1a-3) in respect of the procurement of specified goods, services and

29. Specifically, CITES, 1973; the Montreal Protocol, 1987; the Basel Convention; and certain bilateral Agreements listed in NAFTA annex 104.1.

construction services (i.e. those listed in NAFTA annexes 1001.1b-1, 1b-2, and 1b-3) where the value of the contract equals or exceeds stated thresholds. This coverage is, however, subject to transitional provisions for Mexico (NAFTA article 1001(2)a and annex 1001.2a.), to certain reservations by each of the States Parties (NAFTA article 1001(2)b and annex 1001.2b); and to the operation of other value thresholds and valuation rules in respect of specific matters as between the Canada and the United States (NAFTA article 1001(2)c and annex 1001.2c). Chapter 10 only applies to a limited number of sub-central governmental entities. Annex 1001.1a-3 merely indicates that "coverage under this annex will be subject of consultations with state and provincial governments in accordance with Article 1024." The outcome is that the Chapter applies only in respect of thirty seven of the fifty US states, only twenty of which have agreed to GPA coverage of most or all of their executive agencies, and seventeen of which have only agreed to coverage of selected executive agencies or have excluded important sectors (Tiefer 1997).

In respect of procurements governed by Chapter 10, the Parties are to accord national treatment and most-favoured-nation treatment to suppliers of goods and services of another Party (NAFTA article 1003(1)) and are not to discriminate against a locally based supplier on the basis of the degree of foreign ownership (article 1003(2)a), nor on the grounds that the goods or services offered originate in one of the other Parties (article 1003(2)b). Chapter 10, however, permits the Parties to deny the benefit of the Chapter to service suppliers from another Party where that service is supplied by an enterprise that is owned or controlled by persons of a non-Party and that has no substantial business activities in the territory of a Party (article 1005(1)). It may also deny the benefit of the Chapter to an enterprise that is owned or controlled by nationals of a non-Party on certain other grounds (articles 1005(2) and 1113(1)(a)) Chapter 10 specifically prohibits "offsets," defined as "conditions imposed or considered by an entity prior to or in the course of its procurement process that encourage local development or improve its Party's balance of payments accounts, by means of requirements of local content, licensing of technology, investment, counter-trade or similar requirements"(article 1006).

4.1 Technical specifications

The term "technical specification" is defined (NAFTA article 1025) as referring to a specification which lays down "goods characteristics or their related processes and production methods, or services characteristics or their related operating methods, including the applicable administrative provisions. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a good, process, or production or operating method."

This clearly encompasses specifications laying down environmental characteristics of goods or services, and those laying down process and production methods relating to such "goods characteristics" i.e. product-related PPM requirements. Such requirements are therefore subject to Chapter 10's rules governing "technical specifications." These are provided by article 1007(1) which requires each Party to ensure that its entities must not prepare, adopt or apply any technical specification with the purpose or the effect of creating unnecessary obstacles to trade. The Parties are, furthermore, to ensure that any technical specification prescribed by their entities are specified, "where appropriate" in terms of performance criteria rather than by reference to design or descriptive characteristics (article 1007(2)(a)), and based on international standards, national technical regulations, recognised national standards, or building codes (article 1007(2)(b)).

The wording of the first sentence of NAFTA's definition of "technical specification" appears to exclude non-product-related PPM requirements from qualifying as "technical specifications" since it only refers to PPMs relating to "goods characteristics" but not to those which, although they may relate to goods, do not relate to *characteristics* of those goods. This interpretation is supported by the fact that the definition in article 915 of the term "technical regulation" (which also refers to "goods

characteristics or their related processes and production methods") is to be interpreted (according to Note 36 of the Notes attached to NAFTA) as referring to "(a) characteristics or their related processes and production methods for a good, [and] (b) characteristics for a service or its related operating method."

The fact that non-product-related PPM requirements appear to be outside the definition of the term "technical specification" in Chapter 10 causes two difficulties. The first concerns the consequences that might be thought to follow from such an interpretation. One view would be that, because the definition of "technical specification" does not encompass non-product related PPM requirements, such requirements are implicitly *prohibited* and may not be deployed by entities when specifying their requirements. The difficulty with such an approach, however, lies in the very fact that it depends upon an implicit prohibition gleaned from a purely definitional provision. Article 1025 (in which this definition, together with others, is provided) does not purport to provide prohibitions, or indeed any substantive rules, but merely to provide definitions to be applied in respect of substantive rules stated elsewhere in the Chapter. None of the substantive provisions of the Chapter expressly require procuring entities to apply only those requirements that qualify for inclusion in the "technical specification." Nor do they purport specifically to prohibit the use of non-product related PPM requirements. Furthermore, the substantive rules provided by Chapter 10 to govern technical requirements are themselves framed by reference to the defined term "technical specification." Accordingly, it seems at least arguable that if non-product-related PPM requirements cannot qualify as "technical specifications" such requirements may escape the application of the relevant rules altogether or will, at least, be subject to the power of derogation provided by NAFTA (as to which see below).

Eco-labelling

The second difficulty caused by the apparent exclusion of non-product-related PPM requirements from the definition of "technical specifications" relates to the permissibility of eco-labelling requirements. The second sentence of the definition states that the term "technical specification "…may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a good, process, or production or operating method." This language is certainly sufficiently wide to cover eco-labelling requirements where the labelling scheme in question includes product-related PPM requirements. Since it indicates that a specification may deal with labelling requirements "as they relate to….production or operating methods" they would also seem to be sufficiently wide to cover eco-labelling requirements based on non-product-related PPM criteria. Once more this interpretation is supported by the fact that the definition in article 915 of the term "technical regulation"[30] is to be interpreted (according to Note 36 of the Notes attached to NAFTA) as referring to "(c) provisions specifying terminology, symbols, packaging, marking, or labelling for (i) *a good or its related process or production method*, or (ii) a service or its related operating method" (emphasis added). Nothing in this definition, therefore, requires the labelling requirement to relate to process or production methods relating to "goods characteristics." It is sufficient that it merely relates to "a good." The difficulty nonetheless arises as to whether, if non-product-related PPM requirements are indeed themselves excluded from qualifying as "technical specifications" (by virtue of the first sentence of the definition) it can really be permissible (under the second sentence) to include requirements as to qualification under an eco-labelling scheme which itself requires application of non-product-related PPM criteria. If the NAFTA is to be interpreted as impliedly prohibiting non-product-related PPM requirements, it seems at least arguable that it must also be taken as impliedly prohibiting specifications referring to eco-labels incorporating non-product-related PPM criteria.

30. Which also refers to "terminology, symbols, packaging, marking or labelling requirements as they apply to a good, process, or production or operating method".

Equally, of course the potential for discrimination against non-domestic suppliers that can arise when a procuring entity specifies that a product must bear a particular eco-label is relevant under NAFTA as under the GPA. To avoid the possibility that the qualification/verification requirements of a particular scheme may preclude/disadvantage non-domestic suppliers (in which case a specification requiring the use of the label would infringe NAFTA's national or most-favoured-nation treatment rules) it would seem wise to specify compliance with the substantive criteria of a scheme whilst accepting either the label or other proof of compliance.

4.2 Qualification and selection

NAFTA article 1008 requires each Party to ensure that its entities' tendering procedures are "applied in a non-discriminatory manner" and consistently with the rules laid down in articles 1009 to 1016 inclusive. Article 1009(1) specifically applies national treatment and most-favoured nation treatment standards to the process of qualifying suppliers and this is supported by a rule that procuring entities must not misuse the process of qualification in order to exclude suppliers of another Party (article 1009(2)(d).) Furthermore, article 1009(2)(b) provides that the conditions for participation by suppliers in tendering procedures (including financial guarantees, technical qualifications and information necessary for establishing the financial, commercial and technical capacity of suppliers) and the applicable means of verification are to be "limited to those that are essential to ensure fulfilment of the contract in question."

Accordingly, the extent to which a procuring entity will be able to have regard to the environmental qualifications and capacity of its supplier will depend upon the specific requirements of the contract. There may therefore be greater scope in respect of services contracts and construction services contracts where the contract terms prescribe the required mode of performance, as compared to goods contracts, although even in respect of the latter, the capacity of a supplier to supply products having the characteristics (in terms of energy efficiency in use, recyclability and disposal) prescribed by the contract would seem to be "essential" to the fulfilment of the contract. The same might apply to the contractor's capacity to meet product-related PPM requirements. Furthermore, if non-product-related PPM requirements are not impliedly prohibited and were specified in the contract, then conditions for participation that relate to the tenderer's capacity to satisfy those requirements would also be permissible provided that those requirements are stated in the contract.

Article 1009(2)(c) requires that the financial, commercial and technical capacity of a supplier is to be judged both on the basis of its global business activity and its activity, if any, in the territory of the Party of the procuring entity. This provision will usually be advantageous to potential tenderers where they have significant activities outside the country of the procuring entity. It means that the capacity of such an enterprise to meet environmental requirements would have to be assessed not only on the basis of its facilities, staff etc. within the country in which the procurement is taking place, but also by reference to those located in other countries. It is not inconceivable, however, that to the extent that managerial capacity to identify, assess and manage environmental risk is essential to the fulfilment of the contract (as it may, for example, be in respect of construction services for a major project) previous failures by the tenderer successfully to identify assess and manage such risk in respect of projects in other countries would be equally relevant. This is, after all, also part of the enterprise's "global business activity."

All entities are required to publish invitations to participate for all procurements (except in the cases in which NAFTA permits "limited tendering") (article 1010). For most entities this must take the form of a "notice of proposed procurement" containing information prescribed by Article 1010(2) including, *inter alia*, "a description of the nature and quantity of the goods or services to be procured" and "a statement of any economic or technical requirements and of any financial guarantees, information and documents required from suppliers." Clearly, therefore if the environmental

requirements of the contract mean that potential suppliers will require specific technical expertise, or specific equipment or facilities, these requirements as to technical capacity and the related information that is to be required from potential suppliers must be stated in the invitation to participate.

In addition, in the case of selective tendering arrangements, entities maintaining a permanent list of qualified suppliers must publish annually a notice indicating, *inter alia*, "the conditions to be fulfilled by suppliers in view of their inscription on the lists and the methods according to which each of those conditions will be verified" (article 1010(6)(b)). Where a procuring entity provides tender documentation to suppliers this also must contain "all information necessary to permit suppliers to submit responsive tenders", including the information required to be published in the notices referred to above (articles 1013(1) and 1010(2)(h)). The documentation must also include, *inter alia*, a statement of any economic or technical requirements and of any financial guarantees, information and documents required from suppliers, the terms of payment (article 1013 (1)(f),(i)) and "any other terms or conditions" (article 1013(1)(j)). Once more, therefore, if the environmental requirements of the contract mean that potential suppliers will be required to have specific technical expertise, or specific equipment or facilities, these requirements and the related information that is to be required from potential suppliers must be stated.

4.3 Compliant tenders – "additional criteria" – "contract compliance"

To be considered for award, a tender must, at the time of opening, conform to the essential requirements of the notices or tender documentation and must have been submitted by a supplier that complies with the conditions for participation (article 1015(4)(a)). This makes it clear that entities may not award the contract to a tenderer that has submitted a non-compliant tender. This would seem to suggest that, if the contract requires the contractor to fulfil stated environmental obligations or to participate in a stated environmental programme (and that requirement is included in the contract terms incorporated in the tender documentation) then any tender that does not accept those conditions will be non-compliant and should be excluded. The ability of an entity to stipulate such conditions in the first place will, however, be subject to the general prohibition of discrimination (i.e. the national treatment and most-favoured-nation treatment rules in article 1003(1)). Whether conditions requiring participation in a specific environmental programme or compliance with an environmental policy will in fact infringe those rules will need to be determined on a case-by-case basis and will depend upon the nature of the programmes and policies in question and the extent to which compliance is equally open to entities established in the territories of other Parties.

4.4 Contract award criteria and weightings

The tender documentation must also state "the criteria for awarding the contract, including any factors other than price that are to be considered in the evaluation of tenders, and the cost elements to be included in evaluating tender prices…" (article 1013 (1)(h)). Thus, if environmental criteria are to be included as award criteria they must be stated in the tender documentation. NAFTA article 1015(4)(c) further provides that unless a procuring entity decides in the public interest not to award the contract, it must make the award to the supplier that has been determined to be fully capable of undertaking the contract and whose tender is either the lowest-priced tender or the tender determined to be the most advantageous in terms of the specific evaluation criteria set out in the notices or tender documentation. Furthermore, awards must be made in accordance with the criteria and essential requirements specified in the tender documentation." The permitted criteria appear to be broad in that when the "most advantageous" basis is used they are not specifically required to relate to an economic advantage accruing to the procuring entity, still less to such an advantage accruing "directly" to that entity. The choice of evaluation criteria is left entirely to the procuring entity subject only to the rules requiring that they must be as specified in the tender documentation. This would

suggest that under Chapter 10 of NAFTA, procuring entities may include criteria relating to general benefits accruing to the environment itself or to society as a whole rather than just to environmental advantages that produce economic benefits (such as energy efficiency or waste reduction) to the entity itself.

Notably, however, article 1013 does not require that weightings or the hierarchy of comparative importance to be attached to particular award criteria to be stated in the tender documentation. This reserves to the procuring entity the possibility that after the opening of tenders it might adopt weightings emphasising the relative importance of its published environmental (and other) award factors and thereby compromises the principles of transparency and fairness.

4.5 Power of derogation

Provided that such measures are not applied in a manner that would constitute a means of arbitrary or unjustified discrimination between Parties where the same conditions prevail or a disguised restriction between the Parties, nothing in Chapter 10 prevents any Party from adopting or maintaining measures necessary to protect human, animal or plant life or health (article 1018(2)(b).) If the use of non-product-related PPM requirements in specifications is indeed impliedly prohibited by virtue of the exclusion of such requirements from the definition of "technical specification," then it might nonetheless be permissible if justified by this derogation as being "necessary to protect human, animal or plant life of health." Presumably, however, issues may arise (as under GATT) as to whether the derogation is intended to permit only measures protecting the life or health of people, animals and plants *within* the procuring entity's own country or whether it also permits measures protecting life or health in other countries. Equally, there is clearly scope for argument as to the meaning of the word "necessary" and therefore as to the circumstances in which non-product-related PPM requirements may be "necessary" to advance the permitted goals. If non-product-related PPM requirements in specifications are impliedly prohibited but can nonetheless fall within the purview of article 1018, they will be lawful provided that they do not "constitute a means of arbitrary or unjustified discrimination between Parties where the same conditions prevail or a disguised restriction between the Parties." Although this language clearly reflects the wording of the chapeau in article XX of the GATT 1994 the distinctions between the procurement context on the one hand and the import embargo context of *Shrimps* on the other (as to which see above) mean that it is by no means clear that the application of NAFTA article 1018 would necessarily lead to the legal inadmissibility of non-product-related PPM requirements.

5. Australia and New Zealand Government Procurement Agreement

Australia and New Zealand are not parties to the GPA. They have, however, entered into bilateral agreements with each other covering government procurement. First is the Australia New Zealand Closer Economic Relations Trade Agreement (ANZCERTA) of 1983 which seeks to develop closer economic relations, and to eliminate trade barriers, between the two countries. Article 11 of ANZCERTA deals with government procurement and seeks to remove any preferences as between the two countries. Commonwealth of Australia procurement officers are therefore required to treat any New Zealand content in offers received from Australian or New Zealand tenderers as equivalent to Australian content. Likewise, New Zealand Government procurement officers are required to treat Australian content as equivalent to New Zealand content. The Commonwealth of Australia (together with the governments of each of the six Australian States and two Territories) and New Zealand are also parties to the Australia and New Zealand Government Procurement Agreement (ANZGPA, as revised, August 1997). The objectives of the Agreement are to create and maintain "a single ANZ government procurement market", to maximise opportunities for competitive ANZ suppliers and to reduce costs of doing business for both government and industry (ANZGPA, Objectives).

The ANZGPA is to achieve its objective by ensuring that the opportunity exists for ANZ suppliers "to compete on an equal and transparent basis" for government contracts in the Commonwealth of Australia, the Australian States and Territories and in New Zealand; by "ensuring the absence of inter-state and trans-Tasman application of preference schemes and other forms of discrimination in government procurement, based on the place of origin of goods and services;" and by providing a mechanism for co-operation by the Parties in working towards "the greatest possible consistency in contractual, technical and performance standards and specifications, and simplicity and consistency in the application of procurement policies, practices and procedures."

The ANZGPA covers "government procurement" which is defined to cover procurement by departments and other bodies controlled by the Parties (but which excludes procurement by any local authority, body corporate or other legal entity that has the power to contract, except where the Parties have exercised their discretion to determine that the Agreement is to apply (clause 1(e)). The ANZGPA's coverage is also subject to a number of partial and total exemptions listed in annexe I to the Agreement, and to a procedure whereby further exemptions meeting criteria set out in annexe I may be adopted (clauses 6 to 10 and annexe 1). Compliance with the Agreement is to be monitored by the Australian Procurement and Construction Council (APCC) which is to report annually to the responsible procurement Ministers of the Parties and which may draw up administrative guidelines to assist purchasing officers in the application of the Agreement.

The ANZGPA establishes a number of key principles including a national treatment rule (clause 2(c)); a rule requiring non-discrimination in the use of procurement to further other policies (clause 5 as to which see below); and obligations to promote procurement opportunities for ANZ suppliers (clause 2(d)); to achieve maximum practicable simplicity and consistency in the application of procurement policies, practices and procedures (clause 2(f)); to seek to maximise competitive opportunities for ANZ Suppliers while conforming with the Parties' commitments under domestic and international government procurement agreements (clause 3); and not to use any form of procurement practice which discriminates against, is biased against, or has the effect of denying equal access or opportunity to any ANZ supplier (clause 4). A further key principle which is fundamental to the general approach taken by the ANZGPA is the requirement to use "value for money including appropriate whole of life costs and benefits, as the primary determinant in all procurement decisions" (clause 2(e)).

This concept appears to be wide enough to permit procuring entities to take a range of environmental factors into account. It is defined as being "aimed at achieving the best available outcome for money spent in terms of the procuring agency's needs" and the test of the best available value for money "requires relevant comparison of the whole of life costs relating directly to the procurement. Whole of life considerations include fitness for purpose and other considerations of quality; performance; price; delivery; accessories and consumables; service support; and disposal."

Whole of life cost factors that may be environmentally relevant include, energy consumption, reduction and elimination of packaging, and disposal costs. Since they also include "fitness for purpose and other considerations of quality" and "performance" it would appear that if any environmental requirements are specified in respect of a potential purchase as regards the performance of a procured item in use (e.g. discharge or emission standards for machinery, equipment etc) these also would constitute "whole of life cost factors" that may properly be taken into account when ascertaining "value for money." One limitation that seems inherent in this definition arises, however, because the definition is framed in terms of "cost." This might suggest that environmental benefits unrelated to cost may not feature in computations of "value for money." If this were the case, then the fact that the procurement of a particular design of product, or of particular technology, might produce general environmental benefits (e.g. clean air or clean water) unrelated to cost could not be taken into account in applying the "value for money" approach. Furthermore, the test of the best available value for money requires relevant comparison of the whole of life costs

relating *directly* to the procurement. It might therefore be argued that in many cases, even if environmental advantages such as clean air or water can be regarded as related to "cost" they cannot be taken into account because they do not relate *directly* to the procurement, in the sense of relating directly to the specific objective of the procurement i.e. the purchase of a good or service to fulfil a particular function.

Such a view would, however, appear to be unduly restrictive since other parts of the definition of "value for money" suggest a much broader approach. First, the application of the "value for money" principle "is aimed at achieving the best outcome for money spent in term's of the procuring agency's needs." The concept of the "best available outcome" seems apt to cover a range of benefits, not only those related to cost. "Best outcome" must be determined "in terms of the procuring agency's needs" and if, in the procuring agency's view, it is advantageous to ensure environmental benefits unconnected to cost then these ought to be capable of being taken into account. Such an interpretation is supported by the text of clause 2(e) which requires the parties to "use value for money, *including* appropriate whole life costs *and benefits*" (emphasis added) as the primary determinant of procurement decisions. Clearly, "whole life costs" are not the *only* factors that can be taken into account since (i) the word "including" indicates that the following text is not exhaustive; and (ii) the inclusion of the words "and benefits" indicates that benefits are to be taken into account as well as the comparison of whole life costs to which the definition itself refers. In fact, even if a narrow interpretation were to be taken of "value for money" that would not prevent procuring entities having regard to non-cost environmental factors because the ANZGPA does not mandate "value for money" as the only permissible criterion. It merely requires that it be the "primary determinant" of procurement decisions, implicitly acknowledging that other factors may have at least secondary relevance. Indeed, as we shall see when considering the practice of the Commonwealth of Australia, that jurisdiction clearly understands the concept of "value for money" as carrying a wide, rather than narrow meaning, capable of allowing procuring entities a wide discretion to take environmental factors into account in the procurement process.

Secondly, the reference to cost in clause 2(e) describes comparison of costs "relating directly to the *procurement*" and does not (unlike the European procurement regimes as interpreted by the EC Commission) require that, to be taken into consideration, a particular factor must constitute a direct cost benefit *to the purchasing entity*. Where, for example, the cost of avoiding, cleaning up or managing pollution falls upon the state at large then, if a particular product will minimise pollution, the procurement of such a product may be said to relate "directly to the procurement" even if the cost of avoiding, cleaning up or managing pollution is not borne by the particular procuring entity. Thus, even if permissible factors were to be limited only to cost factors, the "value for money" approach would nonetheless seem to permit procuring entities to take into account a wide range of environmental externalities.

The Agreement contains two provisions governing the use of procurement to further other policies, including environmental policy. The relationship between these provisions, however, causes considerable difficulty. As we have seen, annexe 1, point 9 provides that "[p]rocurement undertaken by the Parties in accordance with specific policies of a non-procurement nature will not be deemed to be in contravention of the provisions of the Agreement. *These might include environmental and social justice policies*" (*emphasis added*). On the other hand, clause 5 of the Agreement establishes that nothing in the Agreement "precludes the Parties from…using purchasing policy to implement other policies, provided that in doing so there is no discrimination on the basis of place of origin or contravention of any commitments of the Parties under domestic and international government procurement agreements."

The obvious difficulty is that annexe 1 point 9 (which appears in an annexe 1, entitled "exemptions from the application of the ANZGPA") appears to provide that procurements undertaken in pursuit, for example, of environmental policy are not to regarded as being in

contravention of the Agreement (without reference to the question as to whether or not they may be discriminatory in object or effect) whereas clause 5 whilst permitting the use of procurement in the implementation of other policies, does so expressly subject to the proviso that such procurement must involve no discrimination of the basis of place of origin or contravention of the Parties procurement commitments.

Although it is indeed difficult to reconcile these two provisions one possible interpretation would be that annexe 1 point 9 should be regarded as providing an exemption from the "value for money" approach so that purchasing in pursuit of environmental goals should not be regarded as contravening the Agreement simply because it is not based upon a "value for money" approach. This would leave open the possibility that environmental purchasing policies or practices that discriminate on the grounds of the place of origin of goods might nonetheless be regarded as falling foul of the proviso in clause 5. It is, however, worth noting in that regard that the wording of clause 5 is itself limited. So far as discrimination is concerned, it only refers to "discrimination on the basis of place of origin" and few environmentally motivated policies will involve discrimination as to place of origin. Equally, the reference in clause 5 to contravention of any commitments under "international procurement agreements" cannot really be understood as referring to commitments under the ANZGPA itself (such as the other specific "key principles") since the ANZGPA is referred to throughout as "the Agreement."

5.1 Technical specifications

The Agreement (unlike the GPA, Chapter 10 of NAFTA, and the EC procurement directives) does not lay down detailed rules specifically relating to technical specifications. So far as the substantive rules of the ANZGPA are concerned, it may appear at first sight that the national treatment rules, (clause 2(c)), the rule against practises biased in favour of "foreign" goods and suppliers (clause 2(d), and in particular, the rule against practices which discriminate against, are biased against, or deny equal access or opportunity to, any ANZ Supplier (clause 4) might curtail the Parties right to pursue environmental policies where the policy itself, or the technique used to advance the policy, may be intended, or have the effect of discriminating against an ANZ Supplier. Annexe 1 point 9 and clause 5 do, however, preserve the Parties' right to use procurement to pursue environmental policy (subject to the interpretative difficulty discussed above).

Furthermore, the concept of "value for money" as the key determinant of "all procurement decisions" (clause 2(e), including decisions as to specifications also appears to allow procuring entities to include many environmental requirements in their specifications (whether relevant to costs or benefits and regardless as to whether they constitute direct economic advantages to the procuring entity itself). Finally, of course, even if a narrower interpretation were adopted as regards the value for money concept that would not in itself constrain the inclusion of environmental requirements in specifications since, clause 5 expressly permits such conduct and annexe 1 point 9 provides that it shall not, in any event, be deemed to contravene the Agreement.

So far as the definition of technical specifications is concerned, however, it is clear that procuring entities have a wide discretion under the ANZGPA to include environmental requirements. Clearly product requirements and product-related PPM requirements can, in principle, be imposed. Non-product-related PPM requirements also seem permissible subject only to the possibility that they may, on a case-by-case basis be discriminatory. If they are discriminatory they may nonetheless be permitted if annexe 1 point 9 is interpreted according to its literal meaning since, on that basis, decision if the procurement is undertaken "in accordance" with a specific environmental policy it is "will not be deemed to be a contravention of the Agreement.

Eco-labelling

The same analysis would apply to requirements mandating the purchase of goods bearing particular eco-labels. In particular, the permissibility of reference to eco-labelling schemes whose criteria include non-product-related PPM requirements will be the same as that for such requirements themselves.

5.2 Qualification and selection

Nothing in the ANZGPA specifically deals with qualification and selection although the general rule requiring equal treatment for ANZ suppliers (clause 2c), the promotion of opportunities for ANZ suppliers (clause 2(d)) and the maximisation of opportunities for ANZ suppliers (clause 3) clearly apply as does the rule against discriminatory practices (clause 4) and the rule that "value for money" must be used as the key determinant of all decisions (including qualification and selection decisions). There appears, however, to be nothing to prevent a procuring entity from requiring that to be qualified to submit a tender for a particular contract, the tenderer must be able to demonstrate its capacity to perform the contract in an environmentally satisfactory way, its track record of compliance with environmental laws and with environmentally related contract conditions in previous contracts, or its adherence to an environmental management system in its business generally. Once more, this is because even if the application of such consideration in particular cases may disadvantage suppliers of the other Party, or conflict with the "value for money" rule, it appears, under at least one reading of annexe 1 point 9 that this may not be deemed to be a contravention of the Agreement. If it is in accordance with a specific environmental policy.

It seems implicit in the obligations upon the Parties to "promote" (clause 2(d)) and to "maximise" (clause 3) opportunities for ANZ suppliers that contract opportunities must be published in such a way as to be accessible to suppliers of the other Party. The ANZGPA does not, however, specifically require that the qualification/selection criteria and the award criteria must be published in tender documentation or contract notices. Nor is there an express provision prohibiting the application of criteria other than those that may have been published. This potential lack of transparency may leave a considerable degree of *de facto* discretion as to procuring entity's choice of environmental selection and award criteria and the weightings to be attached to environmental award criteria relative to other criteria.

5.3 Compliant tenders – "additional criteria" – "contract compliance"

Nothing in the ANZGPA in principle prevents procuring authorities from including contract terms requiring contractors to undertake environmentally related activities if awarded a contract. Tenders not accepting such contract terms may therefore be rejected as non-compliant. Once more there is the possibility that inclusion of such terms unrelated to the primary purpose of the procurement itself may *de facto* exclude ANZ suppliers of the other Party and so infringe the rules against discrimination. Once again, however, if the inclusion of the terms is intended to implement a specific environmental policy annexe 1 point 9 would appear to apply with the possible result that such discrimination is not to be deemed a contravention of the Agreement.

5.4 Contract award criteria and weightings

Once more, the award criteria to be adopted must generally relate to "value for money" a concept which, as argued above, itself leaves considerable scope for procuring entities to take environmental factors into account. To the extent that an entity wishes to further an environmental

policy by taking into account factors not within the scope of "value for money" it appears able to do so by virtue of the provisions in clause 5 and in annexe 1 point 9 permitting the use of procurement policy to implement environmental and social justice policies. The ANZGPA does not specifically require that the award criteria be published in tender documentation or contract notices. Nor is there an express provision prohibiting the application of criteria other than those that may have been published. This potential lack of transparency may leave a considerable degree of *de facto* discretion as to procuring entity's choice of environmental award criteria and the weightings to be attached to environmental award criteria relative to other criteria.

6. Conclusions

This chapter has reviewed the potential for the incorporation of "environmental" concerns in international procurement regimes into issues such as the qualification and selection of potential suppliers, technical specifications of goods and services to be procured, and contract award criteria. In general there do not seem to be significant constraints on the use of environmental criteria in various stages of the procurement process. However, each regime is different, and there are some areas in which there are differences in emphasis which are relevant for environmental concerns. Some of these main differences can be summarised as follows:

- The distinctions between environmental impacts associated with **products** and those associated with **production process methods** is addressed in all cases, but they appear to differ in the extent to which the latter can be included in technical specifications. At the one extreme, the EU appears to take a "hard line" restricting the use of PPMs. However, there is some ambiguity in different texts. There is also some ambiguity in the case of NAFTA, with different articles of the Agreement appearing to be at odds with each other. At the other extreme, the ANZGPA appears to place few constraints on the use of PPMs in technical specifications.

- All of the regimes allow for the use of non-price factors in contract award criteria. However, it would appear that the scope for the inclusion of other factors, including environmentally-relevant factors, differs. Perhaps most significantly, while the EU mandates the selection of the **"most economically advantageous"** tender, the GPA uses the term **"most advantageous"**. The latter would, of course, imply a greater degree of allowable discretion.

- In a related vein, **whole-life costs** and **"value for money"** are common features of all the international procurement regimes reviewed, the extent to which this can include non-financial **external costs** appears to differ. For example, while both the EU and the ANZGPA would allow for the financial costs of disposal to be considered, arguably the latter seems to allow for greater discretion with respect to the incorporation of external environmental costs for which there are no market or administered prices.

- In the qualification and selection of suppliers, the scope for the use of management-related factors (such as certification of an **environmental management system)** as a proof of "technical capacity" also appears to differ somewhat between the regimes. In this case, NAFTA seems most restrictive, with greater scope allowed for the purchase of services or works contracts where this might be more directly relevant than in the case of goods.

Other factors such as degree of discretion allowed in the use of "**eco-labels**" as technical specifications, preferences for **performance standards** rather than technological standards, and, more generally, the pursuit **of secondary policy objectives** through public procurement are also important. All of these points are key to an understanding of the extent to which government authorities can incorporate environmental criteria in their tendering procedures and in procurement generally. In general, the report concludes that there is, in fact, considerable legal scope to do so. However, it is also clear that a number of important issues remain unresolved due to the relatively immature state of case law in this area. The effect that this uncertainty may be having on the willingness of procurement officers in member country governments to exploit this potential scope is not clear.

It does, however, seem clear that the systems reviewed in this chapter each reflect an understanding that the procurement process can and should provide opportunities to advance environmental objectives. The extent to which this can be achieved without prejudicing the procurement principles of transparency and non-discrimination (that to a greater or lesser extent underlie each of the systems) will no doubt become clearer as practice develops.

REFERENCES

APPELLA, A. (1996) "Constitutional Aspects of Opinion 1/95 of the ECJ Concerning the WTO Agreement" *International and Comparative Law Quarterly* 440.

ARNOULD, J. (2001), "A Turning Point in the Use of Additional Award Criteria?" 10 *Public Procurement Law Review* NA13 at NA15.

ARROWSMITH (1995) Public Procurement as an Instrument of Policy and the Impact of Market Liberalisation" 111 *Law Quarterly Review* 234.

ARROWSMITH, S. (1995a) "The Application of the EC Treaty Rules to Public and Utilities Procurement" 6 *Public Procurement Law Review* 255.

ARROWSMITH, S. (1996) "Developing Multilateral Rules on Government Procurement: A New Approach in the WTO?" 5 *Public Procurement Law Review* CS145.

ARROWSMITH, S. (1996a) *The Law of Public and Utilities Procurement*, Sweet and Maxwell, London.

ARROWSMITH, S., LINARELLI, J., AND WALLACE, D. (2000) *Regulating Public Procurement: National and International Perspectives,* Kluwer, The Hague.

BLANK, ANNET AND MARCEAU, GABRIELLE (1996) "The History of the Government Procurement Negotiations Since 1945" 5 *Public Procurement Law Review* 77.

DAILEY, VIRGINIA (2000) "Sustainable Development: Re-evaluating the Trade vs. Turtle Conflict at the WTO" 9 *Journal of Transnational Law & Policy* 331.

DHOOGE, L. (2001) "The North American Free Trade Agreement and the Environment: The Lessons of Metalclad Corporation v. United Mexican States" 10 *Minnesota Journal of Global Trade* 209.

DINGL, D. (1996) "Direct Effect of the Government Procurement Agreement" 5 *Public Procurement Law Review* 245.

EC COMMISSION (1989*) Communication on Public Procurement. Regional and Social Aspects*, COM(89) 400 final of September 22, 1989, OJ 1989, No. C311/17.

EC COMMISSION (1996) *Green Paper on Public Procurement in the European Union: Exploring the Way Forward*, section VI; COM (96) 583 final, November 27, 1996.

EC COMMISSION (1998) *Communication on Public Procurement in the European Union*, COM (1998) 143 final, March 11, 1998.

EC COMMISSION (2001) *Green Paper on Integrated Product Policy* COM(2001) 68 final, 7th February 2001.

EC COMMISSION (2001a) *Interpretative Communication on the Community Law Applicable to Public Procurement ant the Possibility for Integrating Environmental Considerations into Public Procurement*, COM (2001) 274 final.

EC COMMISSION (2001b) *Guidance on Green Public Procurement by Using the European Eco-label Criteria,* November 2001.

EECKHOUT, P. (1997) "The Domestic Legal Status of the WTO Agreement: Interconnecting Legal Systems" 34 *Common Market Law Review* 11.

FOOTER, M. (1996) "Public Procurement and EC External Relations" in E. O'Keefe (ed.) *The European Union and World Trade Law After the Uruguay Round*, Chichester, John Wiley and Sons.

GAINES, S. (2001) "The WTO's Reading of the GATT Article XX Chapeau: A Disguised Restriction on Environmental Measures 22 *University of Pennsylvania Journal of International Economic Law* 739.

GANTZ, D. (2001) "Reconciling Environmental Protection and Investor Rights Under Chapter 11 of NAFTA" 31 *Environmental Law Reporter* 1646.

HOEKMAN, B. AND MAVROIDIS, P. (eds.) (1997), *Law and Policy in Public Purchasing: The WTO Agreement on Government Procurement*, Ann Arbor, University of Michigan Press.

HOWARD, E. (1996) "Environmental Management – ISO 14001 Approved" 5 *Review of European Community and International Environmental Laws* 340.

JACKSON, J. (1997) *The World Trade System: Law and Policy of International Economic Relations* (2 ed.), MIT, Cambridge, Massachusetts.

LIND, S. (1996) "Eco-Labels and International Trade Law: Avoiding Trade Violations While Regulating the Environment" 8 *International Legal Perspectives* 113.

MANN, H. (2000) "NAFTA and the Environment: Lessons for the Future" 13 *Tulane Environmental Law Journal* 387, p. 402.

MURRAY, P. (1997) The International Environmental Management Standard, ISO 14000: A Non-Tariff Barrier or a Step To An Emerging Global Environmental Policy?" 18 *University of Pennsylvania Journal of International Economic Law* 577 at p. 609.

OECD (1997) "Processes and Production Methods (PPMs) Conceptual Framework and Considerations on Use of PPM-based trade Measures" OCDE/GD (97) 137.

OECD (1997a) "Eco-labelling: Actual Effects of Selected Programmes" OCDE/GD (97) 107

OECD (1999) "Trade Issues in the Greening of Public Purchasing" COM/TD/ENV (97) 111.FINAL.

OECD (2000) *Greener Public Purchasing: Issues and Practical Solutions*, Paris, OECD.

Okubo, A. (1999) "Environmental Labelling Programs & the GATT/WTO Regime" 11 *Georgetown International Environmental Law Review* 599.

SIMMONS, B. (1999) "In Search of Balance: An Analysis of the WTO Shrimp/Turtles Appellate Body Report" 24 *Columbia Journal of Environmental Law* 413.

THIMME, P. (1996) “Environmental Management 0 ISO 14001 and EMAS” 5 *Review of European Community and International Environmental Laws* 267.

THOMPSON, R. (2001), “The Proposed Commission Draft Communication on the Environment” 10 *Public Procurement Law Review* NA97.

TIEFER, C. (1997) “The GATT Agreement on Government Procurement in Theory and Practice” 26 *University of Baltimore Law Review* 31.

TREPTE, P. (1995) “The GATT, GPA and three EC Public Procurement Rules: Realignment and Modification” 4 *Public Procurement Law Review* CS42.

WILLIAMS, R. (2001)“The Proposed Commission Draft Communication on the Environment and the Impact of the Nord Pas-de-Calais Region Case” 10 *Public Procurement Law Rev*iew NA75.

WILLIAMS, R. (2001a) “The Proposed Commission Draft Communication on the Environment” 10 *Public Procurement Law Review* NA97.

WILLIAMS, R. (2002) “The European Commission’s Communication on the Environment and Public Procurement” 11 *Public Procurement Law Review* NA1.

WTO (1996) "Overview of the Agreement on Government Procurement" WTO Committee on Government Procurement, GPA A/8 of 17 October 1996.

WTO (1998) "Notification of National Implementing Legislation: Communication from the EC" WTO Committee on Government Procurement, GPA/20, June 28, 1998.

WTO (2000) "Notification of National Implementing Legislation: European Community" WTO Committee on Government Procurement GPA/32, June 12, 2000.

Chapter 6

NATIONAL PROCUREMENT REGIMES AND THE SCOPE FOR THE INCLUSION OF ENVIRONMENTAL FACTORS IN PUBLIC PROCUREMENT

by

Peter Kunzlik[1]

Nottingham Law School
Nottingham Trent University

1. Introduction

In order to ensure transparency and competition in public procurement markets, OECD member countries have made themselves subject to a degree of regulation, both through competition policy generally and through specific laws related to public procurement. Such measures can place restrictions on the "scope" for including environmental criteria in their procurement practices. In many cases, such constraints mirror obligations agreed to through adherence to international procurement regimes, such as those discussed in the previous chapter. However, in other cases, there can be important differences.

The domestic regimes covered by the chapter are the United Kingdom (or rather England and Wales), the United States, and Australia. Since each country is a member of at least one of the international regimes discussed in the preceding chapter this allows insights to be drawn as to domestic implementation of those regimes. Furthermore, the three countries adopt quite different policy orientations in relation to environmental discretion in procurement. The United States Federal system positively requires procuring agencies to adopt affirmative environmental purchasing policies in several respects. The policy of the UK, whilst encouraging and permitting a degree of "green purchasing" does not generally *require* procuring entities to exercise discretion in favour of the environment in specific respects. Finally, the Australian Commonwealth procurement rules permit procuring agencies to exercise a very wide degree of discretion generally, whilst at the same time mandating certain aspects of "green procurement" through government guidance.

These countries therefore represent a broad spectrum of approaches. As with the chapter on international procurement regimes, the differences in approaches will be reflected in terms of the potential for the incorporation of "environmental" concerns into issues such as the qualification and selection of potential suppliers, technical specifications of goods and services to be procured, and contract award criteria.

1. The views expressed in this chapter are those of the author and do not necessarily reflect those of the OECD.

2. England and Wales

2.1 Central government

Procurement by central government departments is governed by regulations that transpose the EC public contracts directives into national law. These are the Public Works Contracts Regulations 1991 (SI 1991 No. 2680); the Public Services Contracts Regulations 1993 (SI 1993 No. 3328); and the Public Supply Regulations 1995 (SI 1995 No. 201) all as amended by the Public Procurement (Works, Services and Supply) (Amendment) Regulations 2000 (SI 2000 No. 2009). Since these Regulations transpose the EC public procurement directives, detailed analysis of the requirements the EC regime will not be repeated here, other than where UK Government policy is based upon a particular interpretation of that regime.

Within the framework provided by the Regulations, however, government procurement *policy* is that procuring departments should "achieve value for money having regard to propriety and regularity".[2] To do so will involve the use of competitive procedures unless there is a compelling reason to the contrary (UK Government 1998, Annex 22.2, point 2.5). "Value for money" means "the optimum combination of whole-life cost and quality (or fitness for purpose) to meet the user's requirement" (Annex 22.2, point 2.2). So far as contract award criteria are concerned, the *Treasury Guidance* makes it clear that rarely will price alone be a sufficient to establish value for money (UK Government 1998, Annex 22.2 point 6.3).[3]

So far as environmental policy is concerned, a 1990 White Paper, entitled *This Common Inheritance* requires government departments to develop their own strategies for greening their operations based upon a model framework, *Greening of Government Operations* (UK Government 1998a), which are to aim at:

- conserving energy, water, wood, paper and other resources, particularly those which are scarce or non-renewable – while still providing a safe and comfortable working environment;
- reducing waste through re-use and recycling and by using refurbished and recycled products and materials where such alternatives are available;
- monitoring discharges and emissions to air, land and water to assess what action is necessary to reduce pollution or the risk of pollution;
- phasing out ozone-depleting substances and minimising the release of greenhouse gases, volatile organic compounds, vehicle emissions and other substances damaging to health and the environment;
- encouraging manufacturers, suppliers and contractors through specifications to develop environmentally preferable goods and services at competitive prices;
- ensuring that any products derived from wildlife such as timber, plants and leather goods are from sustainable sources and comply with EC and international trading rules such as CITES;

---

2. *Treasury Guidance* (UK Government, 1998) annex 22.2. point 1.

3. For a summary description of the "value for money" approach see OECD 1999 at p. 8 and OECD 2000 at p. 54.)

- working with contractors to improve environmental performance where this is relevant to the contract and to the achievement of value for money; and,

- meeting all relevant current and foreseen statutory regulations and official codes of practice and specifying contractors to do the same when working on departmental premises.

In this context HM Treasury and the former Department of Environment, Transport and the Regions (DETR) have produced specific guidance entitled *Environmental Issues in Purchasing: Note by the Treasury and DETR* (UK Government, undated). This *Note* re-iterates that government procurement policy is to achieve value for money as defined above and indicates the extent to which the greening of government may be implemented through the procurement activities.

2.1.1 Technical specifications

The *Note* acknowledges that specifications reflecting the aims of greening government operations (listed above) can contribute significantly to the achievement of Government targets for reducing the environmental impact of its activities. It emphasises, however, that the aim must be to achieve value for money, *not to further other policy aims* [the *Note*, para 5(a)]. There is clearly a tension between this discouragement of policy aims other than the pursuit of "value for money" and the detailed encouragement that the *Note* itself provides for the exercise of discretion in favour of the environment at different stages of the procurement process (including, in particular, the specification stage). The two approaches can, however, be reconciled, by an interpretation of the *Note* that, whilst accepting that departments may indeed exercise their discretion in favour of the environment in the detailed ways identified by the *Note*, acknowledges that they must do so in the context of the pursuit of value for money. On that basis the pursuit of environmental objectives is not, it seems, to be regarded as an independent objective, but as a goal that must be accommodated within the overriding objective of the pursuit of "value for money."

The *Note* also provides an interpretation of the impact on environmental procurement of the EC procurement directives, emphasising in particular the general rule of the Treaty of Rome prohibiting discrimination on the grounds of nationality. So far as the *Note*'s specific interpretation of the EC regime is concerned, it indicates that contacting authorities *ar*e free to specify their requirements in "green" terms (so that departments may specify that a product should be made out of materials which are or could be recycled or that particular materials, such as ozone depleting substances, should not be used in the product). This is, however, stated to be subject to the general rule that specifications must be drawn up in a manner which does not discriminate against products or providers from other Member States and which is, where applicable, consistent with the provisions in the directives on technical specifications and the use of standards" [the *Note*, para. 5(a)]. Accordingly the *Note* advises that in preparing the specification, the end user should decide the extent to which it should cover environmental requirements taking account of the Government's environmental policies and the department's own strategy for greening its operations; the resources available to the department; the requirement to achieve value for money; and the EC procurement directives and the Treaty as appropriate" (the *Note*, para. 7).

Having identified the above possibilities for taking account of environmental factors, the *Note* lists examples of environmental and other factors which are to be taken into account in assessing "whole life costs." These factors, which are listed in terms of cost elements that departments may take into account, seem apt to inform decisions that will be made by procuring entities both in the definition of specifications and in the definition of award criteria. They include:

- running costs such as the energy or water consumed by the product over its lifetime;
- indirect costs;[4]
- administrative costs;[5]
- investing to save revenue costs; [6]
- use of refurbished parts or products where possible; and,
- recyclability.[7]

Purchasers are advised to look to waste reduction and re-use (as well as to recycling) and to the cost of disposal arrangements since it may, for example, be worth paying a premium to a supplier giving an undertaking to remove the product or a hazardous substance at the end of its useful life (the *Note*, para. 10).

The *Note* also advises that departments should consider risk factors when determining how best to achieve "value for money." Specifically they mention the possibility that choosing a benign rather than hazardous materials may have the advantage of reducing the department's risk under COSHH and under the Duty of Care on Waste Management, imposed by section 4 of the Environmental Protection Act 1990 (the *Note* para. 11). Similarly, they indicate that departments should also consider "the risk of investing in redundant plant and equipment as increasingly stringent environmental standards are imposed through EU and UK legislation, allied with increasingly vigilant enforcement". Many environmental requirements are therefore seen as producing cost benefits. In cases, however, "where the specification of a particular environmental requirement results in higher costs which will not be offset by savings over the longer term" the *Note* (para. 12) emphasises that it will be the responsibility of the department in question to determine whether the extra costs are justified, taking account of Government policy and the department's own statement on "greening operations." It emphasises that in formulating such requirements it will, of course, be necessary to strike a proper balance between the costs of the requirement to the taxpayer and the environmental benefits"(the *Note*).

Eco-labelling and energy labelling

The *Note* recognises that few organisations can afford to conduct detailed life cycle assessments on all their products. It indicates, however, that the EC eco-labelling scheme can help in that regard since it "provides rigorous standards for certain product groups which are based on a full analysis of life cycle impacts and agreed at a European level"(the *Note*, para.19). It notes, however that since the EC eco-labelling scheme is voluntary it does not therefore follow that eco-labelled products perform better in environmental terms than unlabelled products. "Accordingly, invitations to tender and contract documents should not require products to carry the label or any other non mandatory material. However, the eco-label criteria may be used to identify environmentally preferable products

---

4. Such as when less energy efficient IT equipment will produce more heat causing the plant in air conditioned buildings to work harder, so increasing electricity costs.

5. Such as where the use of a more expensive product which is less harmful to the environment may reduce the time spent by staff in complying with the Control of Substances Hazardous to Health (COSHH) Regulations.

6. Such as 'spend to save' measures where specifying higher levels of insulation where the extra expenditure can be recouped from lower energy costs.

7. This is thought to be key since purchasers can create markets for their own waste such as paper, toner cartridges etc. through buying products containing recycled materials. This strategy that may be doubly beneficial in financial terms since a recycled product such as a refurbished toner cartridge may cost less than a new one.

and to improve the specification for products and services"(*ibid.).* The *Note* also requires departments that wish to identify energy efficient products to use the EC's mandatory energy labelling scheme (the *Note*, para.20).

2.1.2 *Departmental implementation of government "greening" policy – the DETR Departmental Policy Statement*

The approach outlined above is fleshed out by an extensive body of advice for Government purchasers, contained in *Greening Government Operations: Green Guide for Buyers* (UK Government 2001). In addition, each department is responsible, under the *Greening Government* initiative, to produce its own strategy for greening its operations. The strategy of the Department for the Environment, Transport and the Regions (DETR) is of particular interest given its (and its successor department's) "lead" role in that initiative. The *DETR Greening Operations Policy Statement* (UK Government 1999) contains that department's comprehensive strategy, stating aims and objectives consistent with the general "greening" model (see also UK Government 2000). Several of the specific objectives of the strategy depend upon procurement approaches.

Conservation

The DETR's objectives regarding conservation include, *inter alia* [UK Government 1999, para 8 (a) - (g)]:

- buying a minimum of 10% of electricity from renewable sources by March 2002;
- buying energy efficient, value for money equipment; introducing new, more energy-efficient techniques and technologies;
- reducing hazardous waste through buying fewer hazardous products;
- purchasing sustainably produced timber products by, for example, specifying that suppliers provide independently verifiable documentary evidence that their timber has been lawfully obtained from sustainable forests managed "to prevent harm to other ecosystems and any indigenous people";
- ensuring that timber purchases are in compliance with international agreements such as CITES;
- considering the purchase of reclaimed timber or products made therefrom "where practicable and where they offer value for money";
- buying 100% recycled paper comprising at least 80% post consumer waste and using this for all work not requiring specialist papers;
- ensuring that any virgin pulp "comes from sustainably-managed woodlands and that both the pulp and the recycling process is chlorine free;
- ensuring that, wherever possible, material is sealed (if necessary) using a water-based varnish (not a plasticised finish) and is bound using materials that do not make it harder to recycle; and,
- substituting (in horticultural activities) all "slow renewables, such as peat" with organic wastes such as composts, manure etc.

Pollution reduction

Similarly, many of the statement's other objectives for reducing pollution imply specific procurement policies, including buying "green electricity" where it provides value for money; switching where feasible from the use of products involving pollutants that contribute to climate change to "environmentally preferable substitutes"; ensuring that the department does not buy products which contain ozone-depleting substances "where there are suitable alternatives"; and using asbestos-free materials for new work or when replacing existing asbestos materials [UK Government 1999, para 8 (g) and (k)].

PPM requirements

It is quite clear from its references to purchase of timber from sustainable sources, and to the purchase of "green" electricity that the DETR's interpretation of Government policy indicates that non-product-related PPM requirements might indeed be included in specifications.

2.1.3 Qualification and selection

The Regulations that transpose the EC directives set out detailed rules as to the permissible criteria for selection of tenderers (including, *inter alia*, criteria relating to technical capacity) but limit the evidence that authorities may request in order to establish such capacity. Accordingly, the *Note* expresses the view that evidence on other factors may *not* be taken into account. In particular, questions about providers' general policies (e.g. on environmental issues) are not permitted [UK Government 1999, para. 5(b)].[8] The *Note* acknowledges, however, that purchasers may reject tenderers convicted of a criminal offence or which have committed an act of grave misconduct in the course of their business where they consider rejection to be justified and that this may include infringement of environmental legislation/regulations. It indicates, however, that decisions to reject providers should be proportionate to the offence and that the provider is to be given an opportunity to describe any steps that it might have taken to prevent recurrence.

Environmental management systems

The *Note* refers to ISO 14001 and to the EC Eco-Management and Audit Scheme (EMAS) as examples of formal standards for environmental management systems "which assure purchasers that suppliers are operating to control their environmental impacts" (the *Note*, para. 16). Although it indicates that the Government does promote such schemes, it also emphasises that it is *not* the Government's policy to require its suppliers to comply with them as a condition of selection to tender or as an award criterion since such a condition could lead to higher prices by restricting those eligible to compete for orders and contracts and might also conflict with the EC rules on selecting providers. The *Note* emphasises, however, that it is permissible to ask suppliers to provide evidence that they are able to operate an environmental management scheme where it is relevant to the contract, e.g. for the provision of facilities management service in an organisation accredited to or seeking accreditation to ISO 14001 (the *Note*, para. 18).

---

8. This view is re-iterated by the DETR's successor department, the Department for Environment, Food and Rural Affairs (DEFRA) in its *Greening Government Operations Green Guide for Buyers* (*supra*) under the title "EU Procurement Rules" at point (b).

2.1.4 Compliant tenders – "additional criteria" – "contract compliance"

The *Note* states that although, as a matter of Community law, purchasers *can* attach conditions to the award of contracts (provided that these conditions are compatible with the Treaty of Rome) the UK's *domestic* policy is not to use procurement to achieve other policy goals and that this limits the extent to which departments may have recourse to "contract compliance." As an example of an acceptable contract condition, however, it suggests a term to the effect that "while working on the department's premises a contractor will comply as far as possible with the department's green strategy" (the *Note*, para. 5d).[9] In general, however, the *Note* indicates that "[d]epartments should not seek to use their purchasing power as a means of pursuing wider environmental ends (i.e. those outside the scope of the contract). It indicates, for example, that while a department is free to specify paper made out of recycled materials, it should not limit its field of selection to providers who only supply recycled paper. It emphasises that unwarranted rejection of suppliers capable of meeting the specification could lead to both a loss of value for money and a breach of the EC rules" (the *Note*, para. 14). In conclusion, therefore, "[t]he award of contracts should not be made subject to criteria or conditions of an environmental nature which are not directly relevant to the product or service which is being procured" (the *Note*, para 15).

2.1.5 Contract Award criteria and weightings

The *Note* acknowledges that only two criteria are permissible under the EC regime either "lowest price" or "most economically advantageous" and emphasises that the latter permits various criteria including whole life costs to be taken into account (the *Note*, para. 5c).

2.2 *Local authority procurement*

The same Regulations that transpose the EU's public contracts directives for contracts let by central government authorities also apply to local authorities' contracts (meeting the applicable value thresholds). In addition, however, the contracting powers of local authorities are constrained by section 17 of the Local Government Act 1988 and by the common law concept that statutory authorities may only use their powers for the particular purposes for which they were conferred. Section 17 was enacted to prevent local authorities from using their contracting powers to further political objectives in ways that the legislature regarded as inappropriate. It makes it the duty of every public authority listed in Schedule 2 to the Act when including or excluding persons from any list of approved contractors, or from any list or group of persons who may be invited to tender; or when accepting or not accepting tenders, selecting persons with whom to contract, or giving or withholding approval for, or selection or nomination of, sub-contractors in relation to any actual or potential public supply or works contracts, to do so without reference to certain prescribed non-commercial matters. Although most of these matters do not affect local authorities' ability to pursue environmentally responsible purchasing, section 17(5)(e) does provide that "the country or territory or origin of supplies to, or the location in any country or territory of the business activities or interests of contractors…" is a "non-commercial matter."

Thus if an authority were to wish to mark its disapproval of a particular country on grounds of that country's policies (including perhaps its environmental policies) by declining to do business with enterprises having interests in that country section 17(5) (e) would preclude it from doing so. Where the country in question is one having the benefit of the EC procurement regime the Regulations

---

9. This is re-iterated in DEFRA's *Greening Government Operations Green Guide for Buyers* (*supra)* under the title "EU Procurement Rules" at point (d))

transposing the EC procurement directives, and the Treaty of Rome's rule against discrimination would also preclude such conduct.

Although the 1988 Act remains on the statute book the general approach to local authority operations, including procurement, was changed by the Local Government Act 1999 which introduced the concept of "best value" authorities which term includes local authorities (county, district, London borough, and parish councils) and other local bodies (such as national park authorities, police, fire and waste disposal authorities). Best value authorities are required to "make arrangements to secure continuous improvement in the way in which its functions are exercised, having regard to a combination of economy, efficiency and effectiveness" [the *Local Government Act* 1999 section 3(1)].[10] They are to do this by conducting "best value reviews" as prescribed by the Act and by the Secretary of State and are required to prepare a "best value performance plan" for each financial year [section 6(1)]. They are subject to "best value inspections" by the Audit Commission and others (section 10).

It appears that the concept of " best value" itself permits best value authorities a degree of scope for furthering general environmental goals. Thus it seems that best value reviews, which set new performance targets must, *inter alia,* " reflect the principles of sustainable development" (UK Governnment 1999a, para. 17). The principles of sustainable development are set out in *A better quality of life – a strategy for sustainable development for the UK* (UK Government 1999b) and in *The Government's sustainable development strategy: What does it mean for local authorities?* (UK Government 1999c). Moreover best value authorities are encouraged to consider using "quality schemes"[11] and ISO 14000 is one of the schemes to which reference is made. It is described as requiring "an organisation to involve its suppliers in its environmental management activities"(UK Government 1999c, Annex G).

More importantly, however, Part I of the *Local Government Act 2000* has changed the law governing the powers of local authorities. Thus, section 2(1) of the *Act* expressly empowers every local authority "to do anything which they consider is likely to achieve a number of objectives including "the promotion or improvement of the environmental well-being of their area." This power (known as "the power of well-being") may be exercised in relation to or for the benefit of the whole or part of the authority's area or all or any persons resident or present in that area [section 2(2)]. It expressly includes the power to do anything in relation to, or for the benefit of, any person or area situated outside their area if the authority considers that it is likely to achieve any one or more of the above objects [section 2(5)].

This new power is intended to "open up the scope" *inter alia* for "initiatives at the regional, cross-regional and sub-regional level [so as] to address issues which do not recognise administrative boundaries, *such as the prevention of pollution and the conservation of biodiversity*[12] (emphasis added). Before exercising the power of well-being, however, the authority must have regard to any guidance issued by the Secretary of State [section 3(5)] and to the strategy ("community strategy") that it must itself maintain under section 4 of the Act [section 2(3)]. A community strategy is a strategy for promoting or improving the economic, social and environmental well being of the authority's area and contributing to the achievement of sustainable development in the United Kingdom.

The power of well-being does not enable authorities to "do anything which they are unable to do by virtue of any prohibition, restriction or limitation on their powers which is contained in any enactment" (*ibid.*), so that authorities cannot simply use the power of well-being to circumvent

---

10. As to implementation see DETR Circular 10/99 *Local Government Act 1999: Part I Best Value*; UK Government (1999a).

11. DETR *Guide to Quality Schemes and Best Value* (UK Government 2000a).

12. DETR *Power to Promote or Improve Economic, Social or Environmental Well-being (Final Guidance)* (UK Government, 2001a), para. 52, 14 May 2001/

prohibitions "on the face of legislation" (UK Government 2001*a*, chapter 3). The purpose of Part I of the Local Government Act 2000 is, therefore, to reverse the traditional situation (in which uncertainty about the extent of authorities' powers engendered a "cautious approach") by providing a power which, although not undermining specific prohibitions and limitations contained in other legislation, is general and broad in nature (UK Government 2001*a*, especially paras. 5–11). The power of well-being is "wide ranging" and is to be regarded as a power of first (rather than last) resort (UK Government 2001*a*, paras. 7 and 10).

UK Government policy also requires local authorities to have adopted Local "Agenda 21" strategies to further the attainment of sustainable development by 2000. This clearly has implications for local authority procurement. Indeed, a recent survey indicates that 86% of local authorities do indeed have an environmental policy in place and in 84% of authorities this policy does indeed refer to procurement (UK Government 2001b, section 7.3). Furthermore, the survey reports that 81% of authorities make reference to environmental considerations in their contract specifications and 53% in their contract terms and conditions. 78% take environmental considerations into account when evaluating tenders, 67% when deciding upon the best procurement option, and 64% when awarding contracts (UK Government 2001b, section 7.5).

In summary, therefore, it appears that local authorities, in their search for "best value" are indeed entitled to have regard to environmental issues (so far as consistent with the Regulations transposing the EC public sector directives where they apply) when identifying their requirements, when drafting specifications, at the selection stage, and when drafting contract award criteria. They have power to do so according to the power of well-being (provided that they act consistently with the Regulations transposing the EC regime) whenever they consider it likely to benefit to the whole or part of their areas or any person resident or present in them even if that involves doing something in relation to an area situated their own.

3. The United States of America

At the Federal level US government procurement[13] is governed by the Armed Services Procurement Act 1994 (10 U.S.C. § 2302 *et seq*.) governing defence, coast guard and NASA procurement; and the Federal Property and Administrative Services Act 1949 (41 U.S.C. § 25 *et seq*.) governing acquisitions by civil agencies. This legislation authorises the US government to adopt *Federal Acquisition Regulations* (FAR) (US Government 2000) which in turn provide a detailed code of rules governing procurement by all Federal agencies. The FAR is expanded and implemented by supplemental rules adopted by the Department of Defense and the other agencies:

- the Competition in Contracting Act (1984) requires the government to use competitive procedures in procurement;

- the Federal Acquisitions Streamlining Act (1994) provides simplified procurement procedures and establishes a preference for the purchase of commercially available "non-developmental" goods and services where possible;[14]

- the Federal Acquisition Reform Act (1996) provides certain simplified acquisition procedures; and,

13. As to which see WTO (1996d), (1998), and (1999), and Corr and Zizzis (1999).

14. Such as for the purchase of goods available generally to private purchases on the commercial market rather than "government-unique" items individually specified by the government;

- the Information Management Reform Act (1996) has reformed the procurement of information technology.

The provisions of these Acts are also implemented by the FAR as are a number of environmental statutes and Executive Orders including, in particular, the Clean Air Act, the Emergency Planning and Community Right-to-Know Act, the Energy Policy and Conservation Act, the National Energy Conservation Policy Act, the Pollution Prevention Act, the Resource Conservation and Recovery Act, 1976; Executive Order 13101 of September 14, 1998, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition."[15]

Notwithstanding its commitment to competition in contracting, the US procurement system remains fundamentally premised upon a preference for the purchase of domestic rather than non-domestic goods. Thus, the Buy American Act (1954)[16] in practice provides that for most purchases of supplies where the lowest domestic bid exceeds a foreign bid, an additional 6% must be added to the foreign bid for purposes of price comparison (12% if the lowest domestic bid is from a small business and 50% for purchases by the Department of Defense).[17] If the domestic product exceeds the lowest non-domestic product by more than these differentials, the cost of the domestic product is deemed unreasonable, thus permitting the purchase of the lowest priced non-domestic product.[18] Similar provisions apply, under the Balance of Payments Program, in respect of the purchase of supplies for use overseas or for construction contracts in respect of public buildings outside the US (FAR, subpart 25.3). So far as the US's government procurement obligations under the GPA, NAFTA and its other relevant trade agreements are concerned, US legislation[19] waives the application of the Buy American Act and the Balance of Payments Program for procurements of foreign supplies and construction materials covered by the relevant agreements. [20]

In addition to its domestic preference approach US federal procurement law explicitly incorporates numerous affirmative purchasing policies for the pursuit of socio-economic objectives (some of which are based upon specific set asides).[21] US Federal procurement rules also provide a

---

15. For a summary description of the US federal procurement system see OECD 1999, p. 27 and OECD 2000, p. 53.

16. As implemented by Executive Order No. 10582, 19 Fed. Reg. 8723 (1954) and US Government (2000), part 25.

17. US Government FAR (2000) sections 25.105 and 25.5 and Defense Federal Acquisition Regulations Supplement (DFARS) section 225.502.

18. For the relationship between US Federal law and the GPA see Corr and Zizzis 1999, Tiefer 1997 and Carrier 1997 and 1997a.

19. In respect of the GPA, the Trade Agreements Act, 1979 as amended by the Uruguay Round Agreements Act; and in respect of NAFTA, the North American Free Trade Agreement Implementation Act 1993.

20. These waivers are implemented in US Government FAR (2000) subpart 25.4, especially sections 25.403 (GPA), 25.405 (NAFTA) and 25.408: See WTO (1998) section 6.

21. Including, for example, requirements as to the purchase of goods produced by federal prison labour (FAR subpart 8.6); requirements as to purchases from non-profit agencies employing people who are blind or severely disabled (FAR subpart 8.7); obligations to afford certain opportunities or to set aside certain contracts for various types of small business (FAR part 19); the payment of incentive payments to prime contractors to employ as sub-contractors Indian organizations or Indian-owned economic enterprises (FAR subpart 26.1); a preference for the use of local organisations, firms and individuals in contracts for major disaster or emergency assistance activities (FAR subpart 26.2); a policy encouraging the participation in government contracts of Historically Black Colleges and Universities and Minority Institutions (FAR subpart 26.3); requirements as to contractors' treatment of

number of policies that *require* (rather than simply encourage) the application of certain environmental policies during the procurement process. These rules are laid down by statutes and in Executive Orders[22] and are implemented through Part 23 of FAR, on "Environment, Conservation, Occupational Safety, and Drug-free Workplace."

3.1 Technical specifications

Energy Efficiency

Specific environmental policies apply to the identification by an agency of its requirements and to its adoption of specifications. Thus Federal agencies are required to consider energy-efficiency in the procurement of products and services and energy conservation and efficiency data are to be considered along with estimated cost and other relevant factors in the preparation of plans, drawings, specifications, and other product descriptions" (FAR, section 23.203).

Use of recovered materials

The Resource Conservation and Recovery Act, 1976 (as to which see McCadney 1999) requires the Environmental Protection Agency (EPA) to prepare guidelines on the availability, sources, and potential uses of recovered materials and associated products, including solid waste management services; and requires federal agencies themselves "to develop and implement affirmative procurement programs for EPA-designated products within 1 year after the EPA's designation" [FAR, section 23.402(2)]. EPA-designated products are products that are or can be made with recovered materials *and* which are listed in a procurement guideline by the EPA *and* for which the EPA has provided purchasing recommendations in a related Recovered Materials Advisory Notice (FAR section 23.401). A list of such products is available on the EPA's web site.[23]

In addition, the head of each agency is required (i) to work to increase and expand markets for recovered materials "through greater Government preference" consistent with the demands for efficiency and cost-effectiveness" and (ii) to develop and implement the affirmative procurement programmes referred to above (FAR, sections 23.402(2)(c)(1) and 23.402(2)(c)(2)). In this context US Government policy is "to acquire competitively, in a cost-effective manner, products that meet reasonable performance requirements and that are composed of the highest percentage of recovered materials practicable" (FAR, section 23.403).

More specifically, each agency is required to establish an affirmative procurement program if the price of EPA-designated products acquired exceeds $10,000 or if the aggregate amount paid for such products, or for functionally equivalent products, in the preceding fiscal year was $10,000 or

---

their workforce (FAR subpart 22.2 subparts 22.3, 22.6, 22.10 and 22.4); and rules requiring certain contractors to develop written affirmative action programmes to ensure equal opportunities (FAR subpart 22.8), prohibiting contractors from discriminating amongst their staff on grounds of age (FAR subpart 22.9), requiring certain contractors to take affirmative action to employ and advance qualified individuals with disabilities or disabled veterans and veterans of the Vietnam era without discrimination based on disability or veteran's status (FAR subparts 22.14 and 22.13); and prohibiting certain purchases produced by forced or indentured child labour (FAR subpart 22.15).

22. Notably Executive Order 13101 of September 14, 1998, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition.

23. <http://www.epa.gov/cpg/>

more [FAR, sections 23.404(a) and 23.405(a)]. Such programs must "require that 100 % of purchases of EPA-designated products contain recovered material," unless one of three grounds of derogation apply: the item cannot be acquired competitively within a reasonable time; or so as to meet appropriate performance standards; or, at a reasonable price [FAR, section 23.404(b)]. If an acquisition of an EPA-designated product does not contain recovered material the contracting officer is required to place a written justification on the contract file (copied to the agency's Environmental Executive) stating the justification based upon the grounds of derogation mentioned above [FAR, section 23.405(c)].

Further specific provision is made as to specifications. Those drafting or reviewing specifications are required to eliminate from the specifications any requirement excluding the use of recovered materials or requiring products to be manufactured from virgin materials [FAR, section 23.402(1)] and are to require in respect of EPA-designated products the use of recovered materials "to the maximum extent practicable without jeopardizing the intended end use of the item" [FAR, section 23.402(2)]. Indeed, agencies may not require the use of virgin material or supplies composed of such material unless required by law or unless the use of virgin material "is vital for safety or meeting performance requirements of the contract" [FAR section 11.302(a)]. Special requirements are provided (FAR section 11.303) for procurement of paper and writing paper (based on Executive Order 13101) to the effect that 100% of an agency's purchases of printing and writing paper must meet or exceed one of a number of minimum content standards.[24]

To assist agencies in complying with their obligations as regards recoverable materials the EPA has published a list of *Comprehensive Procurement Guideline Compliant Products* (US Government, undated) which states a list of 54 designated products (in eight product categories) and the corresponding amounts of post consumer recovered materials that Federal agencies are required to purchase. The Government Services Administration (GSA)[25] has revised purchase documents and negotiated contracts with its own suppliers to offer Federal buyers over 2000 recycled content items in categories covering office supplies, construction products, landscaping products, park and recreation products, transportation products, vehicular products and miscellaneous products.[26]

Environmentally preferable and energy-efficient products and services

US Government policy requires federal agencies to "implement cost-effective contracting preference progams favoring the acquisition of environmentally preferable and energy-efficient products and services" and to employ acquisition strategies that affirmatively implement seven environmental objectives, namely:

(i) maximise the utilisation of environmentally preferable products and services [based on guidance issued by the EPA];

24. Specifically, the paper must contain 30% post consumer material (FAR section 11.301) unless such paper is not reasonably available does not meet reasonable performance requirements, or is only available at an unreasonable price. In these cases the agency must purchase paper containing no less than 20% post consumer material.

25. The GSA manages the Federal Supply Schedule Program under which it purchases commonly used commercial supplies and services at volume-buying prices under long term contracts with its own suppliers in order, in turn, to supply other federal agencies.

26. See GSA *Environmental Products and Services Guide* (US Government 2001).

(ii) maximise the utilisation of energy-efficient products;[27]

(iii) eliminate or reduce the generation of hazardous waste and the need for special material processing (including special handling, storage, treatment, and disposal);

(iv) promote the use of non-hazardous and recovered materials;

(v) realise life cycle cost savings;

(vi) promote cost-effective waste reduction when creating plans, drawings, specifications, standards, and other product descriptions authorising material substitutions, extensions of shelf life, and process improvements;[28] and,

(vii) consider the use of biobased products.

For these purposes "environmentally preferable products" are "products and services [that] have a lesser or reduced effect on human health and the environment when compared to other products and services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, distribution, reuse, operation, maintenance, or disposal of the product or service" (FAR section 2.101). This definition appears sufficiently wide to embrace PPM requirements, including those that are not product-related.

Environmentally preferable products are to be identified in accordance with EPA guidance and this guidance is available as *Final Guidance on Environmentally Preferable Purchasing* (US Government 1999). Additional specific purchasing guides covering the purchase of food serviceware, copiers, cleaning products, carpets, electronics, and computers are also provided. They can also be accessed through the EPA web site. [29] The *Final Guidance* does not endorse specific products or brands as "environmentally preferable" but instead lays down five guiding principles to be applied by procuring agencies. These are that:

(i) environmental considerations should become part of normal purchasing practice, consistent with such traditional factors as product safety, price, performance, and availability;

(ii) consideration of environmental preferability should begin early in the acquisition process and be rooted in the ethic of pollution prevention, which strives to eliminate or reduce, up-front, potential risks to human health and the environment;

(iii) a product's environmental preferability is a function of multiple attributes from a life cycle perspective;

---

27. For these purposes an "energy-efficient product" is a product in the upper 25% of efficiency for all similar products or, if there are applicable Federal appliance or equipment efficiency standards, a product that is at least 10% more efficient than the minimum Federal standard.

28. "Waste reduction" being defined as meaning "preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products".

29. <http://www.epa.gov/opptintr/epp/pfs.html>

(iv) determining environmental preferability might involve comparing environmental impacts;[30] and,

(v) comprehensive, accurate, and meaningful information about the environmental performance of products or services is necessary in order to determine environmental preferability."

Ozone-depleting substances

Federal Government policy is that federal agencies should "implement cost-effective programs to minimise the procurement of materials and substances that contribute to the depletion of stratospheric ozone" [FAR section 23.803(1)] and should "[g]ive preference to the procurement of alternative chemicals, products, and manufacturing processes that reduce overall risks to human health and the environment by lessening the depletion of ozone in the upper stratosphere" [FAR section 23.803(2)]. To this end federal agencies are required "in preparing specifications and purchase descriptions, and in the acquisition of supplies and services..." to comply with certain legislative requirements [FAR section 23.803(b)] and to "[s]ubstitute safe alternatives to ozone-depleting substances (as identified in Title VI of the Clean Air Act) "to the maximum extent practicable" as provided by the EPA Regulations on the Protection of Stratospheric Ozone except in the case of certain substance being used for specified essential purposes, as identified under the EPA Regulations on the Protection of Stratospheric Ozone.

It follows from the above policies that federal agencies must consider use of recovered materials, environmentally preferable purchasing criteria developed by the EPA, and environmental objectives when developing, reviewing, or revising Federal and military specifications, product descriptions (including commercial item requirements), and standards; when describing Government requirements for supplies and services; and when developing source selection factors [FAR section 11.002(d)]. Furthermore, agencies are required to prepare product descriptions to achieve maximum practicable use of recovered material, other materials that are environmentally preferable, and products that are energy-efficient [FAR section 11.101(b)].

3.2 Qualification and selection

Responsible contractors

FAR (section 9.103) provides that purchases may be made from "responsible prospective contractors only" and that no purchase or contract award may be made unless the contracting officer makes an affirmative determination of responsibility. It is for the contractor to "affirmatively demonstrate" its responsibility, including, when necessary, the responsibility of its proposed sub-contractors. To be regarded as "responsible" a potential contractor must have adequate financial resources to perform the contract [FAR section 9.104-1(a)]. This means that it must either have the necessary resources in place, or propose to perform services by sub-contracting, or must demonstrate an existing commitment or arrangement that will be in place at the time of contract award, to rent, purchase, or otherwise acquire the necessary facilities, equipment, personnel or other resources [FAR section 9.104-3(a)]. Where the contract, for example a construction contract, imposes environmental requirements as to the mode of execution and these imply that the contractor will require a certain

30. In comparing environmental impacts, Federal agencies are to consider: the reversibility and geographic scale of the environmental impacts, the degree of difference among competing products or services, and the overriding objective of protecting human health.

level of financial resources, or certain plant, equipment or personnel, the lack of any of these, or of evidence of an explicit arrangement to obtain them, will justify a ruling that the contractor is not responsible. In such a case the contractor must be excluded from participation in the contract.

In order to be "responsible" a contractor must have a satisfactory performance record [FAR section 9.104-1(c)] and a contractor who is, or recently has been, seriously deficient in contract performance is to be presumed to be non-responsible unless the contracting officer determines that the circumstances were properly beyond the contractor's control, or that the contractor has taken appropriate corrective action. Failure to meet quality requirements is a significant factor to consider in determining satisfactory performance. The contracting officer is required to consider the number of contracts involved and the extent of deficient performance in each contract when making the determination. Thus, serious or repeated failure to comply with environment-related terms and condition in the execution of previous government contracts (including, in particular, those terms required to be included in contracts by the FAR themselves, as to which see below) constitute grounds entitling a contracting officer to determine that a particular potential contractor is not responsible, in which case that contractor must be excluded from participation in the contract.

To be "responsible" a contractor must have "a satisfactory record of integrity and business ethics" and this can be determined by reference to the contractor's history of compliance with the law [FAR section 9.104-4(c)]. In making a determination on this point contracting officers are required to consider all relevant credible information and to give greatest weight to violations which have occurred within the last three years. Normally, a single violation of law will not give rise to a determination of non-responsibility, but evidence of repeated, pervasive, or significant violations of the law may indicate an unsatisfactory record [FAR section 9.104-4(c)]. Where a contractor has been found to be in violation of the law but has entered into an administrative agreement with the authorities to take corrective action, they may be considered responsible. On the other hand, failure to honour such an administrative agreement is itself evidence of lack of integrity and business ethics [FAR section 9.104-4(c)]. When considering the issue of integrity and business ethics, contract officers are required to consider information based on a number of types of proceeding which are listed in the FAR section 9.104-(c)(i) to (iii). These include convictions of, and civil judgments rendered against the prospective contractor for commission of, a criminal offence (including, of course, an environmental offence) in connection with *performing* a public (federal, state or local) contract or subcontract (and any indictments for such offences); and so far as they relate, *inter alia*, to environment protection laws, any federal or state felony convictions, adverse federal court judgments in civil cases brought by the United States, adverse decisions by a federal administrative law judge, board, or commission indicating violations of law, and any federal or state felony indictments. If, having considered these factors the contracting officer considers that a potential contractor is non-responsible, it must be excluded from participating in the contract.

In addition to specific determinations on a contract-by-contract basis as to whether a particular enterprise is "responsible", the FAR also make provision (FAR subpart 9.4) for the debarment, suspension and ineligibility of certain potential contractors on similar grounds. The Government Services Administration (GSA) maintains a list of all parties debarred or suspended (or proposed for debarment, or declared ineligible by federal agencies). Contractors that are debarred, suspended or proposed for debarment are excluded from all Government contracts and agencies are precluded from soliciting offers from, awarding contracts to, or consenting to subcontracts with such contractors unless the head of the agency head (or his designee) determines that there is a compelling reason for such action (FAR section 9.405(a). Similar provisions apply under FAR section 9.405(a) to contractors declared ineligible (for the period of the ineligibility).

Toxic chemicals release reporting

Solicitations for competitive contracts expected to exceed £100,000 in value are required to include, to the maximum extent practicable as "an award eligibility criterion" a certification by the offeror that, if awarded a contract, either (i) that it will throughout the life of the contract file for such of its facilities as are to be used in the performance of the contract the Toxic Chemical Release Inventory Form prescribed by sections 313(a) and(g) of the Emergency Planning and Community Right-to-Know Act, 1986; and section 6607 of the Pollution Prevention Act; or (ii) that the facilities to be used in performance of the contract are exempt from such filing requirements on statutory grounds [FAR 23.906(a)(2)].

3.3 Compliant tenders – "additional criteria" – "contract compliance"

To be considered for award a bid must comply in all material respects with the invitation for bids [FAR sections 14.301(a) and 14.404-1(a)(1)]. Where sealed bid procedures are followed, therefore, no awards may be made unless, *inter alia*,"[a]n award is made to the responsible bidder whose bid is responsive to the terms of the invitation for bids" [FAR section 14.103-2(d)]. Thus any bid that fails to conform to the essential requirements of the invitation for bids must be rejected [FAR section 14.404-2(a) and (b)]. It is important in this connection to note that the Federal environmental policies considered above require that several specific contract terms be included in solicitations and contracts. These include, for example, requirements as to the use of recovered materials and as to certification by potential contractors that their products contain such material (FAR section 23.406); requirements in solicitations and contracts exceeding $100,000 that contractors provide an estimate of the percentage of recovered material content for EPA-designated products (FAR section 23.406); contract clauses relating to the use of ozone depleting substances (FAR section 52.223-11 and – 12); and, clauses requiring contractors to file toxic chemicals release reports [FAR section 23.906(c)]. Tenders failing to accept the application of these (and other similar) clauses will be non-compliant and will have to be rejected.

3.4 Contract award criteria and weightings

The FAR mandate the use of a range of procurement procedures depending upon the nature of the particular procurement. Where sealed bidding procedures are applied there is comparatively little discretion to apply environmental award criteria since "an award is to be made to the responsible bidder…whose bid is *most advantageous* to the Government, *considering only price and the price related factors included in the invitation*…" (FAR section 14.103-2, emphasis added). FAR section 14.201-8 sets out price-related factors that "may be" applicable in the evaluation of such bids and which "shall be included in the solicitation when applicable." None of these seem particularly apt to allow environmental discretion since they relate to specific indirect costs or delays caused by differences in inspection, transportation and location of supplies, to changes made or requested by the bidder to any provision in the invitation of bids (if it does not constitute grounds for rejection of the bid), advantages of making multiple awards, taxes, and the application of the Buy America Act etc. (FAR section 14.201-8). The solicitation of bids must identify the price-related factors other than bid price that will be considered in evaluating bids and awarding the contract (FAR section 14.201-5(c)).

Federal agencies have much greater discretion when procedures other than sealed bidding are used. When procuring "commercial items," price reasonableness must be established in every case (FAR section 12.209) and "past performance should be an important element of every evaluation and contract award" (FAR section 12.206). Under simplified acquisition procedures quotations and offers are to be evaluated on the basis established in the solicitation (FAR section 13.106-2) but if the evaluation is to use "price and other factors" contracting officers are to ensure that they can be

evaluated in an efficient and minimally burdensome fashion" (FAR section 13.106-2(b)(2)). Similarly, when purchasing commercial items under the "streamlined procedure", if evaluation factors are used, a clause listing them must be included in the solicitation and offers are to be evaluated in accordance with those criteria. Such factors may include technical, price and past performance factors (FAR section 12.602(a) and (b)).

More generally, whenever a contract is awarded using other than sealed bidding procedures (i.e. where competitive or non-competitive negotiation procedures are used) a number of potential evaluation criteria may be adopted and agencies are to use one or a combination of approaches to obtain best value, depending upon the importance of cost or price relative to other factors. Thus where a requirement is clearly definable so that the risk of unsuccessful contract performance is minimal, cost or price may be dominant. The less definitive the requirement, the more development work required, or the greater the performance risk, the more technical or past performance considerations may play a dominant role in source selection (FAR section 15.101). Where factors other than cost/price are considered the FAR distinguish between a "trade-off" process and the "lowest price technically acceptable source selection process."

A "trade-off" process is regarded as appropriate in setting award criteria "when it is in the best interest of the Government to consider award to other than the lowest priced offeror or other than the highest technically rated offeror" (FAR section 15.101-1). When using such a process all evaluation factors and significant subfactors that will affect award "and their relative importance" must be clearly stated in the solicitation (FAR 15.101-1(b)(1)). The solicitation must state whether all evaluation factors other than cost or price, when combined, are significantly more important than, approximately equal to, or significantly less important than cost or price"(FAR 15.101-1b)(2)). Such an approach permits trade-offs among cost and non-cost factors and allows the Government to accept other than the lowest priced proposal. The perceived benefit of the higher priced proposal must be such as to merit the additional cost and the rationale for the trade-off must be documented on the contract file.

A "lowest price technically acceptable source selection process" may be used and will be appropriate when best value is expected to result from selection of the technically acceptable proposal with the lowest evaluated price (FAR section 15.101-2(a)). When this approach is adopted, the "evaluation factors and significant sub-factors that establish the requirements of acceptability must be set out in the solicitation, which must also state that the award will be made on the basis of the lowest evaluated price of proposals meeting or exceeding the acceptability standards for non-cost factors" (FAR section 15.101-2(b)). In such cases trade-offs are not permitted and proposals are evaluated for acceptability but not ranked using the non-cost/price factors (FAR section 15.101-2(b)(2) and (3).)

The FAR make further provision if the process in question is a competitive negotiated acquisition. The object here is to select the proposal that represents "best value" (FAR section 13.302). The awarding authority is to ensure that proposals are "evaluated based solely on the factors and subfactors contained in the solicitation" (FAR section 15.303(b)(4)) and these factors and sub-factors are to be "tailored to the acquisition," and represent key areas of importance and emphasis to be considered in the decision. They must "support meaningful comparison and discrimination between and among competing proposals" (FAR section 15.304(b)(1) and (2)). The evaluation factors and significant subfactors (and their relative importance) are "within the broad discretion of the procuring agency, provided that price or cost is always to be evaluated (FAR section 15.304(b)(2)) and the quality of the product or service is always to be addressed "through consideration of one or more non-cost evaluation factors such as past performance, compliance with solicitation requirements, technical excellence, management capability, personnel qualifications and prior experience" (FAR section 15.304(b)(2).) Past performance is always to be evaluated in respect of the award of contracts for competitive acquisitions expected to exceed $100,000 unless the contracting officer documents the reason why past performance is not an appropriate factor in evaluating the offer (FAR section 15.304(c)(3)(ii) and (iv)). All evaluation factors and significant subfactors, and their relative importance

are to be stated clearly in the solicitation (FAR section 15.304(d)). Although the solicitation need not disclose the rating method to be used in the evaluation, it must describe the general approach that will be taken for evaluating past performance information (FAR section 15.304(d)). The solicitation must also state, at a minimum, whether all evaluation factors other than cost or price, when combined, are significantly more important than cost or price, approximately equal to cost or price, or significantly less important than cost or price (FAR section 15.304(e)). Agencies are required to evaluate offers solely on the factors and subfactors specified in the solicitation, but may use any rating method or combination of rating methods they wish (including, inter alia numerical weights).

It is clear from the above that where a procedure other than sealed bidding is adopted, the procuring entity has considerable discretion to include environmental factors, whether relating to the product's characteristics, to PPM requirements (including non-product-related requirements), to past performance amongst its criteria provided that the evaluation criteria and their relative importance are published when/as required by the rules described above.

4. Australia

In the Commonwealth of Australia "…the management of procurement is substantially decentralised with each agency being responsible for its own procurement within a centrally-prescribed framework of procurement policy and advisory guidance on best practices and techniques" (WTO 1998a at para. 7). That guidance is provided by the *Commonwealth Procurement Guidelines* (Commonwealth of Australia 2002) made by the Commonwealth Finance Minister under Regulation 7 of the Financial Management and Accountability Regulations 1997.[31] Regulation 8 requires that an official performing duties "in relation to the procurement of property or services" must "have regard to" these *Guidelines* and, where he/she "takes action that is not consistent with" them, he/she "must make a written record of his or her reasons for doing so." Attached to the *Guidelines* are *Best Practice Guidance* and details of *Additional Legislation, Policies and Resources*, neither of which are in themselves mandatory but which are intended to assist procuring bodies. The *Guidelines* do not prescribe specific procurement procedures. Instead, procuring departments and agencies have a very great deal of discretion as to the best way in which to meet their procurement needs. Thus"[b]uyers should select the most suitable procurement method on a case-by-case basis" (Commonwealth of Australia 2002a, section 2, "Procurement Methods"). This does not necessarily involve the use of competitive processes since "[t]he Government is committed to competitive procurement processes where competition will produce a commensurate benefit. However, competition is not the optimal approach in all situations. A collaborative or more selective approach may better suit certain situations" (Commonwealth of Australia 2002, section 2 "Procurement Methods"). Notwithstanding the breadth of procuring departments' discretion under the *Guidelines*, the common law requires them to treat potential contractors fairly.[32]

Consistently with the ANZGPA, the "core principle" governing Commonwealth procurement is "value for money," a principle that is itself underpinned by four "supporting principles", namely efficiency and effectiveness, accountability and transparency, ethics, and industrial development. These principles are "complemented" by other government policies including, as we shall see, policy in the field of the environment (Commonwealth of Australia 2002, section 1). Broadly speaking, procurement officials are to be satisfied that "the best possible outcome has been achieved, taking into account all relevant costs and benefits over the whole of the

31. Statutory Rules 1997 No. 328 as amended.

32. *Hughes Aircraft Systems International* v. *Air Services Australia* and *J.S. McMillan Pty Ltd. & Others* v. *Commonwealth of Australia*.

procurement cycle. Accepting the lowest price is not necessarily an indicator of best Value for Money" (Commonwealth of Australia 2002, section 1).

Value for money is to be based on a whole-of-life basis and procurement officials must make sure that the procurement method used should, itself, represent value for money. To achieve best "value for money procurement must be "efficient and effective"[33] and "[a]s no single purchasing method suits all situations the Government does not prescribe a specific purchasing method nor any arbitrary thresholds. Buyers must consider the requirements and existing market conditions of each procurement, and select a procurement method on its merits" (Commonwealth of Australia 2002, section 1.1).

Nonetheless, in seeking best "value for money" Commonwealth agencies are required to use "strategic Common Use Arrangements" where they exist. These are prescribed by the Minister of Finance or by agreement between the relevant Government portfolios (Commonwealth of Australia 2002, section 1). Furthermore, in key sectors not covered by Common Use Arrangements, but where the Government is a major purchaser, there is a pre-qualification scheme, the "Endorsed Supplier Arrangement" (ESA) covering IT, major office machines, commercial office furniture and auctioneering services. It is mandatory for Commonwealth agencies to use the ESA when purchasing IT and major office machines. (Commonwealth of Australia 2002, section 1.1.2).

In order to ensure transparency and accountability, procuring bodies must comply with a number of reporting requirements (Commonwealth of Australia 2002, section 1.2), including, *inter alia,* an obligation to report publicly available business opportunities in an adequate and timely fashion in the "Purchasing and Disposals Gazette" and to publish in that Gazette details of all contracts awarded where total estimated liabilities equal or exceed $A 2,000. There is no general requirement to publish details of selection or award criteria in advance, although agencies must publish details of industry development criteria (as to which see below).

Procurement must be conducted ethically to enable buyers and sellers to deal with each other on the basis of mutual trust and respect and to conduct business fairly, reasonably and with integrity. This involves, *inter alia,* complying with certain governance legislation (Commonwealth of Australia 2002, section 1.3).

The *Guidelines* include specific obligations, reflecting the provisions of the ANZGPA and also the Commonwealth Government's industrial policy requiring procuring bodies to consider the "commercial and practical benefits of doing business with competitive Australian and New Zealand industry when specifying requirements and evaluating value for money" (Commonwealth of Australia 2002, section 1.4). Procuring departments must also ensure that procurement methods do not discriminate against Australian and New Zealand suppliers, take into account the capability and commitment to regional markets of small businesses in their local regions, and consider any supplier-base, and competitive benefits of ensuring access for new entrants to the market. Finally, in procurements of $A5 million or more agencies are required to identify in tender documentation any industry development criteria and associated evaluation methodology and, where appropriate, opportunities for small and medium sized enterprises (Commonwealth of Australia 2002, section 1.4.3).

In addition, Government policies, including environmental policy, are part of the framework within which agencies are required to achieve value for money and "[a]gencies and their officials have an obligation to conduct procurement in accordance with relevant Government policy in the way they do business" (Commonwealth of Australia 2002, section 1). *The Additional Legislation, Policies and*

33. Financial Management and Accountability Regulations 1997, Reg. 9(b) and Australia 2002, section 1.1.

Resources annexed to the *Guidelines* expand upon this by providing that "[o]fficials should be aware of any environmental legislation and targets set by the Commonwealth, and ensure they take into account matters affecting the environment or the national estate when formulating requirements. They should *include relevant environmental criteria in specifications and requests for tender*".[34] This is reiterated by Environment Australia (the Commonwealth's Department of the Environment and Heritage) which also indicates that in respect of the concept of "value for money" that "[e]nvironmental attributes are a core principle in relation to the support for other Commonwealth policies" (Commonwealth of Australia 2001). Specific Department of Finance and Administration Guidance on "value for money" (Commonwealth of Australia 2002a) indicates the ways in which, at different stages of the procurement process, environmental policies are to be taken into account.

4.1 Technical specifications

Greening of Government, identifies amongst the beneficial aspects of greener public procurement both a "reduced demand for environmentally harmful goods and services; and an increased demand for environmentally preferable goods and services..[so that]..a more robust market [can be] created for environmentally preferable products." To help achieve this end, Environment Australia is currently developing a *Greening Government Procurement Guide* which will provide "a checklist and detailed 'green' analysis of goods and services most often purchased by Commonwealth agencies. Using this [and information provided on Environment Australia's web site] *agencies are encouraged to consider environmental criteria in purchasing, specifications and requests for tender*, while ensuring that potential discrimination is avoided" (emphasis added).

Furthermore, Environment Australia has already published a *Green Office Guide* (Commonwealth of Australia 2001a) providing information on buying environmentally friendly office equipment and including details of products carrying the "Energy Star" and the "Green Power" labels, and information about energy management software. It has also produced guidelines (Commonwealth of Australia 2001), as to the introduction of "environmentally sustainable development," defined as "using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased." In its pursuit of sustainable development, the Commonwealth Government is encouraging all its departments and agencies to develop and implement an Environmental Management System by 2002" (Commonwealth of Australia 2001) in order to provide a structured system to improve management of resources and in turn help reduce negative effects on the environment through reducing paper use and other waste, increasing recycling and conserving landfill space (Commonwealth of Australia 2001). Furthermore, green procurement is seen as an essential part of a comprehensive EMS so that "[i]nformation on the environmental qualities of goods and services needs to be understood by procurement officers as they write tenders and assess tender submissions [if they are] to be able to determine best value for money" (Commonwealth of Australia 2001, under the heading "Introduction to Environmentally Sustainable Development"). The Commonwealth Government has therefore stated its intention to be "at the forefront in green procurement practice" through buying goods and services "that seek to minimise possible environmental impact"; by working with industry to encourage continuous reduction in adverse environment impacts of goods and services; and by assessing the environmental impact of goods and services against "informed and internationally recognised standards and methods" (Commonwealth of Australia 2001).

34. *Additional Legislation*, section 3 "Environmental Procurement" emphasis added.

Energy efficiency

The Commonwealth also has an Energy Policy intended to improve the energy efficiency of all Commonwealth Government operations and to reduce greenhouse gas emissions. It requires, *inter alia*, that departments and agencies:

- meet energy intensity targets by 2002-2003 and report annually on energy consumption and intensity;
- that energy performance contracting be accepted and encouraged for achieving energy savings,
- that minimum energy performance apply to all new buildings (leased and owned alike);
- that all new office equipment is to be compliant with the US EPA *Energy Star* criteria where applicable;
- that all new appliances are to have 4-star or better energy rating under the Appliance Energy Rating Label Scheme;
- that opportunities to use renewable energy are to be identified and adopted where cost effective;
- that all new Commonwealth houses (leased or owned alike) have a NatHERS rating of 4-star or better, where applicable; and,
- that fuel consumption targets are to be developed for the Commonwealth and to apply from 2003.

In addition, the Commonwealth Government encourages all agencies to join the "Greenhouse Challenge", a partnership between Government and industry to reduce greenhouse gases.

Packaging

So far as packaging is concerned the Commonwealth is a signatory to the "National Packaging Covenant" a self-regulatory agreement with industry that promotes a life cycle approach to the reduction of packaging waste. As such the Commonwealth has agreed to produce an action plan to evaluate and improve environmental outcomes in the use and recovery of packaging materials, to apply the principles of the Covenant in its own operations, to identify and remove barriers to the purchase of recycled goods, and to facilitate the implementation of purchasing policies for recycled goods. "Agencies are therefore obliged to develop a purchasing policy that fosters the purchase of recycled goods and to improve environmental outcomes through the use and recovery of recycled packaging" (Commonwealth of Australia 2001, "The National Packaging Covenant").

Waste reduction

In addition, in November 1996 the Commonwealth (and State and Territory Governments and the Government of New Zealand) endorsed "National Government Waste Reduction Purchasing Guidelines" (Commonwealth of Australia 2001) in the context of the Australian and New Zealand Environment and Conservation Council whereby the parties agree to take a number of steps to

maximise waste reduction by ensuring that their own agencies work towards agreed waste minimisation targets, including, the adoption of purchasing policies aimed at promoting clean production and recycling. The Commonwealth Government therefore encourages agencies to develop contracts with waste management providers which are environmentally sensitive and comply with National Waste Reduction and Purchasing Guidelines.

Whole of life policy

Finally, the Government advises agencies that they must implement the whole-of-life policy when formulating purchasing requirements, specifications and offers as part of the procurement process. It indicates that this may, for example, require that goods and services comply with health and safety requirements "meet environmental best practice in energy efficiency and/or consumption"; are environmentally sound in manufacture, use and disposal; are reusable or recyclable, designed for ease of recycling, re-manufacture or minimisation of waste; and are designed and made for reliability, long life and easy upgrading or updating (Commonwealth of Australia 2001). Thus "[b]idders may also be asked to provide information on any other environmental benefits of their goods and services and how they currently assess the environmental impact of those goods and services" (Commonwealth of Australia 2001). Life-cycle analysis of environmental impacts of products is to be endorsed because "[w]hole of life considerations are a key green procurement measure and should form part of a green purchasing policy" (Commonwealth of Australia 2001).

So far as more specific aspects of the definition of specifications are concerned, the general principles indicated above are supported by the *Value for Money Guidance*, which indicates that when identifying best value officials will need, *inter alia*, carefully to assess the functionality of the required product; to evaluate the offer by taking into account the costs and benefits involved on a whole life basis; to assess and allow for risks; to establish or verify the competence, viability and capability of prospective suppliers; to comply with other Government policies; and to incorporate disposal costs.

The generality of the above guidance provided to Commonwealth procuring entities is such that procuring entities appear to be able to take account of a wide range of factors when defining their specifications including cost-related environmental factors, such as energy use, disposal etc. Furthermore since the recommended approach is the "whole of life" approach they also seem to be entitled to have regard to factors relating to the production phase, including non-product-related PPM requirements and compliance with eco-labelling requirements.

4.2 Qualification and selection

The *Value for Money Guidance* suggests that when considering the "characteristics and capabilities of suppliers" officials should consider, *inter alia*, technical production capability and capacity (including availability of capacity); quality assurance status; experience, qualifications and skills of key personnel; experience and previous performance in similar work; compliance with requirements of relevant government policies; and management policies and regard to social responsibilities, *care for the environment*, safety, quality." (emphasis added). Once more, the generality of this guidance clearly allows procuring entities a wide range of discretion to require a potential tenderer to demonstrate its capacity to perform the contract in an environmentally satisfactory way. Factors that might be taken into account seem to include the potential contractor's track record of compliance with environmental laws and with environmentally related contract conditions in previous contracts, and the potential contractors "management policies" with regard to care for the environment, including its adherence to an environmental management system in its business generally.

4.3 Compliant tenders - "additional criteria" - "contract compliance"

Procuring departments are required to take account of Government environmental (and other) policies when making procurement decisions they may seek to do so by including contract terms imposing environmental obligations upon the successful tender. A tender failing to accept such terms would (variants apart) be non-compliant and, as such, ought as a matter of equality of tenderers to be rejected.

4.4 Contract award criteria and weightings

So far as the cost related contract award criteria are concerned the *Value for Money Guidance* provides a non-exhaustive list of factors relevant when assessing "whole life costs" including , *inter alia*, running costs including energy usage; servicing and maintenance costs; and decommissioning and disposal costs. Clearly these are capable of reflecting environmental costs such as energy use, disposal, re-use or recycling costs. The *Value for Money Guidance* also suggests that when considering the "characteristics of the offer" officials should consider a range of non-cost factors including, *inter alia*, the extent to which supplies meet specifications; fitness for purpose; compliance with occupational health and safety requirements; conformity with standards; disposal issues *including environmental considerations*; and the degree of compliance with contractual terms and conditions. The generality of this guidance again implies a significant degree of discretion on the part of the procuring entity as regards the definition and application of award criteria. There is no suggestion of any restriction that might preclude an entity from having regard to environmental aspects of bids, or from emphasising such aspects as relative to other factors through the application of weightings. It appears, therefore, that entities may have regard to environmental factors affecting whole of life costs and environmental factors relating to externalities. As noted above, there is no general requirement for prior publication of details about award criteria or weightings.

5. Conclusions

This chapter has reviewed the potential for the incorporation of "environmental" concerns into issues such as the qualification and selection of potential suppliers, technical specifications of goods and services to be procured, and contract award criteria are explored. In general there do not seem to be significant constraints on the use of environmental criteria in various stages of the procurement process in any of the three cases reviewed. Indeed, in the United States there is an explicit policy of requiring environmental criteria to be included.

There are a number of interesting features which have emerged in this review. Perhaps most important, is the extent to which the different regimes allow for or encourage **secondary policy objectives**. For instance, in the case of England and Wales the Treasury's *Note* states that public procurement can not be used to futher other policy objectives. However, the DETR's *Statement* lists a number of environment-related factors which should be included in procurement decision-making and which do not self-evidently improve "value for money". In Australia and the United States, there do not seem to be any such ambiguities, with secondary policy objectives being recognised unambiguously as legitimate uses of public procurement.

There do not seem to be any constraints on the inclusion of **non-product related PPM** requirements in technical specifications in any of the three regimes. Nor do there appear to be significant legal constraints on the use of management-related criteria (such as the presence of an **environmental management system**) in the selection of potential suppliers, at least for areas in which this is of direct relevance such as facilities management and service contracts. The Australian regime appears to provide the strongest support for the use of EMS in the selection of suppliers.

Contract award criteria in England and Wales are based upon the "lowest price" or "most economically advantageous" rule of the EC procurement directives. This allows for the incorporation of life-cycle costs including those related to the environment (i.e. energy or disposal costs) but not necessarily environmental costs which are not financial in nature (i.e. carbon dioxide emissions or leachate from landfills). In the American FAR regime, there is little discretion at the contract award stage to include environment-related factors for sealed bids. However, under other types of award there is considerable scope for the inclusion of environment-related factors (including explicit trade-offs), as long as the procedure is transparent.

One additional interesting feature of the procurement regime for England and Wales is the treatment of procurement at the local authority level. Under the principle of the "power of well-being" local authorities are encouraged to pursue a procurement strategy which has benefits beyond their own jurisdiction. This is significant since with responsibility for procurement being decentralised to lower levels of government, there is a danger that environment-related costs or benefits accrued by public authorities other than that undertaking the purchase will not be considered in decision-making. Indeed, this issue is of much wider relevance - i.e. for instance if procurement of non-toxic cleaning agents by one authority reduces health expenditures for another authority.

REFERENCES

CARRIER, PAUL (1997). "Domestic Price Preference in Public Purchasing: An Overview and Proposal of the Amendment of the Agreement on Government Procurement" 10 *New York International Law Review* 59.

CARRIER, PAUL (1997a). "Sovereignty under the Agreement on Government Procurement" 6 *Minnesota Journal of Global Trade* 67.

COMMONWEALTH OF AUSTRALIA (2001). "Greening of Government" , October 8, 2001. http://ea.gov.au/industry/sustainable/greening-govt/index.html.

COMMONWEALTH OF AUSTRALIA ENVIRONMENT AUSTRALIA (2001a). "Green Office Guide".

COMMONWEALTH OF AUSTRALIA (2002). "Commonwealth Procurement Guidelines and Best Practice Guidance", February 2002.

COMMONWEALTH OF AUSTRALIA (2002a). "Value for Money Guidance", March 21, 2002. http://www.finance.gov.au/ctc/toolkits/valueformoney/value_for_money html

CORR, F. AND ZIZZIS, K (1999). "Convergence and Opportunity: The WTO Government Procurement Agreement and US Procurement Reform" 18 *New York Law School Journal of International and Comparative Law* 303.

MCCADNEY, JENNIFER (1999). "The Green Society? Leveraging the Government's Buying Powers to Create Markets for Recycled Products" 29 *Public Contract Law Journal* 135.

OECD (1999). Joint Working Party on Trade and Environment: "Trade Issues in the Greening of Public Purchasing", COM/TD/ENV(97)111/FINAL, March 15, 1999.

OECD (2000). *Greener Public Puchasing: Issues and Practical Solutions*, Paris, OECD.

TIEFER (1997). "The GATT Agreement on Government Procurement in Theory and Practice" 26 *University of Baltimore Law Review* 31.

UK GOVERNMENT (UNDATED). *Environmental Issues in Purchasing: Note by the Treasury and the DETR*: http:///.hm-treasury.gov/uk/about/about_envpurchas.cfm

UK GOVERNMENT (1998). *HM Treasury Guidance* , September 1998.

UK GOVERNMENT (1998a). *Greening of Government Operations*, May 1998.

UK GOVERNMENT (1999). *DETR Greening Operations Policy Statement* , October 25, 1999. http://wwww.defra.gov.uk/environment/greening/policy99/index.html

UK GOVERNMENT (1999a). *DETR Circular 10/99 Local Government Act 1999: Part I Best Value*, December 14, 1999.

UK GOVERNMENT (1999b). *A better quality of life- a strategy for sustainable development in the UK*, May 1999?

UK GOVERNMENT (1999c). *The Government's Sustainable development strategy: What does it mean for local authorities*, July 1999.

UK GOVERNMENT (2000).*DEFRA Greening Government Operations- Procurement Circular 02/2000 Departmental Procurement and the Environmental Agenda*, September 4, 2000.

UK GOVERNMENT (2000a). *DETR Guide to Quality Schemes and Best Value*, February 2000.

UK GOVERNMENT (2001). *DEFRA Greening Government Operations: Green Guide for Buyers* February 9, 2001 http://www.defra.gov.uk.environment/greening/greenpro/greenbuy/18.htm

UK GOVERNMENT (2001a). *DETR Power to Promote or Improve Economic, Social or Environmental Well-being* (Final Guidance)., May 14, 2001

UK GOVERNMENT (2001b). *DETR Local Authority Procurement: A Research Report*, June 28, 2001.

US GOVERNMENT (UNDATED), *Environmental Protection Agency Comprehensive Procurement Guidelines List of Compliant Products* http://www.gsa.gov/Portal/content/offerings_ content.jsp?

US GOVERNMENT (1998). "Defense Federal Acquisition Regulation: Supplement 1998" as amended April 26, 2002

US GOVERNMENT (1999). "Environmental Protection Agency Final Guidance on Environmentally Preferable Products" *Federal Register* vol. 64 No. 161, 45810, August 20, 1999.

US GOVERNMENT (2000). *Federal Acquisition Regulations*, September 2000 reissue as amended.

US GOVERNMENT (2001). *Government Services Agency Environmental Products and Services Guide* http://www.gsa.gov/Portal/pub.jsp?OID=117635

WTO (1996). "WTO Committee on Trade and Environment Report (1996)" WTO Committee on Trade and Environment, WT/CTE/1, Nov 12, 1996.

WTO (1996b). "WTO Trade and Environment Committee Discusses Proposals on Trade Measures in Multilateral Environmental Agreements and on Eco-labelling" WTO Committee on Trade and Environment, PRESS/TE/008, April 29, 1996.

WTO (1996c). "Overview of the Agreement on Government Procurement" WTO Committee on Government Procurement, GPA/8 of 17 October 1996.

WTO (1996d). "Communication from the United States: response to the Questionnaire on Government Procurement in Services", S/WPGR/W/11/Add.6, 21 October 1996

WTO (1997). "Communication From Australia: Response to the Questionnaire on Government Procurement of Services", S/WPGR/W/11/Add.11 of 2 January 1997

WTO (1998). "Notification of National Implementing Legislation: Communication from the United States", GPA/23, 15 July 1998

WTO (1998a). "Information on Procedures and Practices on Transparency in Government Procurement: Communication from Australia", W/WGTGP/W/14 of 23 February 1998.

CONCLUSIONS

by

Nick Johnstone[1]

National Policies Division, OECD Environment Directorate

The preceding chapters have reviewed the efforts of OECD Member countries to improve their environmental performance by encouraging public authorities to purchase less environmentally-damaging goods and services. This is achieved through the application of one or more of the following instruments:

- information-based tools such as catalogues and web-sites which are designed to provide environment-related information to the attention of procurement offers and others responsible for purchasing goods and services on behalf of public authorities;

- training tools which are designed to improve awareness of the environmental implications of public purchasing and help procurement officers and others identify the environmental benefits (and costs) associated with their purchasing decisions;

- accounting and financial tools which are designed to better reflect the environmental characteristics of products when choosing between alternative goods and services; and,

- standards and directives which mandate the incorporation of specific environment-related characteristics (performance-based or technology-based) in the goods and services purchased.

The use of such instruments in formal 'greener public purchasing' programmes is growing in importance. Amongst other factors, their success appears to depend on the simplicity of their application, the need to ensure high-level commitment, and the active participation of the procurement officers themselves. However, perhaps even more important than the design of GPP policies themselves, is the nature of the links between such policies and the broader policy context. The preceding chapters have reviewed this issue in three specific areas:

- GPP and the broader environmental policy context;

- GPP and public expenditure management; and,

- GPP and the legal framework for public procurement.

The discussion of the role of GPP in the broader environmental policy context concluded that while such measures can, in theory, be effective complements to other environmental policy measures

1. The views expressed in this chapter are those of the author and do not necessarily reflect those of the OECD.

which target all actors in the economy (and not just the public sector), the complexity of the links between different policies is such that this can not be taken as given. As such, the role of GPP instruments in relation to other pre-existing policies such as eco-labels, performance standards and economic instruments needs to be assessed when countries introduce GPP programmes and policies.

In addition, the indirect effects of GPP programmes and policies on firms and households who are not directly affected by the policy needs to be taken into account in the design of the measures. It has been argued that the benefits of GPP programmes are likely to be maximised when they 'leverage' improved environmental performance in the wider economy. This would arise in cases where GPP programmes help firms to realise economies of scale in the production of environmentally-preferable goods and services. Such benefits might also arise if procurement policies help them to shift down their 'learning curve' or encourage diffusion through demonstration effects.

While there may also be some negative effects on the wider economy - such as through crowding out – these are likely to be less important in the longer-run. However, policymakers must guard against the potential negative implications of such effects by designing their policies to fit existing market conditions. An instrument that is efficient in encouraging the use of renewable energy may not be an efficient instrument to use to encourage the use of goods made from recycled materials.

There is no question that some efforts to 'green public purchasing' come at net financial cost. If this were not the case, they would be less prevalent. In such cases public authorities need to evaluate whether the environmental benefits derived warrant the financial costs. Unfortunately, there have been very few systematic evaluations of existing GPP programmes and policies. This is a significant shortcoming and can be attributed in large part to the absence of data required in order to undertake such evaluations. If Ministries responsible for environmental affairs are to ensure that GPP policies are effective and efficient such evaluations need to be undertaken.

However, the discussion on the links between 'public expenditure management' and the environmental performance of public procurement highlighted the potential for there to be significant 'win wins' in which improved efficiency in public expenditure management can co-exist with improved environmental performance. In some cases a better balance between costs and benefits (financial and environmental) can be achieved by:

- improved assessment of 'whole life' costs in accounting and investment appraisal techniques;
- ensuring that costs and benefits are better evaluated across all relevant public authorities, and not just that which is undertaking the procurement decision;
- removal of artificial restrictions on the planning horizon of the agency or ministry responsible for a given procurement decision; and,
- improving the alignment of incentives for different cost centres within the agency or ministry responsible for procurement.

In such cases environmental benefits might arise incidentally from efforts to manage public finances more efficiently. This is particularly important in areas such as investments in energy efficiency, but the preceding chapters have highlighted other areas where such benefits may also arise.

Even if reforms in more general financial, budget and accounting procedures are not feasible, the use of financial instruments within GPP programmes themselves can yield important gains. For instance the use of third-party financing and outsourcing has allowed some public authorities to overcome capital constraints and other disincentives to 'green' their procurement in a

cost-effective manner. In addition, some public authorities have used 'shadow pricing' of non-internalised environmental externalities in their procurement decision-making.

While all efforts to introduce environmental criteria into procurement decisions run the risk of falling foul of existing constraints within domestic competition policy and international trade law, the analysis in this book has not found this to be a significant constraint in practice. Whether in terms of the technical specifications of the goods and services to be purchased, the qualification and selection of potential suppliers, or the contract award criteria, under most domestic and international procurement regimes there appear to be few constraints on the incorporation of environment-related criteria.

However, there are some elements which could benefit from clarification in at least some of the procurement regimes reviewed. These ambiguities have lead to a degree of uncertainty amongst procurement officers. Indeed, risk-averse procurement officers may be unwilling to pay a premium for less environmentally-damaging goods and services in the face of such uncertainty. This uncertainty, in addition to any additional administrative burdens and search costs, can be a barrier to the application of GPP policies.

In summary then, effective and efficient greener public purchasing necessitates co-ordination between a wide spectrum of public authorities. At the very least this includes budget officials and financial controllers, environmental policymakers, international trade officers, officials responsible for procurement law and competition policy and, of course, the procurement officers themselves.

ANNEX A:

SUMMARY OF PROCEEDINGS OF WORKSHOP ON "BUDGET, FINANCIAL & ACCOUNTING ISSUES IN GREENER PUBLIC PURCHASING"

Jointly Organised by the OECD Environment Directorate and the Austrian Ministry of Agriculture, Forestry, Environment and Water Management
October 29th-30th, 2001 - Vienna

1. Background to the Workshop

As this report has documented, public procurement can be used to bring about direct environmental benefits through the improved environmental performance of public authorities at all levels of government. Perhaps more significantly, it can also yield indirect environmental benefits through the effects that it can have on the economy as a whole. By encouraging the development, commercialisation and diffusion of less environmentally-damaging products and services, government procurement can play an important role in encouraging the private sector to improve the environmental characteristics of their own procurement strategies.

In order to capture these opportunities a significant number of OECD Member countries have introduced initiatives to promote greener public purchasing. OECD's activities in this area date from 1996, focussing on practical issues associated with the implementation of GPP policies and practices. More recent work has focussed on the means by which reforms in public expenditure management and improved environmental performance can be made to be mutually complementary endeavours. In addition, further work has been undertaken on the analysis of the general conditions under which GPP programmes and policies are likely to be effective and efficient.

All of these issues were addressed in a workshop on "Budget, Financial and Accounting Issues in Greener Public Procurement", which was jointly organised by the Austrian Ministry of the Environment and the OECD Secretariat, and took place in Vienna, on October 29th and 30th 2001. The meeting brought together 50 participants from various OECD member countries, including budget and procurement officers and officers from environmental policy agencies. Four background reports[1] and six country-reports on GPP were presented at the workshop and the main issues were discussed in break-out sessions. The meeting was chaired by Mr. Bob Ryder of the UK Department for Environment, Food and Rural Affairs.

2. Environmental Impacts of GPP policies

The workshop reports and participants distinguished between the direct effects of GPP policies on the environmental performance of public authorities themselves and the indirect effects on the broader marketplace.

---

1. Chapters 1 through 4 of the present volume are revised versions of the background papers.

2.1 *Direct effects*

The importance of public procurement in total demand is, of course, a significant determinant of the potential "leverage" of GPP programmes. In most OECD countries, central governments are responsible for the single largest share of the public procurement market, although they only account for one third of total public procurement. Sub-central governments (municipal, state/provincial and regional) and social security funds account for the two other thirds but do not act as cohesively as a single unit. Many participants pointed out that in many cases this is also true within central governments.

In some sectors and for some products, government procurement covers a large share of the market and GPP policies have considerable potential to effect change. In sectors such as road construction or defence, for instance, the central government is the primary source of demand. Detailed analyses at the sectoral level were not provided at the workshop, although the present volume does provide some figures based upon input-output tables. Shipbuilding, aircraft, community services, communications services and paper products figure largely for a number of countries.

For the *local* government procurement, more detailed data was available, thanks to a presentation made by the International Council for Local Environmental Initiatives (Plas 2001). ICLEI has identified the importance of local government procurement for different goods[2]. They found that energy, information and telecommunications equipment and buildings had high importance; that personal transport, furniture or food had variable importance; and, that white goods and paper had only limited importance in local government procurement.

Clearly some of these sectors are environmentally significant and efforts to improve the environmental characteristics of goods and services procured from these sectors could have positive environmental consequences. Indeed, one of the country-reports (Klausbruckner 2001) provided detailed evidence of the importance of improved procurement practices for Vienna hospitals.

In addition, it was emphasised that some of the benefits may be less readily quantifiable. For instance, awareness of the environmental characteristics of procurement may result in more general improvements in operations and management, yielding further environmental improvements. However, measuring such effects is likely to be very difficult.

2.2 *Indirect effects*

While many GPP policies are primarily designed to improve the government's own performance, such policies may also have impacts on the private sector's procurement. In some cases these impacts are likely to be positive (i.e. through demonstration effects and induced innovation), while in other cases they may be negative (i.e. through crowding out). The workshop participants discussed some of the conditions under which various impacts are likely to occur.

Induced innovation

Public procurement, by increasing the demand for "green" products, can induce cost reductions in the green sector either by allowing for the realisation of economies of scale or by helping

2. This study was carried out in six cities: Hamburg, Kolding, Malmö, Miskolc, Stuttgart and Zürich ; the results presented in Vienna are still preliminary.

firms to shift along their learning curves. This can result in increased diffusion of greens products and services throughout the economy as a whole. Further upstream, public procurement can also encourage innovation.

This means that GPP may be particularly successful when it targets the development and commercialisation of new products. A pre-condition for this is a latent demand in the private sector. The private sector must have a clear incentive to adopt the new products. Therefore, one of the themes which emerged from the workshop was the need to emphasise that GPP might be an effective instrument in order to "launch" new green products if the programme is targeted at products in which technological externalities are important and where there is latent demand.

However, it was pointed out that in many cases GPP policies have not been targeted at such types of goods and services, but rather at more homogeneous products in more mature sectors. The use of recycled paper was cited as one example. However, in other cases this is not the case. For instance, computer and other electronic products have been targeted in many schemes, and this is perhaps an area where procurement policy can have important impacts on innovation.

Demonstration effects

Participants noted that there are different avenues through which these benefits from innovation can arise. Public procurement can have positive effects on the demand side, helping risk averse private firms to overcome their wariness to invest in newer (and untried) technologies which have fewer environmental impacts.

For instance, the government can set a good example or prove the effectiveness of green products in terms of specific performance criteria, which are then adopted by private purchasers. Workshop participants from Austria, Switzerland and the US have given evidence of such phenomena (Klausbruckner 2001 and Vallina 2001). In the US, for instance, so called "Pilot Projects" have served to test recycled toner cartridges or chlorine-free paper in governmental agencies and have been proven successful in overcoming people's unwillingness to use these products.

Crowding out

In some cases, GPP policies can trigger counter-reactions in the private sector which can cancel positive effects in the public sector: as prices for the green product rise with increasing public demand, the private sector switches to the brown product – a phenomenon which is known as "crowding out".

Some participants raised the question whether crowding out was merely a short-term phenomenon. This could mean that the supply of the green product would adjust to a higher demand in the long term and thereby overcome the problem of crowding out. It was even suggested that the suppliers could be flexible enough to foresee an increased demand in the green product and avoid a price increase through higher production levels. Clearly this depends upon market conditions.

3. Conditions for efficient implementation of GPP Policies

The workshop participants identified three key areas required in order to implement GPP in an efficient way: the intelligent use of information and training, the implementation of integrated management systems including senior level management and environmental experts, and the right mix with other policy measures.

3.1 Information and Training

It was widely argued among workshop participants that the use of internet-based information tools leads to greater transparency, greater rationality and more co-operation with other countries. Workshop participants from Finland, the US and Sweden illustrated their experiences with computer-based information programmes for procurement officers. These programmes are set up in order to facilitate both, the product specification phase and the comparison of different tenders.

In Finland an internet-programme offers a range of technical specifications for different product groups (Nissinen 2001). These specifications are based on information from eco-labeling criteria, questionnaires to suppliers and research papers. They are supposed to be regularly updated with the revenues generated from its users. Several workshop participants stressed that information from suppliers was crucial for the design of useful GPP criteria. They also pointed out that cooperation with the industry could help the latter to adapt to GPP.

Concerning the comparison of different tenders, computer-based cost-calculators were favoured by most of the workshop participants. Through such tools, procurement officers are able to weight the importance of different procurement characteristics, such as economic performance, environmental performance, quality or reliability of delivery and a computer could then calculate the best tender. The US Government successfully uses cost-calculators for products such as building material including LCA analyses in the calculations. One example is the Building for Environmental and Economic Sustainability Programme (BEES) by the National Institute of Standards and Technology (NIST).

The workshop participants also agreed on the importance of training programmes, which should be associated with GPP. These programmes would not only concern procurement officers but also end-users. Procurement officers, stressed some of the workshop-participants, need clear rules (or computer programmes) for GPP tenders, as they are too time-constrained to check the available information in detail. End users, on the other hand, should be trained in the appropriate use of new products so that they would not undermine the procurement policy. Some workshop participants gave examples of such training programmes e.g. training for lorry drivers in the UK or for cleaning staff in Austria.

3.2 Integrated assessment methods

Integrated assessment was thought to be another key element for efficient GPP implementation. More cooperation between procurement officers and experts in environmental issues was thought to be particularly important. Some participants recommended the creation of environmental expert panels, which would identify appropriate GPP policies for their agencies. One example is the UK's "Gateway Programme", which makes the approval of a project conditional upon agreement from an expert panel. For smaller procurement processes, workshop participants suggested a regular steering group could identify "win-win" policies. Some participants (ICLEI and US) have also stressed that the integration of senior managers in the GPP process is crucial to a successful GPP policy.

Steering groups or expert panels could provide the methodological framework for GPP policies, decide upon the assessment method to be used, and pass judgment on difficult assessment cases. In particular, workshop participants mentioned problematic cases such as:

- How to compare green and brown products which do not have exactly identical functional attributes?;

- How to choose between two "green" products that have the same functional attributes but different environmental impacts?; and,

- How to account for uncertain long-term effects associated with the different qualitative characteristics of some greener products?

The complexity of these valuation questions often leads to the undue use of single environmental criteria, which might define "environmentally preferable" products in a counter-productive manner. One of the workshop participants gave an example of this from the UK, where weight was the criteria to choose the environmentally most preferable plastic bag, which excluded the heavier recycled bags from the market.

3.3 GPP as part of a policy mix

GPP often serves in areas where environmental regulation is absent or believed to be insufficient. The workshop participants felt that GPP is an instrument which is flexible enough to partly fill the gap left by inadequate regulations, at least in so far as the environmental performance of public authorities is concerned.

At the same time, regulations are an important framework for GPP. Austria for example presented one GPP policy which relies on input-output analysis of material flows (Oppenauer 2001). The public authorities' incentives to apply the findings of this analysis depend entirely upon the existence of disposal costs which are set by regulation.

Some workshop participants stressed the importance of policy coherence: if environmental externalities of a product are already targeted by other policies, this has to be considered by GPP. For instance, if there was an ideal tax on CO_2 emissions, GPP should not usually be used to explicitly favour the purchase of particular vehicles, above and beyond the incentives provided by the tax.

However, since some public authorities or agencies may have few incentives to reduce energy use or may be exempt from tax payments, GPP may even be required in such cases since the inappropriate procurement choice may be made. Similarly, if it was felt that there was a market failure associated with the commercialisation of particular green vehicles then such a policy may also be favoured even in the presence of the tax. In a more general way, workshop participants agreed that there was need for better policy-co-ordination between GPP and other environmental policies, in order to ensure a sensible "policy mix".

3.4 Assessment of GPP policies

A general assessment of the efficiency of GPP policies was difficult because of the lack of empirical data. However, "anecdotal" evidence of successful GPP policies could be given from many countries, such as Austria (Klausbruckner 2001 and Oppenauer 2001), the Czech Republic (Hájek and Sucharovová 2001), Denmark (ICLEI 2001), Finland (Nissinen 2001) and the US (Vallina 2001). The EU has announced a forthcoming study on the state of GPP in different EU-countries which intends to look at the actual practice of GPP (as opposed to the legal framework of GPP). ICLEI has also started a study, which will assess the environmental relief potential of different GPP policies (Plas 2001).

There was agreement among workshop participants about the following general characteristics of GPP programmes:

- GPP programmes are geographically concentrated in some areas and nearly absent in others (such as the south of Europe for instance);

- GPP programmes have different legal status in different countries. ICLEI gave some examples of countries where GPP is mandatory and others where it is voluntary; and,

- The degree of centralisation varies, with some countries placing much greater emphasis on local practices (such as Japan and Denmark), while others have a more centralised approach (France).

In addition, the workshop called for more empirical data on procurement practices, and especially on green procurement. Indeed, *ex post* evaluation of GPP policies are scarce because the data is not sufficient. This has been confirmed in particular by the United States, which has not been able to carry out some of the assessments of GPP that they scheduled due to the inadequacy of available data. The workshop also stressed the need for more "in-built" mechanisms within agencies, which could make assessments easier and less costly.

4. Financial Incentives in GPP Policies

There are a variety of instruments which can be used to apply GPP policies. These can include information-based schemes targeted at procurement officers, the use of "shadow prices" for environmental impacts in the evaluation of alternative investments, the application of environment-related performance standards for the procurement of particular goods and services, and a number of other related measures.

Eco-labels are perhaps the most prevalent tool, with many public authorities mandating or requesting that procurement-officers purchase labeled products wherever feasible. Workshop participants illustrated the efforts of different countries in this area (Hájek and Sucharovová 2001, ICLEI 2001), but also stressed the need for more mutual recognition. More generally, the workshop participants called for more translation of already available information in order to reduce implementation costs of GPP policies.

As noted above, those instruments which relate more specifically to financial incentives or appraisal methods were discussed in greater depth at the meeting. Some of the main points are discussed below.

Decrees and transferable credits

After information-based and training-based measures, decrees are the tool that is probably most often used in GPP programmes in OECD countries. Workshop participants gave different examples for the use of decrees. In the US, for instance, there is a programme of "automatic substitutions" regarding recycled paper: the EPA has signed a contract with the central procurement agency in order to respond to every demand for virgin paper automatically by delivering recycled paper (Vallina 2001). Similarly, the UK has decided to buy 10% of governmental energy consumption from renewable energy sources.

Decrees are politically fixed goals of environmental policy. If mandated in a strict fashion across all operations they will not generally allow for efficient achievement of the objective (even within government operations). However, flexibility can be introduced in a way which brings about incentives for improved efficiency. For instance, through the use of tradable credits, allowance can be made to encourage environmental improvements in those areas where they are the most cost-efficient.

GPP policy could consist in the issuing of tradable credits for a particular procurement sector (such as energy-procurement). However, none of the countries has used tradable permits in the above context.

Price preferences and shadow prices

Price preferences are yet another tool to take environmental externalities into account in the procurement process. The US uses them as a short-term policy tool only (Vallina 2001). This restriction was seen as appropriate amongst most of the workshop participants. This is because short-term price preferences encourage the launching of new green products without excessively distorting the price system over the long term. However, price preferences are usually used as a means of support, and this can have perverse environmental effects (i.e. encouraging substitution, but also encouraging consumption overall).

Shadow prices are more direct in so far as they internalise the environmental externality by its exact amount – i.e. they tax the environmental bad directly. Moreover, in contrast to decrees, shadow pricing is more "blind", encouraging procurement officers to choose whichever green products are relatively competitive and cost-saving. This is also why some workshop participants seemed to favour their use over the use of decrees which are usually more interventionist. However, in contrast to decrees, countries have very little experience with shadow prices.

Third-party financing

Many GPP policies seek to overcome capital scarcity, which can discourage green investments. The use of third-party financing is one possible means of addressing issue. Energy Savings Performance Contracts (ESPCs), for instance, were considered to be a very promising tool by the workshop participants. In the United States ESPCs have led to substantial investments in new greener equipment (Vallina 2001). ESPC allow government agencies to invest in greener equipment without bearing the capital costs at the beginning of the investment, as investments are paid with the energy savings achieved. Maintenance costs are also low. In addition, the intervention of private specialists makes decision-making concerning green equipment less burdensome for the public agency.

However, ESPCs also have some shortcomings. They represent a long-term commitment (25 years) for the respective agency and thus future budgetary obligations. Also, in practice, an ESPC can turn out to be rather expensive, as 100% of all energy savings go to the contractor, and not, as theoretically possible, a decreasing share over time.

This last point has led the US government to think of new financial tools, which are derived from ESPCs: the Federal Energy Bank and modified ESPCs for buildings (Vallina 2001). The Federal Energy Bank would replace the private investor and thus offer an ESPC with better conditions, without canceling the advantages of an investment exterior to the agency. An ESPC for buildings would allow the use of contracts not only for energy-saving equipment, but also for the whole construction of a building.

5. GPP and Budget Systems: Complementary Benefits from the Removal of Policy Failures

Budget, financial and accounting systems can be barriers to environmentally preferable procurement. Removing policy failures in this area can lead to more environmentally friendly procurement, even without implementing explicit GPP policies. Analogously, GPP can help to

identify institutional deficiencies and lead to both lower procurement costs and higher environmental quality. Such situations are often qualified as "win-wins".

The workshop participants identified budget, financial and accounting issues which can influence environmental characteristics of procurement: foreshortened planning horizons; split departmental responsibility for capital and operating costs; inadequate managerial responsibility for operating costs; accounting systems and inadequate costing of future liabilities; the costing of physical assets; and, managerial flexibility in the choice of inputs and the retention of savings.

The workshop participants confirmed the importance of reforms in the above areas and stressed the need to emphasise both the economic and environmental case for budget reforms. They established the following 'check-list' in order to identify areas of potential "win-win" reforms:

- Are the obstacles of practical relevance?
- Are they environmentally significant?
- Is there realistic potential for reform?

Applying the above "check-list", workshop participants identified promising and less promising areas for reform. Presentations from the US and Austria illustrated the importance of giving managers some ability to retain savings from efficiency improvements as key. In the Vienna Hospital Association, for example, they where an important factor in the successful implementation of a range of reforms, such as waste and cloth reduction or energy-and water-savings (Klausbruckner 2001).

In addition, workshop participants felt that asset registrars provide policy-makers with the necessary information to make sensible decisions related to the need for and the nature of new investments, particularly with respect to property and some capital equipment. To the extent that asset registrars provide information necessary to evaluate the need for new greenfield investments they can have beneficial effects on the environment.

Moreover, a high potential for reform was identified in the following areas: split departmental responsibility for operating and capital costs; inadequate managerial responsibility for operating costs; and, inadequate flexibility in the choice of inputs. Together these measures would give managers the means and incentives to increase the efficiency of their procurement; and, perhaps reduce environmental impacts

A change in the budgeting time-span on the other hand was thought to have a low potential for reform. Likewise, framework agreements, which concern bulk-purchasing of sub-central government units of different agencies, were found to be problematic tools, although countries' experiences with such agreements were mixed.

In any event, while reforms of the sort discussed above are likely to have positive environmental consequences (particularly with respect to issues such as reduced energy use and waste disposal), it is important to recognise that this may not always be the case. Nonetheless, many workshop participants argued that in many cases GPP policies were likely to result in financial savings. This can be relatively direct such as through energy-and-water-savings or reduced waste disposal costs (Klausbrukner 2001 and Oppenheimer 2001).

However, what was left unanswered by the workshop participants was why such unexploited opportunities for cost savings existed even when environmental characteristics are ignored. Indeed, one country report (Hajek and Sucharovova 2001) pointed out that in their

experience in strict terms, financial issues were not a barrier to greener purchasing except for one particular type of product.

Many empirical examples from workshop participants illustrated the cost-saving potential arising from the implementation of GPP policies. The United States, for instance, has implemented the so-called "Pharmacies Programme" in which the objective of reduction of pharmaceutical waste has led to the restructuring of the pharmacy management: non-used pharmacies could be returned to pharmacy-centres. This programme reduced the chemical waste by 60% within a period of three years. Another example is the US "Capital Programming Policies" which stopped, by virtue of the implementation of GPP policies, the inefficient use of governmental funds in certain building contracts (Vallina 2001).

In addition, the Vienna Hospital System presented a project which induced a whole range of efficiency improvements via the implementation of GPP policies (Klausbruckner 2001). Cost savings in this project were due to different factors:

- First, a more rational use of procurements in areas such as cleaning products, water-use, and energy use;

- Second, the avoidance of waste reduced explicit or implicit disposal costs borne by the public authorities; and,

- And finally, additional effects such as improved health may result (e.g. due to procurement of PVC-free products) and these health improvements will trigger substantial cost savings in the future.

The latter point highlights the importance of assessing benefits across the public sector generally, and not just for the procuring authority itself. This can be difficult in cases wherein responsibility for procurement has been decentralised.

It would seem, therefore, that at least some GPP policies have resulted in cost savings which should have been identified even in the absence of stated objectives to improve the environmental performance of procurement. This points to the importance of broader issues of public management and efficient procurement.

6. Conclusions

Greener public procurement does have the potential for being an effective and efficient environmental policy tool if it is used as a complement to other policies, and if the right types of goods and services are targeted. In particular, the benefits are likely to be greatest if the share of government procurement in the targeted sector is big, and/or if the public procurement helps in launching innovative products.

Many GPP policies are dependent upon the provision of information and training. These are key to their success. However, more efficient implementation of GPP should include the application of advanced policy instruments such as shadow prices, which are not yet commonly used. The application of new financial tools such as third party financing, for instance, is largely due to the establishment of GPP policies.

There are win-win situations associated with the greening of governmental procurement. On the one hand, financial, budget and accounting reforms can lead to a better consideration of environmental characteristics in public procurement. On the other hand, greener procurement can

lead to efficiency improvements in management and budgeting systems, resulting in improved allocation of public finances. Thus, there are synergies between the environmental performance of public authorities and good public management generally.

In order to be able to improve GPP policies, sound assessment methods are necessary. This starts with the collection of data and in-built mechanisms in order to improve assessments within agencies. Future measures could include the development of objective indicators of the environmental characteristics of public procurement.

WORKSHOP PRESENTATIONS

HAJEK, MIROSLAV AND DAGMAR SUCHAROVOVA (Department of Economic Policy, Ministry of the Environment, Czech Republic) "Progress and Encouraging Greener Public Purchasing in the Czech Republic", 2001.

KLAUSBRUCKNER, BRUNO (Environmental Manager, Vienna Hospitals Association, Austria) Project "Eco Purchase Vienna": Main Objectives and Important Projects", 2001

NISSINEN, ARI (Researcher, Finnish Environment Institute, Helsinki, Finland) "Greener Public Purchasing in Finland", 2001.

OPPENAUER, HEINRICH (Engineer, Department of Environmental Protection (Waste Management), Vienna City Administration, Austria) "Input-Output Analysis of Material Flows for Priority GPP Initiatives", 2001.

PLAS, GERALDINE (Scientific Officer, Eco Procurement Programme, International Council for Local Environmental Initiatives) "Experience of Local Governments in OECD Countries with Different Framework Conditions", 2001.

VALLINA, CYNTHIA (Policy Analyst, Office of Management and Budget, Executive Office of the President, United States) "Innovative Finance Tools to Enhance Green Procurement", 2001.

OECD PUBLICATIONS, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(97 2003 08 1 P) ISBN 92-64-10155-1 – No. 53201 2003