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**REPORT OF THE WORKSHOP ON ENVIRONMENTAL MANAGEMENT
SYSTEMS FOR GOVERNMENT AGENCIES**

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FOREWORD

In February 1996, OECD Ministers agreed a Council Recommendation on *Improving the Environmental Performance of Government*.¹ This recommendation, along with its sister Resolution on *Improving the Environmental Performance of the OECD*, is intended to spur Member country governments to reduce the environmental impacts of their own operations and decision-making processes. In November 1997, the need for such action was reinforced in the OECD High Level Advisory Group report *Guiding the Transition to Sustainable Development: A Critical Role for the OECD*.²

To support Member country initiatives to “green” their activities and implement the 1996 Council Recommendation, the OECD is leading a number of activities on several strategic issues, including green purchasing and the design and implementation of environmental management systems (EMS) in government agencies. Although several Member countries are interested in the implications of EMS for government operations, only a small sub-set have begun to explore the practical issues of applying an EMAS- or ISO 14001- based management system to their housekeeping or decision-making practices.³ For this reason, the OECD, in collaboration with the government of Sweden, held a Workshop (14-15 January 1998, Stockholm) to facilitate in-depth discussion of the benefits of establishing an EMS in public agencies and the steps involved in designing and implementing an EMS at central/federal and local government levels. Because EMS is a practical tool, the Workshop had practical objectives and outcomes, namely to:

- identify the “state-of-the-art” in EMS in OECD governments;
- highlight innovative and “good practice” strategies for designing EMS;
- explore barriers to developing and implementing an EMS into government management systems and the strategies being employed to overcome them; and
- agree policy recommendations to promote further progress in this area.

1. Recommendation II (iv) asked Member countries to “apply sound management principles, and in particular EMS approaches, at each stage of the development and operation of government-owned or operated facilities”.

2. Recommendation 3A of this report states that “As a key strategic direction to its work on environmental issues, the OECD should begin placing as much emphasis on resource efficiency as it has traditionally put on labour efficiency”. Recommendation 3B adds that “The OECD should work with governments to improve and develop systems of environmental governance to enable more effective co-ordination of environmental, economic and sectoral policies necessary for the transition to sustainable development”.

3. The ISO 14001 standard of the International Organization for Standardization (ISO), and the EU Council Regulation concerning the *Voluntary Participation by Companies in the Industrial Sector in a Community Eco-Management and Audit Scheme (EMAS)*, were devised to promote EMS in firms (though EMAS is available for local authorities in the UK). Their purpose is to provide company or agency management with a framework for implementing environmental objectives and for securing continuous improvement in operational impacts on the environment. Core elements common to both systems include guidelines on the components of an EMS, self-assessment procedures and third-party verification. EMAS differs from ISO 14001 in requiring participating companies to produce a public statement.

The Workshop dealt with these objectives by exploring examples of EMS under development by the Swedish and Canadian governments; private sector experience in the USA and UK; and practical issues associated with EMS implementation by a regional government agency in Germany. Discussions also drew upon informal papers submitted by participants describing EMS implementation in their countries. Workshop discussions were set in the context of broader, public sector management concerns and priorities being addressed in OECD governments today. Working groups explored three themes in more depth:

- stimulating and embedding EMS in broader government management systems;
- institutional barriers to the implementation of EMS; and
- the application of EMS in regional and local government.

Workshop proceedings were chaired by Mr. Mats Engstrom, Director, International Division, Ministry of the Environment, Sweden. This report of the main outcomes of the Stockholm Workshop is based on the Workshop report written by Helmut Lusser and Derek Taylor, consultants, of Global to Local Limited. The informal papers are summarised in Annex I, and can also be consulted on the OECD Green Government Website located at: <http://www.oecd.org/env>. The list of Workshop participants appears in Annex II. This report is published on the responsibility of the Secretary-General of the OECD.

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CENTRAL MESSAGES FROM THE WORKSHOP

The OECD Workshop on Environmental Management Systems for Government Agencies was the third in a series of meetings organised by the OECD Programme on Sustainable Consumption and Production to support Member country government initiatives to “green” their day-to-day operations and decision-making processes. The OECD Council Recommendation *on Improving the Environmental Performance of Government*, agreed in February 1996, sets out a broad range of areas where Governments could take action to reduce their environmental impacts, including the establishment of effective management and monitoring systems.

The Stockholm Workshop, hosted by the Government of Sweden, brought together forty-two government officials from 13 countries, the European Commission, and NATO/CCMS to discuss the key elements of environmental management systems (EMS) for government agencies and strategies to move them forward. There is a wide diversity in the level of experience with EMS among Member countries. The Workshop provided a forum for discussion and information exchange to support both those countries which have already begun to design and implement an EMS, and those countries interested in how to get started.

The State-of-the-Art in EMS

The motivations for establishing EMS in government agencies are strong. Although the size of central governments varies in OECD countries, most have large building and vehicle stocks, manage significant land surfaces, and are large consumers of goods and services. EMS elevate environmental impacts into routine management concerns. Better management is good for the environment, but also means good business. Good business increasingly is part of good government. Actions to improve the environmental performance of the public sector

also builds the credibility of the government as an actor, and partner, in multistakeholder strategies for sustainable development. This has been the case for private sector companies which have demonstrated their commitment to environmental stewardship.

A number of OECD countries have made significant progress in promoting the implementation of EMS in government agencies. Examples from Sweden, Canada, Germany, the US, the UK and others point to the fact that there is no one best approach, although there are many common elements, to efforts to integrate environmental considerations into governments’ day-to-day operations, and decision-making, including policy-making functions. Opinions differed over the value of voluntary over mandatory approaches to developing EMS, and the appropriate scope for an EMS (i.e. covering only direct, or also, indirect effects). At the regional/local government level, the conditions surrounding the development of EMS vary significantly between and within countries, depending in particular on the source of financial support (central government or the local population) and the regulatory mandates shouldered by local authorities. In several OECD countries most progress on EMS for government agencies has been made at the local level. Central governments appear to be moving more slowly.

Innovative and “Good Practice” Strategies

There is a growing number of “good practice” examples emerging from the initiatives already in place in several countries. These include strategies aimed at generating a high-level of participation by government workers in EMS schemes; practical suggestions for overcoming barriers to the implementation of EMS; “change management”; networking and information transfer; and initiatives to

demonstrate the benefits of EMS to build confidence and enthusiasm. Informal networking between OECD Member countries is an effective way of sharing innovative practices.

Barriers and Strategies to Overcome Them

Getting an EMS up and running demands investments of time, money and people. Yet, while there can be some significant barriers to modifying operational frameworks (e.g. for purchasing), participants felt that the majority of obstacles were “soft” barriers. These include an absence of general management systems to serve as a basis of change; low accountability; an absence of champions; a culture of risk aversion; and less direct public pressure for change.

Participants proposed a number of strategies to overcome these barriers and to ensure that EMS are embedded as part of regular management concerns. These include: establishing top management commitment; running pilot projects to generate experience and a track record; providing more flexible budgeting and financing mechanisms to allow longer-term investment and planning; and training and evaluation techniques to build understanding and expertise of staff at all levels. Strengthening the transparency of government’s environmental performance is also important. Public reporting, information exchange, and greater involvement of stakeholders (including politicians) in the “greening” process are good mechanisms to make government actions more visible. Participants stressed that EMS need to be developed with an eye to integrating them with existing public management systems. Participation by a senior official from the OECD’s Public Management Service helped make this link.

At the regional and local government levels many of the motivations for, and constraints to, developing an EMS are common to those of central government. On the whole,

however, local governments in many OECD countries have moved faster on this issue, the result of their close, day-to-day contacts with their constituencies, public pressure for efficient government, and the need to demonstrate “best value” to key stakeholders. EMS also provide local governments with a “common language” that makes interaction with central governments and each other easier, and can help local authorities make a contribution to the achievement of local, national, and international environmental objectives (e.g. national air quality standards; contributions to national targets for CO₂ reductions). Although the relationships between central and local governments vary significantly among OECD countries, participants highlighted a number of actions central governments can take to promote the implementation of EMS in local governments.

Policy Recommendations to Promote Progress

Workshop discussions led to a number of conclusions and policy recommendations for OECD Governments. These included establishing commitment to EMS as a long-term process; building on existing management approaches; avoiding re-inventing the wheel; moving away from systems development towards performance improvement; and giving emphasis to building in-house competence and credibility with stakeholders.

Documenting Progress

This Report describes the state-of-the-art of EMS development in OECD countries, including “good practice” strategies for the development and implementation of environmental management systems. In addition, material drawn from the Workshop will contribute to a chapter in the 1999 report to the OECD Council on *Progress On Improving The Environmental Performance Of Government* as requested in the OECD Council Recommendation.

sorting and recycling strategy, and to benefit from the wealth of experience represented at the meeting. Since the Workshop, the OECD has benefited from the assistance of an EMS expert from a Member country to identify a series of possible actions to reduce the environmental impacts of its activities.

OECD Website on Greening the OECD

The OECD now has a Website on Member country initiatives to improve the environmental performance of their governments. This site hosts both OECD reports on Greening of Government and Greener Public Purchasing and serves as a bridge to the Web pages of OECD Member countries on related topics. Links have been established or planned with Canada, the US, the UK, and the EC as of publication date. Member countries are encouraged to develop links with this site as they develop their own Web pages.

EMS and Strategic Management

As a further means to support OECD Member country progress on EMS, and in view of the need to ensure that EMS is embedded in wider public sector management developments, the OECD Secretariat is exploring how work on greening government and EMS in the public sector (Environment Directorate) and work on benchmarking progress in public management (Public Management Service) could reinforce each other.

Greening the OECD

The discussion in Stockholm had special relevance for the OECD as an institution, which is itself in the initial phases of "greening" its own operations. At the same time the OECD Council agreed the Council Recommendation, it also agreed a Council Resolution on *Improving the Environmental Performance of the OECD*. Participation by the Head of OECD's Operations Service gave the OECD an opportunity to informally update Member countries on its strategy in this area, for instance a new waste

1. INTRODUCTION

The Potential for EMS in Government Agencies

An EMS is a rigorous and systematic process for identifying, and improving, the environmental performance of an organisation on a continuous basis. To meet this goal, an EMS normally encompasses:

- a review of the significant environmental effects over which the organisation has control and influence,
- the implementation of a policy and programme, including targets to deal with significant effects,
- the establishment of a management system to internalise controls; and
- periodic audits of these stages.

The environmental effects of government actions are considerable, both through direct impacts of day-to-day operations (e.g. fuel and energy use, consumption of water, materials and other resources, waste production, and procurement), and the indirect influences on the environment arising from government decision-making and policy processes. OECD countries account for a fifth of the world's population, a quarter of its land surface, 60% of its energy use and a half of all CO₂ emissions.⁴ The successful implementation of EMS by OECD governments at all levels would make a major contribution towards meeting global Agenda 21 aspirations and commitments, in particular those in Chapter 4 of Agenda 21, which notes the significant potential of the public sector for achieving national and international environmental goals.

Recognising this potential, OECD governments have agreed on the importance of improving their environmental performance on a number of occasions, beginning at the G-7 Meeting of Environment Ministers in Hamilton, Canada, in April 1995.⁵ The process of "greening" government

An EMS helps an organisation to continually improve its environmental performance.

The size of central government varies in OECD countries, but most have large building and vehicle stocks, manage significant land surfaces, and are large consumers of goods and services.

4. Comparisons between OECD nations and the global position are extrapolated from tables 16.1, 17.1, 21.2 and 23.1 of *World Resources 1994-1995 A Guide to the Global Environment*, Oxford University Press, 1994 and from tables on Environment, Transport and Energy in *OECD in Figures-1997 Edition-Statistics in OECD Member Countries*, OECD, Paris, 1997.

5. The Hamilton meeting issued the following Declaration: "National governments in G-7 countries should set an example in their operations for the private sector and for other governments. Examples of how our governments are working to improve their environmental performance include: steps to conserve energy and materials; reduce waste in the construction and renovation of government buildings and facilities; measures to prevent pollution and conserve energy,

takes place within a broader framework of changing consumption and production patterns, but it focuses upon the contribution which governments themselves can make by integrating environmental considerations into their day-to-day operations and decision-making.

Workshop Perspectives on the Potential

A key message from the Stockholm discussions was the need for governments to realise the potential for action in this area sooner, rather than later. It was argued that governments no longer could choose whether to green their performance, but rather how and when to do so. A graphic example from Anna Lindh, the Swedish Minister of the Environment, illustrated the point. Following the contamination of a waterway as a result of a development project, the public asked “Where were the gatekeepers?”. Who had been responsible for ensuring there would be no environmental damage and why had they failed to exercise their responsibility? Having the appropriate legislation in place was not enough, the Minister observed: an EMS would have reduced the risk of pollution by installing, educating and empowering ‘gatekeepers’ to manage the environmental dimension of the project. Introducing an EMS helps an agency to prevent environmental damage, rather than have to pay the costs of repairing it.

Increasingly, the choice facing governments is not whether to implement an EMS, but rather how to get started.

The example highlights another key message. The public criticised the failure to prevent the pollution. In general, citizens are now much more aware and concerned about the environment. Increasingly, they expect their governments at all levels to set an example by demonstrating leadership on environmental protection. It is not unreasonable for them to expect that the money they pay in taxes is used in the most environmentally sound way. Nor is it any longer sufficient for governments to pass laws requiring others to exercise environmental responsibility, or to issue recommendations for third parties to improve their performance. Governments themselves must act in an exemplary and credible manner; and improving their own environmental performance is the best way to enhance this credibility.

Credibility is also about delivering improvements in environmental performance; promising action is not enough. In Canada, the Commissioner of Environment and Sustainable Development identified a significant ‘implementation gap’ between the commitments made by governments and the actions taken to meet them. Also in Canada, experience reveals that citizens are looking for a comprehensive approach to environmental improvement, suggesting that if a government is going to succeed genuinely in greening its operations, then it must extend EMS to include the environmental impacts of its policies and budgetary processes.

water and materials in day to day operations, including reduction, re-use and recycling, and; policies leading to the purchase of environmentally friendly products and services for use within government”.

Participants stressed that improving environmental performance means “doing things right - doing the right things” and that “greening government is good government”. Government must put its own house in order if it is to persuade society as a whole to change currently unsustainable patterns of consumption.

In this context, it is significant that to date it is the private sector which has gained most experience in implementing EMS, while most OECD governments are still considering the possibility.⁶ However, where EMS has been introduced by public sector agencies like health services, universities and local authorities, it tends to be more refined, covering not just direct environmental effects, but also the indirect effects of decision-making processes. Private sector and local government progress places greater pressure on central government to demonstrate its capacity to serve as a steward of the environment.

A key lesson from the business community is that a proactive stance on the environment makes sound business sense. As governments come under growing budget pressures and demands for results-oriented planning, they are moving increasingly towards the tight discipline of business management techniques. In this respect, because it is first and foremost a management tool, an EMS can both improve management performance and produce substantial resource savings. A specific example from Canada emphasises the point. A cost/benefit analysis of federal government operations revealed potential real savings amounting to CAN\$ 114 million a year by 2005 from four domains -- purchasing, the vehicle fleet, waste management, and water and energy use in buildings.⁷

Workshop participants also noted that the development of an EMS is good for the people who staff the organisation and for its stakeholders. The benefits of in-house learning have been demonstrated in the EMS pilot project in Swedish government agencies; by starting with a simple strategy of “not digging too deep” the Swedish approach has made it easier for those involved to begin to adjust to the new ways of thinking and acting required by an EMS. Similarly, the Hesse State Institute of the Environment in Germany has found that involving staff from all levels has been a key component of its successful development. On a wider basis, an EMS provides opportunities for networking with peer organisations at home and abroad on good practice.

Participants agreed that EMS techniques make an important contribution to the implementation of Agenda 21 and Local Agenda 21. Experience in Canada has shown that this link is part of a journey, where EMS is a precursor to an integrated sustainability strategy (Box A).

6. By January 1998, 2,415 largely private sector organizations in OECD countries have been certified to ISO 14001, and a further 1,362 in the EU are registered for EMAS (from information made available at the Workshop by Reinhard Peglau, German Federal Environment Agency).

7. *Costs and Benefits of Greening Federal Government Operations*, Price Waterhouse, May 1996, p.ii.

Why EMS for Government Agencies?

- **Public pressure for good governance**
- **Building credibility with stakeholders**
- **Setting an example**
- **Improving management performance and resource savings**
- **Responding to environmental imperatives**
- **Building in-house expertise**

Section 2 of this report outlines the current status of EMS practice in OECD member governments, issues still unresolved, and the barriers to greater progress. Sections 3 and 4 explore country experience with practical ways to stimulate EMS implementation at both central and local/regional levels. Section 5 contains the Workshop conclusions and recommendations.

BOX A: EMS as a Step on the Journey to Sustainability⁸		
STEP ON THE JOURNEY	CHARACTERISTICS	IMPACT
1. COPING	Damage control; Avoids costs and responsibilities; Environmental capital diminishes; Waste and pollution increases	Slightly positive
2. COMPLIANCE	Government regulation; End of pipe; No benefits for the organisation; Prosecution for failure to comply; Externally imposed costs; Modest impact on environmental protection and performance	Positive
3. COMPREHENSIVE EMS	Continuous improvement in environmental protection and performance; Front of pipe; Eco-efficiency driven; Improves image and public acceptability; Cost savings and business opportunities	Progressive
4. SUSTAINABLE DEVELOPMENT	Integrates environment with social and economic objectives; Corporate strategies; Involves stakeholders and community; Expands decision-making; Life cycle approach	Towards Sustainability

8. Adapted from plenary paper, Brian Emmett, Canadian Commissioner for Sustainable Development.

2. EMS STATE-OF-THE-ART IN OECD GOVERNMENTS

A Range of EMS Practice in OECD Government Agencies

Over the last two years, some OECD countries have made considerable progress in developing and implementing EMS. These initiatives have now reached important mile-stones. Agencies in several other countries, though less advanced, are also beginning to make headway.

A wide range of central government agencies, and regional and local government bodies, are now involved in implementing a variety of EMS approaches. At central and federal levels, for example, progress is underway in ministries (Japan, Switzerland, UK), government departments (Canada) and in agencies (Sweden, Norway, USA). Regional government (Germany/ Bavaria) and local authorities are more extensively engaged (Sweden, Germany, UK), while activity is revealed in such diverse sectors as the health service (UK), higher educational establishments (Sweden, Germany), and the police, prison and military authorities (Sweden). Box B illustrates the range of agencies involved in Sweden. It is also worth noting the large-scale experience which is now being gained at local government level, where sophisticated models such as the Eco-Management and Audit Scheme (EMAS) for UK Local Government are being implemented extensively.⁹

These initiatives illuminate a number of important debates about the implementation of EMS for government agencies. In particular, experts remain divided concerning the appropriate *scope* of government EMS (How far does one need to take the implementation of EMS for it to become a useful and credible tool?); and whether its introduction should be voluntary, or enforced (Is a voluntary approach sufficient to guarantee that EMS will be implemented, or is an element of compulsion required before it is accepted as a necessary task?).

9. In accordance with the central guidance contained in *A Guide to the Eco-Management and Audit Scheme for UK Local Government - A Manual for Environmental Management in Local Government*. HMSO, London, 1993.

BOX B: Some of the Initial Swedish Agencies Piloting EMS

- ✓ National Road Administration
 - ✓ National Radiation Protection Institute
 - ✓ Swedish International Development Authority
 - ✓ National Rescue Services Board
 - ✓ Policy Authority
 - ✓ National Board for Industrial and Technical development
 - ✓ National Environment Protection Agency
 - ✓ Two County Administrative Boards
 - ✓ National Food Administration
 - ✓ Two Universities
- ... and 13 more agencies

Comprehensive or Direct Effects Only?

There has been much debate within Member countries on the appropriate scope of EMS. The OECD Council Recommendation on *Improving the Environmental Performance of Government* and the Council Resolution on *Improving the Environmental Performance of the OECD* clearly recommend actions which relate to improvements in government operations and facilities (green house-keeping, eco-efficiency) and in government decision-making processes. They exclude the widest circle of government influence, which is the integration of environmental considerations into sectoral policies. Much of the experience being gained so far follows this line. The Japanese approach, for example, focuses on direct effects, targets them and seeks to achieve results within a relatively short period of time (Box C). This is a credible first-step approach to environmental management. The French General Action Plan is also addressed to direct, operational impacts. It concentrates on the impacts arising from the construction of new buildings, the maintenance and renovation of old buildings, the management of government land, energy and water conservation, the procurement of consumables, equipment and moveable assets, waste collection and recycling, and the greening of vehicle fleets.

Tackling the direct effects of government day-to-day operations is a good first step to environmental management, but the most extensive EMS applications cover the indirect effects of government services and policies.

A few countries have designed more extensive EMS to cover both the direct effects of internal and external activities and the indirect effects of external activities arising from policy related decisions (such as regulations, permits and funding systems). The Swedish approach to EMS encompasses three areas: the direct effects of internal activities, (the green office), the direct effects of external activities (road construction, defence etc.) and the indirect effects of external activities influenced by decisions (regulations, permits, funding systems). The Canadian system of sustainable development strategies specifically encompasses policies,

BOX C: Targets for Japanese Government Agencies and Ministries by 2000

- ❖ Research the feasibility of increasing the ratio of low emission vehicles owned and used by government by 10%.
- ❖ Maintain the volume of paper used at 1995 levels.
- ❖ Reduce:
 - Total content of virgin pulp contained in papers purchased and used to approximately 80%, or less, of the current level.
 - Construction waste generated by government contractors by 10% of projected generation volume.
 - Electricity consumption per unit of office space to less than 90% of the current level.
 - Water consumption per unit of office space to less than approximately 90% of the current level.
 - Fuel consumed by government vehicles to less than approximately 90% of the current level.
 - Energy use in government buildings by approximately 10% of the current level.
 - Waste generated by each office to less than approximately 75% of the current volume.
 - Wastes incinerated by 70% of the current volume.
 - Emissions of air and water pollutants as much as possible.

programmes and operations, and departments are working to merge instruments such as Environmental Impact Assessment (EIA) with EMS.

Efforts are currently underway in Canada to develop common approaches to EIA to assess departmental policies, prior to their approval by Cabinet.

Box D shows the range of positions OECD governments have taken on the scope of EMS. Clearly, dealing with indirect effects is a challenge, but given that the bulk of a government's environmental impact stems from its policies and programmes, a comprehensive EMS should lead to better environmental performance overall. It is notable that the guidance published for UK local government EMAS makes managing indirect environmental effects an essential ingredient of the management system, while the presentation from the Hesse State Institute of the Environment also suggested there were plans to extend their EMAS pilot to indirect effects.

BOX D: Scope of EMS in OECD Governments

COUNTRY OR ORGANISATION	EMS TO INCLUDE		
	Policy/Strategy	Administrative and decision-making processes	Detailed procedures, operations and facilities
CANADA	X*	X	X
GERMANY	Exploring	X	X
FRANCE		X	X
JAPAN		X	X
MEXICO		X	X
NORWAY		X	X
OECD Recommendation		X	X
SWEDEN	X	X	X
SWITZERLAND		X	X
UNITED KINGDOM	At Local Govt. Level	X	X
UNITED STATES		X	X

Note: * As part of the preparation of Sustainable Development Strategies.

Compulsory or Voluntary?

Most progress has been made in countries where government departments and agencies have been compelled to implement an EMS (Sweden and Canada). Compulsion overcomes many of the barriers to introducing EMS, including any lack of commitment and awareness. There are, however, excellent schemes that are voluntary, although it may be that more effort is needed to induce agencies to adopt them. The experience of the US EPA shows that an impressive amount can be achieved in this way, especially if clear guidance on how to approach the task is made available. The US approach is a voluntary scheme, with the goal of moving agencies “beyond compliance” and short-term focus on regulatory requirements, to a broader view of the interrelated nature of their environmental activities. The US EPA encourages Federal Agencies to place a higher emphasis on EMS as part of their efforts to improve their environmental performance. The approach is centralised, in that the general mandate comes from the US government in the form of executive orders and laws, but each department and agency has flexibility as to how it meets its “greening” obligations. To support Agencies, a Code of Environmental Management Principles for Federal Agencies was developed in 1996 (CEMP - see Box E). Although there is no legal requirement that agencies adopt the CEMP, sixteen have done so to date. Nevertheless, the US informal paper observes that a more straight-forward way to accelerate progress would be to make implementation of an EMS a legally-binding requirement.

Compulsory approaches to EMS implementation can be more effective in ensuring rapid compliance.

BOX E: US Code of Environmental Management Principles for Federal Agencies

Management Commitment: the agency makes a written management commitment to improve environmental performance by establishing policies which emphasise pollution prevention and the need to ensure compliance with environmental requirements.

Compliance Assurance and Pollution Prevention: the agency implements proactive programmes that aggressively identify and address potential compliance problem areas and utilise pollution prevention approaches to correct deficiencies and improve environmental performance.

Enabling Systems: the agency develops and implements the necessary measures to enable personnel to perform their functions consistent with regulatory requirements, agency environmental policies, and its overall mission.

Performance and Accountability: The agency develops measures to address employee environmental performance, and ensure full accountability of environmental functions.

Measurement and Improvement: the agency develops and implements a program to assess progress toward meeting its environmental goals and uses the results to improve environmental performance.

Barriers to the Implementation of EMS

The working group on institutional barriers explored the wide range of barriers, perceived or real, which prevent or delay the implementation of EMS. For most of these, the Working Group and plenary discussions revealed relatively straightforward and simple solutions. This suggests that most of the barriers in question are attitudinal and can be overcome where there is commitment and a supportive structure. Three types of barriers were identified:

- institutional;
- budgetary and financial; and
- management, cultural and attitudinal.

Institutional Barriers

The working group highlighted a few obstacles in this category. International procurement rules were felt to prevent green procurement and many international product standards did not yet reflect good environmental practice. In the EU, the fact that EMAS was not yet accessible to public sector bodies was also seen as a barrier, although any organisation wishing to have a formally recognised EMS can seek certification to ISO 14001. Other barriers included the impacts of down-

Down-sizing and decentralisation can weaken the institutional framework for EMS implementation.

sizing, which can lead to a haemorrhaging of corporate memory, and is of particular importance when it affects in-house knowledge of EMS-related practices. Decentralisation raises similar issues. Procurement decisions in Environment Canada, for example, were previously co-ordinated by a small group of professional purchasing officers. Since decentralisation, over a quarter of all employees are authorised to buy up to CAN\$ 5,000 of goods and services, accounting for over 70% of the agency's purchasing transactions. The sheer number of decision-makers now makes it very difficult to identify and directly influence procurement decisions.

Budgetary Barriers

Budgetary constraints can impede the funding of the start-up costs of an EMS. Invariably, there is a time lag between the costs incurred for introducing an EMS and the pay-back in benefits which result. Annual budget cycles, and the difficulties of 'borrowing' against future gains, compound these funding problems. Likewise, the inflexibility of budget lines and categories can make it difficult to direct funds to where they are most needed. A further barrier is the common practise of procuring goods and services on the basis of lowest price, irrespective of environmental considerations. Some countries are considering how to include life-cycle costs in tender evaluation and specifications to broaden selection criteria to include 'best environmental value'.

Budgetary barriers

- **Annual cycles**
- **Inflexible budget lines**
- **Absence of life-cycle costing techniques**
- **Bias towards lowest priced goods and services**

Management and Cultural Barriers

Essentially, EMS are like other management tools which aim to enhance the performance of an organisation: they require a culture receptive to systematic improvement, competitiveness and accountability. Where there is no existing management system, or systems are poorly codified, this erects a considerable hurdle, as the organisation needs to learn a new management skill. Staff may be uneasy with the language of EMS and reluctant to learn more 'jargon' and concepts. Improving environmental performance in large organisations also demands co-operation between its divisions and sectors, some of which will have to carry out actions from which others will benefit.

EMS are like other management tools: they require a culture receptive to systematic improvement, competitiveness, and accountability. For some government agencies this means adopting a new attitude and /or learning new skills.

A second type of cultural barrier can stem from the transparency and greater openness an EMS brings to an organisation. One principle common to ISO14001 and EMAS is that of considering and involving stakeholders, which in EMAS extends to public reporting. Opening the performance of an agency undergoing EMS to public scrutiny is a powerful driver for change. Where an organisation is used to being directly accountable to its customers, shareholders or neighbours, this poses no major problem. For those public bodies which have had little exposure to open accountability, this EMS requirement can become a major psychological barrier. Government agencies are not subjected to the kind of external pressures that drive change in the private sector, or even in

local government. Their relative remoteness from citizens (customers), the absence of competition, the lack of direct accountability (except at election time), perhaps amplified by a general absence of performance management systems, can all conspire to make government agencies less willing to expose themselves to the rigours of a formal management system. Staff may have underlying worries about what such a system might reveal and of having to deal with unpleasant surprises. Public sector bodies are also usually more averse to taking risks than their private sector colleagues.

Overcoming the barriers

By far the largest number of barriers are encountered are those stemming from the management culture in an organisation. Whereas some of the institutional and budgetary barriers are substantial, and can reach outside the organisation, management and cultural obstacles are mainly internal. Participants also observed that although each barrier may be fairly easy to overcome on its own, several barriers acting together can amount to a formidable obstacle to the implementation of an EMS. The following section examines some of the general lessons and good practice issuing from current country practice to overcome the barriers to the implementation and anchoring EMS as part of routine management considerations.

3. INNOVATIVE AND GOOD PRACTICE

This section highlights some key, general lessons emerging from country experience with EMS to date, and identifies innovative and good practice not only for achieving results quickly but also for managing the changes brought about by an EMS over the long-term. The suggestions presented here are drawn both from plenary discussions and the observations stemming from the three Working Groups, in particular the working group on stimulating the development of EMS in government agencies.

Getting Started

Top Management Giving the Lead

Much time can be spent encouraging enthusiasm for a concept as challenging as EMS and the obstacles to starting can seem daunting. However, experience shows that these problems diminish once there is an imperative to carry out the work. A clear indication of top management commitment establishes an EMS as an organisational objective and a serious part of mainstream management activity.

In Canada, Sweden and Japan the central governments have required action by their agencies. This approach appears to be yielding results: in Canada, in December 1997, 28 government departments and agencies tabled their individual sustainable development strategies in Parliament - more than were required to do so by law, and all on time. All will require an EMS to drive their strategies, which will be reviewed independently by the Commissioner of the Environment and Sustainable Development, who reports directly to Parliament. In Sweden, in April 1998, 25 government agencies will report on their EMS pilots, which they were instructed to undertake at the end of 1996. The initial results are sufficiently encouraging to extend EMS to a further 40 agencies and to target an EMS for all 300 government Agencies within four to five years. In Japan, the 1995 *Action Plan on Greening Government Operations* set targets for all government ministries and agencies to be met by the year 2000.

In all three cases, a proactive lead was provided by central government. In Canada, an amendment to the 1995 *Auditor General Act*

<p>The different models developing across the OECD have a common message. Where top management sets a decisive lead, action quickly follows.</p>

provided the vehicle; in Sweden there was a request by the Prime Minister to the agencies; and in Japan, the process stemmed from Cabinet adoption of the *1994 Basic Environmental Plan* and the *1995 Action Plan*. A similar approach is now being taken by Switzerland where, in June 1997, the Federal Council agreed a motion to introduce EMS into the federal administration. The firmest framework is that provided by the Canadian legislative requirement, followed by the Swedish prime ministerial request. It is notable that in Japan, although action beyond meeting targets relies on voluntary action, the argument has been made that progress would be faster if there were a legally binding requirement for introducing an EMS.

An EMS also stands a greater chance of success if its introduction is accompanied by incentives. Which incentives will be effective in any given situation will vary, but participants identified a number of the most critical, including providing central funding and start-up support; and recognising and rewarding success to spread motivation and generate internal commitment. This is particularly important with regard to providing the necessary resources for an EMS on a continuing basis. Participants also stressed the importance of budget and finance procedures that allow long-term investments or expenditures with high up-front costs, and which allow un-spent money to be carried over to the next financial year.

Pilot Projects and Borrowing Experience

There are advantages in piloting the introduction of an EMS, especially where the government is in the early stages of greening its operations. Pilots help build internal expertise and allow EMS to be adapted to local circumstances. In addition, while pilots allow decision-makers to assess the practicalities, costs, and benefits of such a system at an early stage, they can facilitate its spread across a range of agencies if the decision is subsequently made to apply an EMS more widely.

Participants also pointed to the growing number of practical information and support tools available to help agencies get started. This is an area where it pays to borrow from the experience of others, and not to re-invent the wheel. Waste minimisation programmes for government offices, for example, will be similar regardless of the type of agency, or country of operation.

The experience gained in German, Swedish and UK local authorities, and in particular the practical lessons emerging from the implementation of the customised EMAS for UK local government, can be readily transferred to central government situations. The latter model provides a clear approach not only on how to define significance and handle direct environmental effects, but also on how to deal with the indirect environmental effects of service delivery, policy-making and the budget process.

EMS is an area where it pays to borrow from the experience of others, and not to re-invent the wheel. Waste minimisation programmes for government offices, for example, will be similar regardless of the type of agency, or country of operation.

Participants were divided concerning the relevance for government agencies of the growing experience with EMS in the private sector. Some felt that little of that experience is transferable, because the management context in the public sector is so different. However, strong arguments were also made in favour not only of learning from the management challenges which EMS has posed in the private sector, but also of noting the beneficial changes which can result from its introduction. Experience from the banking sector highlighted the advantages inherent in a more systematic approach to the environment. These include:

- giving a company a more comprehensive understanding of its business than other conventional reviews;
- helping a company to anticipate and manage change and risk;
- channelling financial savings back into mainstream business activity;
- encouraging openness with customers and stakeholders.

Identifying Priorities, Targets, and the Time-Frame For Action

As a first step in any pilot, or fuller, introduction of an EMS, a preliminary scoping study helps establish the demarcations of the system. In the Swedish Defence Material Administration, for instance, a scoping study helped the agency to concentrate on the most significant, real and potential, environmental impacts of its activities. A scoping study will also clarify at the outset if greater emphasis should be given to policy, administrative or operational considerations. The results of such a review leads directly to setting realistic, but challenging, targets. Minimising complexity by designing simple, practical and easy to understand systems will help staff gradually build their own understanding and expertise and simplify implementation.

OECD countries have set different time-frames for action on EMS. Some initiatives suggest that it can be effective to focus narrowly on an initial subset of actions and to provide a tight time-frame for progress. Swedish agencies were given 15 months to complete their EMS pilots -- a seemingly short period, but one which turned out to be more than adequate. It concentrated minds on the most significant issues, and therefore helped deliver value for money. Generally, however, a short time-scale is probably most effective when the impetus for EMS is 'top-down' and mandatory; voluntary EMS usually require a longer time to become embedded in agency practices. Nevertheless, there can be benefits for Agencies that get onboard early and work to a tight time-table, most notably by improving the organisation's environmental performance ahead of its peers, thus enabling it to enjoy the rewards of cost savings, and a better public image, sooner.

Local government experience is demonstrating good practice for defining "significant effects" and for dealing with the indirect environmental effects of service delivery.

Agencies should seek to minimise the complexity of an EMS by designing a practical and easy to understand system for managers without an EMS background.

A short time-frame for putting an EMS in place is probably most effective when the impetus is 'top-down' and mandatory; voluntary EMS usually require a longer time to become embedded in agency practices..

Providing Technical Support and Training

Participants identified technical guidance and training as two areas that need to be developed further in order to stimulate the up-take of EMS. Though the Workshop revealed very useful guidance documents, in general there was felt to be a need for additional targeted advice, tailored specifically for government agency use. Differences in the level of experience, and administrative cultures, in Member countries suggest that there might be a role for different types of guidance, although a common set of principles would be instrumental. Scope for transferring private sector and local government guidelines into forms that are relevant to central agencies should also be explored further. Improved mechanisms for sharing information on best practice and for technology transfer were also considered to be important. Developing software packages, like the programme in use by the UK health service, was cited as a specific example (see Box F).

Training programmes must be tailored to the different needs of each staff level within the organisation.

Training programmes must be tailored to meet the different needs of all levels within an agency. Such programmes might cover:

- general awareness raising about the environment and the role of an EMS for all personnel;
- targeted training about the implications of EMS for management practices for all line managers;
- intensive training in the application of EMS processes for managers charged with overseeing EMS;
- specialist training for selected staff in specific measures to improve environmental performance.

BOX F: GREENCODE - A UK Software Package for EMS

GREENCODE is a computerised environmental management system developed by the UK National Health Service, a £20 billion/year business with an enormous potential impact on the environment. GREENCODE was conceived to deal with the complexity and interactive nature of environmental management systems and, by providing a common approach, to allow various health service Trusts to use their limited resources to best effect in minimising their adverse impacts on the environment. GREENCODE allows an organisation to put the necessary systems, procedures and records in place, and if desired, seek ISO14001 certification. The legal database is tagged with its territorial applicability, so the GREENCODE system could be adapted for use by other countries. The benefits of computerisation are that:

- it enables repetitive tasks to be automated and research work to be minimised by the incorporation of a comprehensive database of legislation and guidance;
- users can identify their environmental impacts from a pre-defined list and link these to the legislation which applies to them;
- management system audits can be compiled on computer and analysed and presented in a range of ways; and
- audit results can be used for prioritising work, targets and monitoring.

Participants highlighted the importance of presenting the subject of EMS to the various internal groups in language that they will understand. For example, finance units will pick up the key messages better if approached on the basis of the financial benefits of EMS; property-based divisions will be more receptive to the management and long-term cost-benefits for the property portfolio; environmental regulators will relate more easily to the basic greening objectives of the process; and so on. Training programmes must also be incorporated as a continuing component of the EMS implementation process, so that they reflect changing skills and challenges, new environmental knowledge and perceptions, and the induction of new staff. Integrating key EMS messages into elements of corporate training strategy is also an effective step.

Workshop participants felt that there could be an advantage in engaging external technical support to help agencies through the pilot phases of EMS implementation. This proved to be helpful in Sweden. Consultants can help reduce development costs by speeding up the application of tried and tested approaches which would take longer to introduce without their guidance. Where there are difficulties due to the local administrative culture, help from consultant facilitators have been a solution. The German example presented at the Workshop showed how external consultants had been able to use their neutrality and their knowledge to challenge opposing groupings within the agency, removing an obstacle to the implementation of EMS. However, all participants agreed that there is no substitute for the development and application of in-house experience.

Where the internal culture is too ingrained or slow to respond, external facilitators can help drive progress and overcome internal conflict.

Providing the Funding

The costs of introducing an EMS can seem daunting. For example, consultants appointed by the UK Ministry of Agriculture estimated the costs of setting up an EMS for the entire departmental estate at £397,400, with first year running costs of £491,600. Although such sums seem large, they represent less than 0.01% of the budget of the UK Ministry in question. While there was concern among some participants about the cost of introducing EMS, those countries with the broadest experience were encouraging. In the Swedish case-study, for example, agencies were not preoccupied by the financial implications of introducing an EMS, and although Canadian agencies complained about having limited financial and human resources to take on a new task, this did not impede progress. Agencies in both countries are expected to absorb any internal development costs, although help was given in the Swedish pilots through the provision of consultancy advice. The Canadian Commissioner for Environment and Sustainable Development observed that not providing additional resources forced agencies to look very hard at the way money is spent. In his words, "*Money is a misleading issue - what is important is to do things differently*".

EMS implementation costs must be set against the potential savings which can accrue from vigorous measures designed to improve environmental performance.

Implementation costs should be set against the potential savings which can accrue. A major advantage of an EMS is that it improves performance and saves money in the process. Evidence is beginning to emerge which proves this. In Canada, for instance, the House of Commons initiated the 'Greening the Hill' programme which has resulted in an almost 80% diversion of waste from landfill and generated a net saving of over CAN\$1 million in a 5-year period. As of November 1997, Natural Resources Canada experienced energy savings of CAN\$361,750 and 954,500 kg of avoided emissions as a result of its Federal Buildings Initiative to implement comprehensive energy efficiency projects. Public Works and Government Services Canada signed a Master Occupancy Agreement with Environment Canada to reduce the amount of work space, and ultimately the amount of materials and energy required, which will generate an initial savings of CAN\$300,000 a year.

In Germany, municipal governments with an active approach to environmental management have been able to achieve:

- A saving of approximately DM 5 per year for each deutschmark invested in energy savings measures - it is estimated that the potential exists in public buildings for saving between 25% and 60% of thermal energy and at least 10% of power consumption;
- Reductions of up to 45% in water and sewage charges by installing conservation measures; and
- Savings of up to 50% in waste disposal costs at waste-intensive facilities like hospitals.

A recently published analysis of the potential for making savings in significant areas of local government activity in the UK is also relevant in this respect (Box G).

To achieve genuine reductions, constructive, innovative thinking, and the use of best technology and practice are required. If the establishment and maintenance costs of an EMS are discounted as standard management development costs, additional costs are restricted to the investment needed to make inroads into further efficiencies, once early, easy gains in environmental performance have been made. Two models which facilitate the funding of better performance measures were mentioned at the Workshop:

BOX G: Doing the Right Things**UK Audit Commission****“It’s A Small World: Local Government’s Role as a Steward of the Environment”**

Waste Management	<ul style="list-style-type: none"> ✓ Promote home composting ✓ Limit the introduction of large wheeled bins ✓ Create more ‘bring and dispose’ sites - one per thousand people ✓ Organise the home collection of newspapers
Water Conservation	<ul style="list-style-type: none"> ✓ Reduce water in toilet cisterns ✓ Check for leaks by analysing monthly meter readings ✓ Check meter sizes ✓ Install and use pool covers
Energy Conservation	<ul style="list-style-type: none"> ✓ Check consumption in schools and other Council buildings against benchmarks ✓ Install lagging, insulation and thermostatic radiators where not in place ✓ Survey Council housing stock ✓ Prioritise investments according to pay-back period
Car Commuting	<ul style="list-style-type: none"> ✓ Limit car parking in new office buildings ✓ Use Transport Plans to promote alternatives to car use ✓ Raise long stay parking charges ✓ Do environmental assessments of planning policies and adopt statutory plans that minimise traffic volumes
Doing Things Right	<ul style="list-style-type: none"> ✓ Establish a corporate approach to Local Agenda 21, cutting across traditional service departments and Committee lines ✓ Establish a process to co-ordinate policy, programmes and undertake performance review
Environmental Co-ordinators	<ul style="list-style-type: none"> ✓ Provide senior support for Co-ordinators and afford them the necessary status and influence
Staff	<ul style="list-style-type: none"> ✓ Involve and motivate staff lower down the hierarchy on green issues
Monitoring	<ul style="list-style-type: none"> ✓ Monitor the impact of initiatives using EMAS
Partnerships	<ul style="list-style-type: none"> ✓ Establish effective partnerships with the business and the wider community

Source: Audit Commission “It’s A Small World. Local Government’s Role as a Steward of the Environment”, Audit Commission Publications, Abingdon, UK, 1997.

- In Germany, a “50/50%” scheme for schools guarantees that half the money derived from energy efficiency measures is retained by the school making the savings - participants can re-invest what they retain in further energy efficiencies;
- In Canada, government agencies can borrow from the private sector against future energy savings for energy improvement works on buildings.

Managing the Change

Taking Progressive Steps

Securing continuous improvement is a fundamental goal of environmental management. Inevitably, it requires the staff of an organisation to develop the right skills and attitudes. Implementing, adapting and spreading best environmental practice is a central mechanism by which government agencies can develop internal competency. It is important not to underestimate the small steps that can be taken to get the process started.

In principle, any EMS should be driven by the concept of *environmental significance*, and the importance of concentrating on an organisation’s biggest environmental impacts. Practice in UK local authorities illustrates the general rule that 20% of the activities undertaken can create some 80% of the total environmental impact, and this rule of thumb is likely to apply in many organisations.¹⁰ The entire range of impacts should be surveyed as an early priority. Controlling the larger impacts, irrespective of how difficult this might be, will maximise the overall improvement in performance. This is a principle which is built into systems like ISO 14001 and EMAS, and it is also a business management approach that should, perhaps, apply to all government operations.

On the other hand, there can be advantages in tackling just a few, easily defined impacts which offer the prospect of easy and visible gains, even if some of these are modest. This has the benefit of spreading the message quickly that an EMS produces results, which in turn can stimulate motivation, ownership and support. The Japanese targets and the French *Action Plan* exemplify this approach. Early successes can also attract the attention of the uncommitted, while the lessons learned from their achievement will inform further gains, and begin the process of raising environmental management skills. A further matter for consideration is how far continuous improvement is worth pursuing. Ambitious, realistic targets are essential, but there is a point beyond which the effort to squeeze out every last drop of improvement may not be worth the extra cost.

An EMS should be driven by the concept of *environmental significance*, but there are advantages in first tackling a few easily defined impacts with visible gains, to stimulate early motivation, ownership and support.

10. Information revealed in a survey of UK local authorities working on EMAS in *Corporate Approaches to Local Agenda 21 Through the Implementation of EMAS*, Local Government Management Board, London, 1998.

Identifying Champions

Steering an EMS through an organisation produces change, which will be gradual at first, then more fundamental as the system takes hold. This is an inevitable consequence of systems like ISO 14001 and EMAS which are based on continuous improvement, whereby today's target becomes tomorrow's base-line. To allow change to emerge and flourish, requires environmental 'champions', amongst both politicians and officials. In the early stages, it is imperative to have someone championing the cause at, or near, the top of a government agency in order to ensure that the EMS is nursed into life, and grows in good health. But the need for people with power and influence to sustain and develop the EMS continues thereafter. At the same time, the organisational success of any EMS depends on the emergence of local champions lower down the system, and in its component parts. These champions need to be identified, encouraged, and given the opportunity and means to exert influence over the green agenda.

An EMS requires champions both early on and as the system develops: politicians, officials, and lower-level staff supporters are needed to steer progress, raise awareness and secure the support and participation of colleagues.

The role of champions operating at different organisational levels is well illustrated by a recent analysis of EMS activity in UK local authorities.¹¹ Training and awareness-raising programmes can be particularly effective at drawing attention to people with potential. This is a central element of the French pilot scheme, launched in 1997 for decentralised services in eight departments, which establishes project leaders as a 'pole of competence' to inform, train and co-ordinate other administrators. Once in place, environmental champions supply a task force to steer progress, raise the awareness of others and persuade colleagues to play their part.

Integrating EMS with Existing Management Systems

It is important to build EMS into existing management frameworks and not to invent parallel systems. Ideally, EMS should be completely integrated into business planning, decision-making and reporting. Integrating EMS into existing business practices allows environmental matters to be incorporated in the agency's performance management system, down to individual performance targets and the inclusion of environmental clauses in management job descriptions. At a strategic level, this will result in clear linkages to departmental budgets and, as in Canada, improve the quality of reporting to Parliament. Routine internal reporting is vital to give staff feedback on progress and to make visible their role in the system.

11. *Corporate Approaches to Local Agenda 21 Through the Implementation of EMAS*, Local Government Management Board, London, 1998.

Participants noted that the present state of management system development means that total integration may not be practical for some time. None of the governments actively moving forward on EMS have taken this step as yet. However, partial integration of key EMS elements is possible in the interim. Using existing recording and monitoring systems to document the EMS process, for example, avoids duplication and inefficiency. A very early task, therefore, is to identify where the opportunities for integration lie. Experience suggests that quality control systems, corporate training initiatives, and health and safety programmes are likely candidates for such opportunities.

By adapting a few key internal management processes, the ground can be laid for a very effective EMS within an agency. Representatives of the EC DGXI, outlined that the integration of environmental considerations in Commission policy-making and management has already started and should be continued and reinforced on the basis of the positive review of the actions held so far. The measures for reinforcing this commitment are currently under consideration and would concern the following actions in particular:

- Conducting environmental appraisals of all proposals and policies;
- Introducing sustainable development statements into each sector;
- Greening the budget by appraising the environmental consequence of expenditure options;
- Requiring annual reporting of progress with environmental performance;
- Green housekeeping; and
- Training.

Networking and Information Exchange

The Workshop highlighted a number of other good practices for successfully managing the changes brought by the implementation of an EMS. Networking between specialist agencies at international level is yielding useful results, which would be difficult to obtain in other ways. Reference was made, for example, to the programme of information exchange and collaborative projects among defence agencies, under the aegis of NATO/CCMS. Participants noted that other specialist agencies, such as national prison authorities, would also benefit from working not only with sectoral agencies at home, but also by linking with sister organisations in other countries. There is huge scope for networking internationally within peer groups to share ideas and save development costs. There are also savings to be made from opportunities to take joint action on the programmes engendered by an EMS. For instance, new technologies could be introduced faster, and more cost effectively, under national and international joint procurement programmes, perhaps in

An early task is to identify areas where EMS elements can be integrated with existing management systems: quality control objectives, corporate training initiatives, and health and safety programmes are often good candidates.

partnership with major suppliers. Swedish examples of switching to more environmentally-friendly vehicle technology were cited at the Workshop, as was the ZEUS project, an EU-funded project for municipalities which demonstrates the potential for influencing the environmental technology market via the establishment of a joint procurement group.¹²

Measuring Effectiveness and Documenting Costs and Benefits

A major component of an EMS is a regular audit of the overall effectiveness of the system in terms of objectives and targets met, and performance improvements delivered. Agency/facility level baseline environmental data and information are needed to enable accurate measurements to be made. Pioneer EMS governments are beginning to develop such monitoring tools. The availability of a simple, common EMS evaluation and measurement tool would enable OECD Member countries to benchmark their progress over time, and furnish a comparative framework for the OECD as a whole.

The working group felt that information on the costs and benefits of implementing EMS would be particularly helpful in encouraging others to adopt the technique. An evaluation of costs and benefits is being attempted with the Swedish pilot agencies and in the United States, though in both cases it is too early to report definitively on what the gains might be. There are certainly no basic monitoring tools yet which can be applied generally, nor do there appear to be any cost/benefit figures available that can be used for comparative purposes. To allow realistic judgements to be made, the costs of implementing an EMS should be evaluated over the life-cycle of the programme, not simply as up-front expenditure. Among the other benefits that should be factored into the equation is the fact that EMS can be used to pressure the government supply chain to become more eco-efficient via procurement contracts, subject to the national and local legal situation. The framework which EMS provides for greening all operations brings efficiencies by removing the need to create separate environmental programmes, and these efficiencies also need to be documented and taken into account.

Baseline environmental data are needed to accurately measure the changes brought by an EMS.

The costs of implementing an EMS should be evaluated over the life-cycle of the programme, not simply as up-front expenditure.

12. ZEUS (Zero and Low Emission Vehicles in Urban Society) is an EU Thermie Programme funded project, reference number TR 1010/96 SE-GR-DE

Transparency -- EMS and Open Government

Experience in the USA, and several other countries, demonstrates that EMS works best when stakeholders are involved. Participants emphasised the fact that EMS needs to be credible, which raises important issues about accountability and openness. In Norway, Sweden, Germany and the UK, the government has been working with business and communities through the Local Agenda 21 process to improve the transparency of government decision-making. The scope for this type of collaboration was also raised in the business and local government contributions to the Workshop. One example of an approach to stakeholder involvement is the National and Provincial round table process in Canada, which fosters a broad dialogue on sustainable development principles and practices and which informs EMS work at national and provincial levels.

EMAS is alone among EMS methodologies in requiring a public reporting stage: participants publicise what they intend to achieve and provide independently verified proof of the delivery of improvements through published performance targets. This helps build credibility, break down cynicism and force real change. Of course, public reporting can lead to criticism when a target is missed, but greater transparency is increasingly seen to be part of good governance. There is a growing body of opinion in manufacturing industry in favour of openness in environmental matters as the best way of gaining public confidence and increasing market competitiveness. In the environmental field, open government can be turned to wider advantage, adding weight to an administration's aspirations to 'green' community attitudes. Even where an EMS does not require the release of public information, publishing results can help to build public trust and make it easier for the government to persuade others to adopt more responsible environmental behaviour.

The Wider Picture

Contributing to Broader Social Objectives

Environmental management presents major opportunities arising from the need to set continuous and exacting targets. By definition, these can only be achieved, year on year, by redesigning procedures, doing things differently or doing away entirely with harmful activities. In this way, an EMS can provide a major stimulus to the implementation of wider sustainable development strategies (as in the case of Canada), national and local Agenda 21 plans, CO₂ reduction targets, and other sectoral, programmes. Linking EMS monitoring and audit processes with the development, measurement and publication of sustainability indicators is another area of opportunity for cross fertilisation.

Public reporting is a great stimulus to EMS implementation. Although reporting can lead to criticism when a target is missed, greater transparency is increasingly seen to be part of good governance.

Revealing New Partnerships

Beyond such obvious links, the development of the environmental agenda inside an organisation can often reveal unexpected relationships. In one UK Local authority, for instance, officials discovered that as they began to focus their environmental improvement programme on more impoverished urban areas, they immediately found overlaps with anti-poverty and social welfare programmes of other parts of the authority and external agencies (with whom they had never worked before). They found that their environmental expenditures would have a considerable number of unforeseen social, anti-crime, economic, and public health implications and benefits. Moreover, integrating their environmental programme with these other programmes/agencies helped everyone to avoid duplication, made money go further, got things done more quickly, and helped convert an environmental plan into a wider sustainability agenda. This experience also prompted a more corporate spirit within the authority. Cleaning up drinking water, or reducing air pollution, are other “double dividend” examples. Involving schools, or local communities, in implementing environmental action, or monitoring the environment, can also help to generate social cohesion.

The development of an environmental agenda inside an organisation can often reveal unexpected opportunities for cross-fertilisation and integration with other government agendas, such as public health and economic development programmes.

Promoting Green Business and Employment

The solutions needed to manage environmental effects invariably call in part for greener products or services, and can, as a result, encourage related business and job opportunities. The Canadian study cited above, for instance, calculated that the measures taken to achieve savings in government operations would generate a net increase of 15,549 person years of private employment in environmental industries over the same period. Using a government’s commitment to EMS to influence suppliers and contractors to adopt similar practices is a powerful weapon in any strategy to green business and commerce: an organisation’s supply chain presents a quick route into influencing the behaviour of environmental players in the wider community. In the UK, for example, as part of its EMAS process, the London Borough of Sutton requires suppliers on its contract list to submit a company environmental policy prior to reviewing contract renewal. So far, over 600 policies have been received from suppliers, many produced because of the Council’s requirement.

4. APPLICATION OF EMS IN REGIONAL AND LOCAL GOVERNMENT

Although the OECD's work is concerned primarily with the actions of central governments, there is significant progress on EMS at the local level. As a result, one Working Group was devoted to exploring experience in regional and local government to highlight important issues and identify good practice. There is a good deal of expertise emerging from local government efforts, particularly in Germany, Sweden and the UK.

Motivations for Using EMS

Motives for introducing EMS at the local level include environmental imperatives, which are firmly embedded politically in many local authorities. Since Rio, councils are used to deploying their community stewardship role to help promote environmental sustainability in areas like resource, waste and CO₂ reduction. In this, they are reflecting increased public concerns and awareness about the environment. In the process, many authorities strive for efficiencies, keen to demonstrate best service value to the electorate - which can be helped by systematically managing service delivery through tools like EMS.

Increasingly, local authorities have to bid and compete for resources to fund projects or initiatives. Sound environmental credentials are becoming a selection criteria and an EMS will help a council position itself in a competitive environment. Other motivations include the desire to lead by example, and to acquire the competencies required to manage local affairs in an environmentally sound manner. There may also be the need to develop a more responsive organisation that can work with the community to drive forward the innovations necessary to achieve sustainable development. The systematic rigour of an EMS is extremely helpful in these circumstances.

EMS for Local Government:

- Responding to environmental pressures
- Obtaining and demonstrating best value for services
- Competition for resources
- Leading by example

Steps for Implementing EMS Successfully at the Local Level

Implementing an EMS provides an opportunity for managers and decision-makers to take stock of what is happening in the wider organisation, to review the services they deliver, and to think through the implications of adopting a more environmentally sustainable course for the organisation as a whole. In this way, a number of the steps associated with introducing EMS provide creative opportunities for an agency to re-

position and re-invent itself. Re-focusing priorities to concentrate on environmental performance improvement, for example, can stimulate a general culture of setting and meeting targets. Reviewing the management system can facilitate a review of the overall corporate structure, whilst the greener thinking required to achieve an EMS can create a more resource-efficient approach in all areas of activity.

In exploring the nature of the environmental impact that they are having, local authorities implementing EMS usually try to recognise the whole picture, considering both direct environmental effects of their operations and the effects of the services provided. The latter, invariably policy driven, provide significant opportunities for influencing local communities to make more sustainable choices. For example, an authority with urban planning responsibilities will look beyond the impacts of its own vehicle use when doing an EMS to the more significant effects of traffic use in its area. Using its land use policies to promote a reduction in local CO₂ emissions, would be one way of improving local performance. Similar parallels can be drawn with waste production, and resource, water and energy use. Local authority experience also confirms that when developing an EMS, it is vital to concentrate on the most significant effects and deal with them first.

Local Government Influencing Business

Local authorities have an extensive interface with their business community, with many firms acting as local suppliers. Some councils are beginning to use their EMS to influence supply chains so that the environmental impact of purchased services and goods is improved. This is achieved through contractual arrangements and purchasing policies. Working in partnership with the supply chain provides opportunities to encourage more sustainable products and the use of more environmentally sound technology. Setting up purchasing consortia increases the pressure for greener goods and services through bulk buying.

A wide range of interventions are available to councils to encourage local business to adopt more sustainable practices. These include both 'carrots', such as providing advice and information, recognising achievements, or the deploying grants and budgets, and 'sticks', including sanctions for failing to comply with regulatory requirements. In addition, some councils have realised that they wield considerable influence through the large-scale investments they make when managing the pension funds of their employees. Ethical and green investment portfolios are a powerful way to demonstrate corporate commitment to the EMS agenda; but they also give impetus to the growing market in environmental products and services.

Some councils are beginning to use their EMS to influence supply chains so that the environmental impact of purchased services and goods is improved.

A Role for Central Government

There is a great diversity in local government, and in the relationship between central, regional and local government throughout OECD member countries. It is obviously important to have regard to the specific political and administrative structures and responsibilities in determining what kind of support higher level governments can give to encourage local authorities to develop EMS. Where there is a strong interface between local and central government, the working group felt that central government could adopt a number of actions to help local government with its environmental stewardship role and to embed EMS at the local level.

Primarily, participants noted that there was a need for a 'whole government' approach in which all government functions and departments followed a common approach to controlling environmental impacts. Without a unified approach, there is a risk that mixed messages will be sent from central to local government, possibly discouraging, or diluting, local efforts. The most helpful action would be for central governments to lead by example. The working group also felt that governments have a role in promoting environmental technology and environmental products and providing a purchasing framework that could be followed by local authorities. Ultimately, central government could also use regulatory controls or financial measures to pressure local authorities to implement EMS on a large scale.

Apart from being a resource for helping central governments to develop their own EMS, local government also provides a crucial delivery mechanism for spreading and implementing sustainable development policies and plans. This role is fully recognised in Chapter 28 of Agenda 21, which acknowledges the unique contribution that municipalities can play by virtue of their local competencies, powers and community links. By spreading information, introducing measures, and facilitating resource flows, national governments can have a major influence in improving environmental performance through grass roots action.

Central government can support Local EMS initiatives by:

- **Leading by example**
- **Establishing common institutional approaches;**
- **Promoting environmental technologies and products;**
- **Applying regulatory pressure;**
- **Providing information, and technical and financial support.**

5. CONCLUSION

Conclusions

The Stockholm Workshop contributed to on-going efforts in the OECD to identify innovative approaches to the greening of Member country governments. The outputs from the Workshop will be included in the 1999 Report which will be presented to the OECD Council on *Progress on Improving the Environmental Performance of Government*.

An EMS is a highly practical mechanism, which goes quickly and directly to the heart of the environmental agenda, tying it directly into the culture, procedures and people of an organisation. Many more organisations will need to embrace the discipline of EMS before real momentum is achieved towards a more sustainable future. But of all organisations, none are more important to increasing the momentum than national governments. The 29 OECD Member governments hold a pre-eminent position among their peers, by virtue of their economic power, level of technology, and environmental impact.

The key themes emerging from the Workshop underline the significance of the contribution which government-led EMS can make to reducing international environmental pressures. It is worth repeating, therefore, that although excellent progress is being made by some governments, they are in a minority. EMS is a challenge, but not an insurmountable one. There are few technical barriers to its wider adoption and innumerable benefits to be gained.

A number of practical recommendations for next steps conclude this Report. These recommendations stem from the discussions in plenary and working group sessions, which in turn were informed by the excellent set of pro-active, informal papers submitted by Member countries and the formal presentations provided by experts in the field. Recommendations are grouped into two parts: (1) action by Member governments of the OECD, and (2) next steps for the OECD's programme of work in this area.

Action by Member Country Governments

OECD Member countries were encouraged to move quickly to implement the OECD Council Recommendation they agreed in 1996, including the establishment of EMS in their government agencies. OECD governments should take the lead in promoting environmental management by introducing EMS into their own practices and by networking with other levels of government and the private sector to develop and exchange good practice.

The five recommendations below relate to priority considerations for ensuring that environmental management systems for government agencies achieve their full potential:

➤ **Strategic priorities:** When introducing an EMS, governments and their agencies should take a strategic, comprehensive approach by focusing on environmental significance as a central criterion for action. The inclusion of operational impacts, decision-making processes, and policy implications will

ensure the most effective EMS, although circumstances may dictate that the direct effects from operations are dealt with first.

➤ **Management incentives:** Governments should stimulate their agencies to further develop their EMS activity by developing budget and financing mechanisms which create an incentive for sound environmental management, for example by promoting life-cycle costing, reinvestment of retained savings by the responsible organisation, and other similar measures.

➤ **Training Staff:** Training, including raising basic environmental awareness, is essential to the successful introduction and development of an EMS, and should be made available at all operational levels and over time as the internal EMS skills of Government agencies change.

➤ **Reporting Progress:** Government agencies should implement EMS in an open manner, and produce regular public reports on progress and measures to inform citizens and engage stakeholders in the process.

➤ **Reaching all levels of government:** Local government is a particularly effective agent for delivering environmental, social and economic improvements through better environmental management. Central governments should encourage this role by taking appropriate measures to facilitate the implementation of EMS activity at regional and municipal levels.

Recommendations for the OECD

➤ **An EMS for the Organisation:** The OECD should, as a priority, build in-house competence on EMS by introducing, as soon as practicable, a full EMS within the Organisation covering its overall environmental impact, and should use this experience to develop models for assisting Member governments to follow suit.

➤ **Developing the Economic Rationale:** The OECD should develop and disseminate the economic argument for sound public sector environmental management, globally, nationally and locally.

➤ **Supporting Member Country Initiatives:** Three activities in particular have been identified as areas where further international collaboration would be useful to promote further progress:

- **Principles:** The OECD should develop a set of broad EMS principles for EMS in government agencies to stimulate and assist Member country efforts to produce their own guidance, and should facilitate further information exchange between Member countries in this area.
- **Measuring Performance:** The OECD should work with Member governments, and others with expertise in EMS, to develop a common evaluation and measurement tool so that governments are able to benchmark and track their individual progress, as well as the implementation of the Council Recommendation of February 1996. This work could be linked with on-going work on the development and use of indicators of sustainable consumption and of sustainable development.
- **Reporting Progress:** The OECD should consider how best to follow-up the Stockholm Workshop, perhaps through a similar meeting in two years time, so that progress on the implementation of EMS in governments can be reviewed, reported on and further advanced.

Where to Turn for Guidance

Workshop participants presented a large amount of practical and theoretical guidance which is already available for use by Member governments and their agencies. This covers help on designing EMS, management tools like gap analysis, purchasing guidance and a number of technical manuals. In addition, a number of countries have Internet sites on greening government, EMS, green purchasing and a number of related themes. Some of those addresses are listed below. This body of knowledge and advice represents a starting point for the development of a more systematic exchange of information between the Member states of the OECD. In addition, the OECD Internet site on Improving the Environmental Performance of Government (<http://www.oecd/env>) also host papers on EMS and Green Purchasing, and provide links to national and international sites.

CANADA

Commissioner of the Environment and Sustainable Development

Web site: www.oag-bvg.gc.ca/oag-bvg/coe/html/env_e/menu_e.html contains the following reports and publications (Follow “Green Report” and “Publications” icons):

- “Green” Reports to the House of Commons, 1997 and 1998
- The Implementation of Federal Environmental Stewardship, May 1996
- EMS: A Principle-based Approach, October 1995

EMS Tools/Manuals

- * A Guide to Green Government, 1995: www.doe.ca/grngvt/guide.html
- * Directions on Greening Government Operations, 1995: www.doe.ca/gog/general/demain.htm
- * Accelerated Reduction/Elimination of Toxics: www.doe.ca/aret/homee.html
- * Toxic Substances Management Policy: www.doe.ca/toxics/toxic1_e.html
- * Pollution Prevention Program: www.doe.ca/pollution/strategy/plt_pl_e.htm
- * CO₂ Voluntary Challenge Registry: www.vcr-mvr.ca
- * GIPPER Guide to Environmental Purchasing: www.buygreen.com
- * Preventing Site Contamination at Federal Facilities: A guidance Manual on the Management of Contaminated sites in Canada Site Remediation Technologies: A reference manual

Federal Web Sites:

Greening Government: www.doe.ca/gog/index.html
 Canadian Environmental Assessment Agency: www.ceaa.gc.ca
 Canadian Council of Ministers of the Environment: www.mbnet.mb.ca/ccme
 National Round Table on the Environment and the Economy: www.nrtee-trnee.ca

Departmental Sustainable Development Strategies

Agriculture Canada: www.agr.ca/policy/envharmon/indexe.htm
 Environment Canada: www.doe.ca/sd-d_consult/final/SDGTOC_E.HTM
 Public Works and Government Services Canada: www.pwgsc.gc.ca/comm/sds/text/table-e.html

Where to Turn for Guidance (continued)

GERMANY

- * Handbook on Environment-Friendly Procurement (Federal Environment Ministry (BMU) and the Federal Environmental Agency (UBA).

SWEDEN:

- * Eco-Management for Governmental Authorities: A guide for the integration of environmental considerations (Swedish Environmental Advisory Council, 1997).

UNITED KINGDOM

Government Web site: <http://www.open.gov.uk/doe/envir/greening/gghome.htm>

- * Register of Regulatory Requirements for Government Departments (England) (Department of the Environment, Transport and the Regions, Environment and Energy Awareness Division, October 1997)
- * Digest of Green Housekeeping in Government Departments (Department of the Environment, 1996)
- * This Common Inheritance (1990 White Paper)

UNITED STATES

- * US Websites:
 - Federal Facilities Environmental Leadership Exchange: www.epa.gov/oeca/fedfac/ffflex.html. This site provides access to all kinds of information about US government facilities, as well as links to other major pages (themes: Greening of the White House; Greenlights Program; Waste Prevention, etc.)
- * Implementation Guide for the Code of Environmental Management Principles for Federal Agencies (USEPA, Office of Enforcement and Compliance Assurance, Document Number: EPA-315-B-97-001)
- * Generic Protocol for Conducting Environmental Audits of Federal Facilities (USEPA, Document Number: EPA-300-B-96-012A and B)
- * Environmental Management System Benchmark Report: A Review of Federal Agencies and Selected Private Corporations (USEPA, Office of Enforcement and Compliance Assurance Reference: EPA-300R-94-009)

A number of other initiatives and programmes are referred to in the informal papers to the Workshop, now located on the OECD Website. In addition, a number of publications and research work are on the horizon, including the following:

- * Audit Criteria for Sustainable Development Strategies (Canada);
- * Handbook of Environmental Controlling in the Public Sector - to start in 1998 (Germany);
- * Information on Cost-Savings Arising from EMS (USA);
- * Guidance on environmental performance standards and measures, integrating environmental accountabilities into general management structures and integrating environmental reporting into business plans (Canada).

ANNEX I:

Summary of Informal Country Papers Submitted to the Workshop

Canada: is committed to incorporating environmental and sustainable development considerations into its policies, programmes and operations. The post of Commissioner of the Environment and Sustainable Development was created in 1995 to assist Parliamentarians to oversee the federal government efforts to protect the environment and to foster sustainable development. By amendments to the 1995 Auditor General Act, 24 federal government departments and agencies were required to table individual sustainable development strategies in Parliament by December 1997. In fact, 28 tabled such strategies within the deadline. Strategies need to encompass the economic, environmental and social impacts of a department's policies, programs and operations. There is a requirement to publicly report on progress in achieving targets, and to update the strategies, on an annual basis. All strategies will be reviewed by the Commissioner and his staff. In 1995, *A Guide to Green Government* was endorsed, and guidance was issued on *Directions on Greening Government Operations*. Departments are, as a result, required to incorporate environmental impact assessment (EIA) into the design of EMS. EIAs are also used to assess government department policies, prior to their approval by Cabinet. A common methodology is currently being developed for these appraisals. At the implementation stage, EMS design adapts to the local requirements: custodial departments generally focus on operational issues, for example, while governance departments go further to look at policy issues. Some challenging targets are beginning to emerge. For instance, Environment Canada has set a goal of meeting between 15 and 20% of its energy from renewable sources by 2010. Organisational responsibility for implementing EMS rests typically with headquarters component of a department, which becomes responsible for driving it throughout the organisation.

France: has a *General Action Plan* focusing on the following direct effects - construction of new buildings, maintenance and renovation of old buildings, maintenance of government land, energy conservation, water conservation, procurement of consumables, equipment and movable assets, waste collection and recycling, greening of vehicle fleets. Pilots dealing with these effects were launched in autumn 1997, and they will eventually be rolled-out from departmental to regional level jointly by the Ministries of the Environment, Civil Engineering and Industry. A guide on reducing water consumption was issued in 1997, and environmental protection will be incorporated into training programmes for government staff. Many of these programmes have yet to be designed, except for training courses on energy conservation which became available in 1997.

Germany: has witnessed a growth in the interest in EMS, especially in the private and local government sectors, following the introduction of EMAS in EU member states in 1993. At the state government level, Bavaria has just published an environmental statement, with priorities focused on direct sectoral effects. These include environmentally-friendly procurement, waste avoidance, energy management, water-saving concepts, environmental reports and mobility/car fleets. In all, sixteen pilot projects on EMS are currently being implemented by federal, länder and local authorities. They also mainly cover direct effects, but some have identified practical ways of incorporating indirect environmental impacts with effects that can be attributed to official decisions. The EMS pilots also highlight the need for administrative reform or quality management. Barriers to progress include the lack of 'productivity culture' in public agencies, though there is an element of competition between länder to implement EMS.

Japan: employs an approach based on its *1994 Basic Environmental Plan*. This established four broad objectives as a framework for government activity: (1) adopting an environmentally-sound material cycle; (2) a harmonious co-existence of nature and human beings; (3) the participation of all sectors of society in environmental activities; and (4) playing a positive role in international environmental activities. In June 1995, the *Action Plan on Greening Government Operations* was published. This seeks the implementation of a more environmentally benign approach to their activities by all ministries and agencies. The scope is on direct effects, principally: the purchase and use of goods and services; environmental considerations being built into construction and building maintenance; environmental considerations being introduced into administrative management issues such as use of water and electricity; training programmes for employees; and implementing a follow-up mechanism. Though not promoted as an EMS, the approach shares many of the characteristics. Eleven concrete, and quantifiable, goals have to be met by participating agencies (see Box D, above). The programme is co-ordinated by the Strategic Environmental Planning Division of the Japanese Environment Agency. Participation is voluntary, though a view is emerging that it may be better to move towards a legally binding requirement. Environmental impact assessments are also required for public works.

Mexico: has delegated responsibility for designing an EMS for the whole public administration to the Ministry of Environment, Natural Resources and Fisheries. However, the programme is in abeyance at the moment. There is interest in linking EMS to further reforms in the public administration and this is seen as an instrument to achieve important social and administrative objectives associated with good government. If government starts greening its own activities, it is felt that this will serve as an example for other institutions and communities. It will also increase the credibility and effectiveness of environmental regulation enforcement and policy implementation.

Norway: is about to start a kind of EMS called the *Green Government Project* in central government agencies. It follows the approaches pioneered in Sweden, and will initially be piloted in five to ten government agencies. These pilots will be completed by 2000. The pilot results will be used to decide how to progress further. The pilots will be limited to direct effects like purchasing, the use of materials and resources, transport, buildings, and waste management.

Sweden: bases its national activity on a government declaration to be an international prime mover and an example to other countries in its efforts to create a sustainable society. The Swedish government has committed itself to integrating environmental considerations into its central public administration by the means of an EMS. In this connection, the scope of EMS covers direct and indirect effects arising from policies, decisions and ordinances. EMS is to be linked into the ordinary activity planning process and into quality programmes. The approach is based on the realisation that there is a need for top-down directives, complemented by bottom-up understanding and action. The aim is not to build a new EMS methodology, but to make it possible for participants to register under ISO 14001 or EMAS. To this end, in December 1996, the government instructed 25 central agencies to institute an EMS development process, with a target date for completion and report of April 98; a period of fifteen months. The particular challenge for central agencies and local authorities is seen to lie in resolving the difficulties of integrating environmental considerations into decision-making processes and how they function organisationally. Recently, the programme has been extended to a further 45 units, with the aim of having all 300 agencies and government companies operating an EMS within the next four to five years. Ministries, however, have yet to start. At the local level, Swedish local authorities are particularly active in environmental management, where they see a strong link with their Local Agenda 21 work. In fact, EMS are considered to be like Local Agenda 21 planning, 'but with more structure'.

Switzerland: is pursuing a number of individual initiatives, such as its *Energy 2000* programme in government buildings, greener public purchasing and the implementation of an EMS in the Military

Department. In June 1997, the Swiss Federal Council approved a motion to introduce environmental management into the federal administration. Implementation will be based on three sustainability objectives: to continuously improve the environmental efficiency of the federal administration; to contribute towards the stabilisation of the eco-system; and to reduce costs by reducing the consumption of resources. RUMBA, the acronym for the resulting pilot, involves the systematic recording of environmental effects, or 'eco-balances', the establishment of environmental models and annual environmental goals, and the empowerment of employees, through motivation and training.

UK: has a strong government commitment to improving its environmental performance. A new environmental auditing committee has been set up at government department level to co-ordinate greening operations across all spheres of government activity. EMAS is supported in the private sector and local government, especially in terms of the coverage of indirect and service effects in the latter. However, as a first step in central administrations it has been decided to concentrate on developing guidance for policy staff and economists to undertake environmental appraisals of policies and programmes. Targets are already in place for improving energy efficiency and waste reduction, and are being developed for water conservation, reducing car dependency and phasing out ozone-depleting substances. In addition, the UK government has two units certified under ISO 14001 (A Department of the Environment, Transport and the Regions headquarters administrative unit and the Industrial Science Centre, in Northern Ireland). The health service in Scotland has developed a management tool known as GREENCODE. Some ten trusts are actively involved in its implementation, while early work on environmental management is in train in another five government organisations.

USA: is particularly advanced in terms of the guidance and encouragement it has put in place to encourage agencies to adopt EMS approaches. EMS programmes have evolved in the US since the 1980s, and by 1996, the EPA had issued a *Generic Protocol for Conducting Environmental Audits of Federal Facilities*. A recent survey showed that there was weak management support for environmental compliance at many federal agencies, as well as a lack of formality to the environmental compliance programmes. Training was inadequate and performance measures and accountability lacking. As a result, the EPA now encourages agencies to develop a higher emphasis on EMS. In October 1996, a Code of Environmental Management Principles for Federal Agencies (CEMP) was published and the participating agencies were asked to commit themselves, in writing, to the principles of the code and to describe their plans for implementing it, locally. The approach is centralised, in that the mandate comes from national government in the form of executive orders and laws, but each department and agency generally has flexibility in how they meet their 'greening' obligations. This is a voluntary scheme with a goal to move agencies 'beyond compliance' and the traditional short-term focus on regulatory requirements. Implementation of CEMP at agency level can be via ISO14001. Sixteen federal agencies have adopted the principles. The voluntary nature of the scheme has led to 'encouraging, if somewhat slow' progress. A straightforward way to quicken progress would be to make implementation of an EMS a legal binding requirement for the federal sector. Work is now concentrating on how best to link EMS into other management processes like, safety and health programs, contract reform, regulatory incentives, the federal budget cycle, and implementation of the National Technology Transfer and Advancement Act. Effort is also going into seeing how EMS can be linked with the evaluation and assessment tools used already by government departments and agencies, such as those operational under the National Environmental Policy Act.

ANNEX II

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