SMALL BUSINESSES AND ENVIRONMENTAL COMPLIANCE

Review and Possible Application of International Experience in Georgia

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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FOREWORD

Ensuring compliance of small and medium-sized enterprises (SMEs) with environmental regulations is a substantial policy challenge for environmental authorities worldwide. In particular, their size and number limit the effectiveness of conventional regulatory and compliance assurance approaches developed for large enterprises. In transition economies, SMEs are still in the process of development, but their number, and thus their environmental impact, is increasing, to some extent due to policies supporting their growth. While containing many positive elements, these policies commonly fail to address environmental issues; on the contrary, reform packages sometimes lead to unwanted "spill-over effects", such as restrictions or even bans on environmental inspection. Against this background, environmental authorities need to improve current, and develop new, instruments that will induce regulatory compliance more effectively.

In order to help Georgia, a "reform-minded" transition economy, to do this, a review of good international practice and tools used to promote environmental compliance of SMEs was conducted. The review was carried out within the framework of the regional Regulatory Environmental Programme Implementation Network (REPIN) of Eastern Europe, Caucasus and Central Asia, and under the umbrella of the Task Force for the Implementation of the Environmental Action Programme (EAP Task Force). Funding for this work was provided by the governments of the Netherlands and Norway.

The EAP Task Force is an intergovernmental body that aims to facilitate reform of environmental management systems in the EECCA region. It brings together policy makers from EECCA, Central Europe and donor countries, as well as international institutions and other stakeholders. The Task Force was established at the 1993 "Environment for Europe" Ministerial Conference in Lucerne, Switzerland. The secretariat is hosted by the Environment and Globalisation Division of the OECD Environment Directorate.

The review supports policy initiatives of the Georgian Ministry of Environment Protection and Natural Resources (MENR), which is pursuing reforms of environmental regulation and compliance assurance aspect of a wider public service reform. Among other things, the Law on Environmental Enforcement was enacted in July 2005 and an Environmental Inspectorate was established in September 2005. The newly adopted Strategy of Environmental Compliance Assurance, which will guide the activities of the Georgian Inspectorate for Environmental Protection in the period 2007-2010, calls for the development of a comprehensive programme to promote compliance within the SME sector. This is necessary because SMEs have limited human and financial capacity and lack the required competence to respond adequately to the complex environmental regulatory framework that exists in Georgia.

This document provides a starting point for developing such a programme by suggesting specific steps that can be taken to adopt compliance promotion tools in Georgia and by demonstrating good international practice. In this report, "compliance promotion" is defined quite widely as any activity that facilitates or encourages voluntary (*i.e.* not involving sanctions) compliance with environmental requirements. Thus the focus is on preventive measures. At the outset it has to be mentioned, however, that where prevention fails, governmental authorities should not hesitate to enforce regulations by using sanctions.

The report also assesses the benefits and limitations of various tools, the role of key stakeholders and practical examples that support policy recommendations to promote SMEs environmental compliance in Georgia. Certain instruments, for instance voluntary agreements, are not discussed here due to their limited applicability to SMEs.

The report is based on a comprehensive review of international experience, in particular of practical examples of government-driven compliance promotion mechanisms in OECD countries. A number of information sources were used in writing this report, particularly OECD and EU documents, as well as Internet sources and scientific articles. The paper was drafted by Valdas Arbaciauskas (Centre for Industrial Sustainable Development, Lithuania) and completed by Angela Bularga, EAP Task Force Secretariat, OECD.

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ACRONYMS

CERES	Coalition for Environmentally Responsible Economies
CP	Cleaner production
DfE	Design for environment
EAP	Environmental action programme
EC	European Commission
EMA	Environmental management accounting
EMAS	Environmental management and audit scheme
EMS	Environmental management system
EU	European Union
GRI	Global Reporting Initiative
ICT	Information and communications technology
IPPC	Integrated pollution prevention and control
ISO	International Organization for Standardization
NEFCO	Nordic Environmental Finance Corporation
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational health and safety
SBO	Small business ombudsman
SME	Small and medium-sized enterprises
UNDSD	United Nations Division for Sustainable Development
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
US EPA	United States Environmental Protection Agency
USAID	United States Agency for International Development
WBCSD	World Business Council for Sustainable Development

EXECUTIVE SUMMARY

This report describes different tools used to promote environmental compliance among small and medium-sized enterprises (SMEs), and provides recommendations for the development and application of such tools in Georgia. Although the SME sector is not yet a major economic force in Georgia, the government has put in place policies that encourage a rapid expansion of SMEs, which will increase not only the economic significance but also the environmental impact of small firms.

SMEs and the compliance challenge

The report argues that SMEs often constitute the most vulnerable segment of the regulated community. Their "compliance vulnerability" stems from several factors, including: a lack of resources exacerbated by higher compliance costs and poor access to finance; the ignorance of regulatory obligations and environmental impacts, as well as of technological solutions for their environmental problems; poor integration of environmental management activities into core business activities; and a lack of exposure to public scrutiny. While the environmental impact of SMEs can be high due to cumulative effects related to a large number of such enterprises, the general public perceives SMEs as actors that have a lower impact on the environment in comparison with larger industrial plants. Finally, the sheer numbers of such enterprises often lead to very infrequent inspections.

Bringing small firms into environmental compliance and promoting initiatives beyond regulatory compliance can have both environmental and non-environmental benefits for SMEs, such as cost savings, improved employee skills, new customers or business opportunities, a positive public image, etc.

Tools used to promote SME environmental compliance

The report describes preventative approaches that could be used to boost the environmental performance of SMEs, such as, for instance, simplification of regulation and inspection, promotion of cleaner production and simplified environmental management systems, development of reference documents and provision of advice through various communication channels, and use of third party pressure to improve SME compliance behaviour. When backed with mechanisms that effectively deter violations, such approaches can entail not only higher compliance rates, but also cost savings for governmental authorities.

Two main categories of instruments are described in the report: (i) corporate approaches, and (ii) government-driven initiatives, which also may involve external actors. While different actors can contribute to promoting compliance, governments, play a pivotal role in establishing a policy framework that enables application of different compliance promotion instruments and provides incentives for enterprises to improve their environmental performance.

Recommendations for promoting SME compliance in Georgia

The report shows that despite a very poor baseline situation, the legal framework in Georgia is increasingly supportive to the development of SMEs and aims at a reduction of the regulatory burden while simultaneously allowing for targeted assistance to small businesses.

In line with this policy, the environmental authorities in Georgia have received a strong mandate for compliance promotion. The challenge is to develop and then apply a result-oriented and coherent approach towards raising the environmental awareness and performance of SMEs. More specifically, this entails:

(i) Creating a better understanding of the diversity, needs, and most effective ways to work with SMEs;

(ii) Designing and implementing tools that promote environmentally responsible behaviour within the SME sector; and

(iii) Enlarging stakeholder involvement in compliance promotion.

Five over-arching areas for action are proposed in the report:

Supporting activities within environmental authorities such as: (i) assessment of the environmental significance of SMEs and training staff to better understand the challenges that environmental regulation poses for SMEs; (ii) the development of specific tools to address this issue; and (iii) designation of a "small business ombudsman" who promotes the interests of small businesses within environmental authorities;

Providing easy access to information and conducting regular dialogue, including: (i) online access to laws and regulations; (ii) analysis and disclosure of information on environmental performance and the specific needs of SMEs; and (iii) seeking feedback from SMEs;

Improving procedural aspects, including: (i) guaranteeing SMEs involvement in the regulatory processes; (ii) further simplifying permitting approaches and procedures; (iii) establishing clear, SME-tailored self-monitoring requirements and integrating environmental reporting from enterprises; and (iv) simplifying and better co-ordinating inspection.

Providing compliance assistance and promoting excellence, including: (i) development of reference materials for SMEs; (ii) promoting environmental management systems and cleaner production; (iii) facilitating the development of training programmes in environmental management systems and cleaner production specifically for SMEs; (iv) establishing mechanisms for improving contact with SMEs (*e.g.* direct communication during on-site visits and meetings, or by using IT-based tools); and (v) promoting public recognition of SMEs that are in compliance or go beyond compliance.

Co-operating with non-governmental actors, including: (i) creating conditions for third parties to serve as indirect enforcers; (ii) fostering thematic business-to-business networking; (iii) encouraging universities to establish academic curricula designed to increase local knowledge about environmental management, cleaner production, labelling, and other policy instruments.

A further refinement and prioritisation of these proposed actions is needed based on an analysis of the potential effectiveness of different tools in a rapidly changing economic and social environment, and with regard to human capacity and financial feasibility. Also, these actions need to be co-ordinated with other initiatives directed towards SMEs. Finally, the opportunities from working in partnerships with the non-governmental sector should be fully explored.

1. SMALL FIRMS AND THE ENVIRONMENT: GENERAL CONSIDERATIONS

1.1 The economic role and specifics of SMEs

Small and medium-sized enterprises (SMEs) are defined as non-subsidiary, independent firms that employ no more than a given number of employees. This number varies across national statistical systems. The most frequent upper limit is 250 employees, as in the European Union. However, some countries set the limit at 200 employees, while the United States considers SMEs to include firms with fewer than 500 employees. Small firms are generally those with fewer than 50 employees, while micro-enterprises have at most ten, or in some cases five, workers. Financial assets are also used to define SMEs.

In OECD countries, SMEs play a major role in economic growth, and provide most new jobs. According to *OECD's Small and Medium Enterprise Outlook*, over 95% of enterprises in OECD countries are SMEs, which account for 60-70% of employment in most of these countries. As larger firms downsize and outsource more work, the weight of SMEs in the economy is increasing. However, many of the traditional problems facing SMEs, such as lack of financing, constrained managerial capabilities, low productivity, and higher sensibility to regulatory burdens, become more acute in a globalised, technology-driven world.

Most SME jobs are in the service sector, which now accounts for two thirds of economic activity and employment in OECD countries. Smaller firms are found particularly in the wholesale and retail trade, the hotel and restaurant business, communications and business services, and construction. SMEs also account for a high percentage of manufacturing firms in many OECD countries and provide at least half of manufacturing employment in those countries.

Smaller firms are increasingly present in technology-intensive industries such as information and communications technology (ICT) and biotechnology. Encouraging entrepreneurship and facilitating the rapid growth of innovative SMEs is an effective means of creating jobs, reducing poverty, and stimulating local and regional development. SMEs can also play an important role in promoting environmental sustainability due to their increasing role in economic development and employment.

1.2 Environmental significance of SMEs

The quantification of environmental pollution originating from SMEs is an important step in designing adequate environmental policies and compliance assurance strategies for SMEs. Depending on the extent of the environmental impacts of SMEs, several policy responses could be envisaged:

- When the contribution of SMEs to pollution is substantial, authorities could help SMEs to comply with environmental requirements, so as to both protect the environment effectively and ensure the development of SMEs;

- When SMEs create little pollution, the legislative and compliance monitoring pressure on them could be diminished; and

- When pollution from SMEs is only limited to a few sectors, authorities could target those sectors.

In principle, SMEs can pose serious environmental problems due to their high numbers and their cumulative effect. The impact of manufacturing SMEs is largely acknowledged as they consume energy and natural resources, and generate waste and pollution. At the same time, the role of agricultural and service sector SMEs should not be neglected.

Evidence collected through several studies conducted in the OECD countries, shows that agriculture is one of the key sectors where polluting SMEs are active. Their activity is a major source for water pollution and land contamination. As concerns service sector SMEs, in particular petrol stations and repair shops, they can pose a risk of significant routine pollution or accidental releases. SMEs in all sectors

could have a negative impact on biodiversity due to changes of habitat they provoke, especially in environmentally sensitive areas.

Statistical information on environmental impacts of SMEs is quite scarce in both OECD and non-OECD countries, with only few studies quantifying these impacts. For example, a report on SMEs and the environment produced for the European Commission by ECOTEC Research and Consulting mentions that SMEs are estimated to generate as much as 60% of commercial waste and 80% of pollution incidents in England and Wales. Work by the Wales Environment Centre in rural Wales, where SMEs constitute 97% of businesses, indicates that they produce around 91% of waste in the area.

Research conducted in the Netherlands by TNO[1] concludes that smaller industrial installations significantly raise environmental pressures (around 50%) for a number of pollutants, in particular for nitrogen and phosphorus, heavy metals and some pesticides, ozone-depleting substances, and volatile organic compounds (VOC). They contribute to acidification and waste generation, both hazardous and non-hazardous. The study identifies a number of key sectors where polluting SMEs are active, including:

- Agriculture, particularly for intensive livestock farming;
- Construction, waste treatment and recycling;
- Food and drink industry;
- Building products industry; and
- Metal products industry and electro-technical production.

Another study, commissioned by the Dutch government and developed by KPMG Environmental Consulting, identified some other industrial sectors where SMEs have a particularly significant impact on the environment, such as printing, textile and leather manufacturing, and some areas of the timber, woodworking and paper industry.

[1] TNO is the Netherlands Organisation for Applied Scientific Research.

At the same time, SMEs could make a positive contribution to environmentally sustainable development as some of them provide environmental goods and services. Companies that provide consulting services (*e.g.* on environmental management, cleaner production, waste management, etc.) often belong to the SME sector. Some SMEs are also involved in landscape planning, analysis of contaminated sites, and land reclamation and regeneration. SMEs also often serve as focal points for the sale of cleaner technologies and pollution control equipment.

1.3 Barriers to better environmental compliance among SMEs

The regulated community must guarantee regulatory compliance and improve environmental performance. To this end, necessary adjustments have to be made in production processes, products and services aimed at reducing the environmental impacts. Smaller firms, unfortunately, tend to be less equipped in terms of knowledge, skills, and resources to ensure environmental compliance.

First of all, SMEs are often ignorant about the legislation that governs their activities or do not understand what is required. The proliferation of laws or multiple amendments to improve them can create confusion and make it difficult to understand what compliance involves. Inaccessible and incomprehensible regulation particularly affects small business compliance rates. Many studies show that small businesses cannot keep up with the volume of regulations that is produced by many government authorities. For example, Norwegian internal control regulations (Ministry of Local Government, 1991) entered into force in 1992 and required all businesses and other organisations that employ people, both public and private, to establish and maintain a control system for environmental, health and safety issues. A 1994 evaluation of the implementation of the regulations among 100 top managers found a major difference in knowledge of the regulations between SMEs and large businesses: 43% of managers in SMEs – which make up 90% of Norwegian firms – had never heard of the regulations.

Are SMEs aware of the environmental impacts of their business activities? Existing data show that a large proportion of SMEs tends to underestimate their environmental impacts. A study conducted in the UK demonstrated that only 7% of SMEs believed that their activities were harmful to the environment while 41% of SMEs admitted that they

had at least one potentially harmful activity when prompted with a list. Similarly, a Belgian study carried out by the Wallonian Union of Enterprises showed that up to 84% of the Belgian industrial SMEs did not feel that they contributed to pollution. Without information about their environmental impacts and associated production inefficiencies, *e.g.* in energy and natural resource use, SMEs will be neither prone nor able to take decisions that would improve their environmental performance. The saying that "what is not measured can not be managed" is particularly true is the case of SMEs.

A key factor affecting the compliance behaviour of SMEs is their limited competence level and capacity to adopt approaches of environmentally sustainable industrial development. Many SMEs do not have information about modern managerial and technical solutions that could help them improve environmental (and, sometimes, economic) performance. They suffer from an overall lack of managerial and technical skills and human resources to perform certain tasks, especially if these tasks are believed to be outside of the SMEs core business. They also have fewer financial resources to invest in management and technological solutions that could make their operations more environmentally sustainable. Finally, SMEs are much less preoccupied about their image as a good environmental citizen than large enterprises.

The shortages of resources, together with the lack of technical expertise and skills, clearly contribute to the "sceptical" attitude that SMEs show towards the potential benefits, cost savings and customer rewards associated with environmental improvements. A negative company culture towards the environment may even persist despite positive attitudes among staff. For example, empirical investigations in Austria conducted by the Austrian Institute for Small Business Research showed that compliance with environmental requirements is perceived by a large percentage of SMEs primarily as a cost without any benefits. Indeed, costs of compliance might be high and "win-win" solutions are not always guaranteed. Sometimes this is further aggravated by the focus of SMEs on short-term economic gains.

1.4 Benefits of environmentally responsible behaviour

Environmentally responsible behaviour could potentially result in a number of benefits for SMEs, including:

Organisational benefits, derived from improved quality of internal procedures, information and management, which can result in full compliance and reduced regulatory oversight;

Environmental benefits, derived from improved environmental performance, increased energy/material efficiencies and recycling, and reduced pollution;

Financial benefits, such as cost savings from material, energy and waste reductions and efficiencies;

Human resources benefits, such as increased employee motivation and morale, enhanced skills and qualifications, and a better company image among employees;

Commercial benefits, such as new customers and business opportunities, preferred supplier status, and positive environmental profile contributing to competitive/marketing advantage and customer satisfaction; and

Communication benefits, such as positive public image, better access to capital from environment-sensitive investors and improved communication with authorities.

1.5 Drivers of SMEs environmental compliance

Overcoming deficiencies in the compliance behaviour of SMEs is a matter of several critical factors, including:

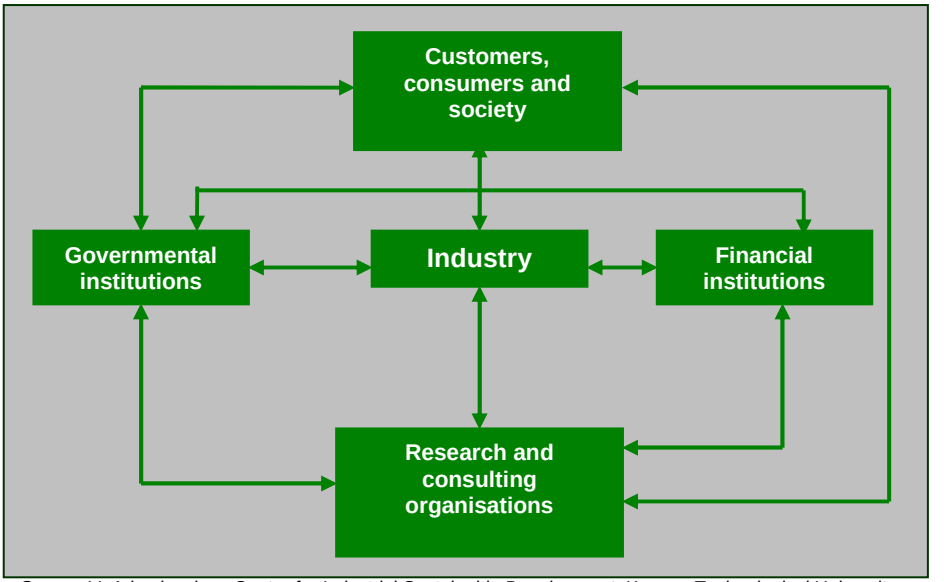
(i) Stronger incentives for compliance, such as clear non-environmental benefits, to stimulate motivation and commitment of SMEs;

(ii) Sufficient knowledge of environmental impacts and corporate tools that can diminish these impacts; and

(iii) Improved capacity of the resource base and management, as well as improved stakeholder communication, etc.

Progress will be impeded if SMEs do not start viewing themselves as an element of a broader dynamic system that includes business partners and customers, governmental and financial institutions, academia, other organisations and society in general (Figure 1).

Figure 1. A dynamic system to improve environmental performance

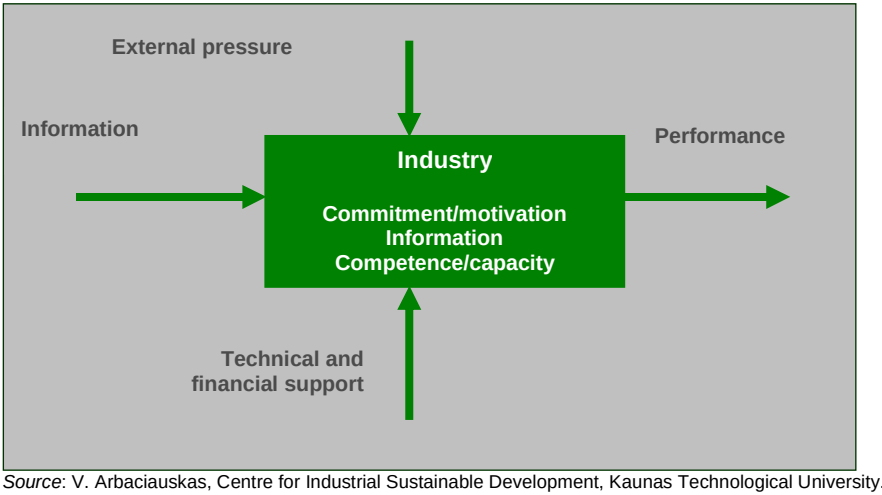


Source: V. Arbaciauskas, Centre for Industrial Sustainable Development, Kaunas Technological University.

Interactions between different actors within such a system could be used to ensure a systematic improvement of SME environmental performance through such measures as:

- Effective flows of information from external stakeholders;
- Pressure from external stakeholders to implement particular preventive measures or, more generally, to improve environmental performance; and
- Technical and financial support from external stakeholders.

Figure 2. Conditions for effective implementation of sustainable industrial development measures and necessary external factors



Source: V. Arbaciauskas, Centre for Industrial Sustainable Development, Kaunas Technological University.

Different actors can exert pressure on enterprises to improve environmental performance in many different ways:

- Governmental institutions could use a mix of policy instruments, *e.g.* environmental permitting, pollution charges, pricing policy for natural resources, public procurement practices, etc. to set targets for, and promote, environmental performance. Adapting policy instruments to SME specifics could increase their effectiveness (for instance, the regulatory pressure from public authorities would normally be less intensive on SMEs than on larger enterprises);

- Consumers could demand products that have a lower impact on the environment during the entire product life cycle;

- Investors and banks could evaluate enterprises' due diligence and consider environmental risks when providing loans;

- Suppliers and intermediary clients could require from their partners to apply preventive environmental measures systematically and to reach a particular level of environmental performance;

- Environmental or other investment funds, including those set up with donor assistance, could provide financing for projects, particularly for cleaner production; and

- Public pressure on enterprises to implement measures aimed at reducing environmental impacts could be increased.

While third party quasi-regulation may be more effective than government interventions and could be more easily accepted by the industry, there is a certain customer ambivalence towards SMEs' environmental performance, especially as far as micro enterprises are concerned. This acts as a negative stimulus for SMEs to improve their environmental performance.

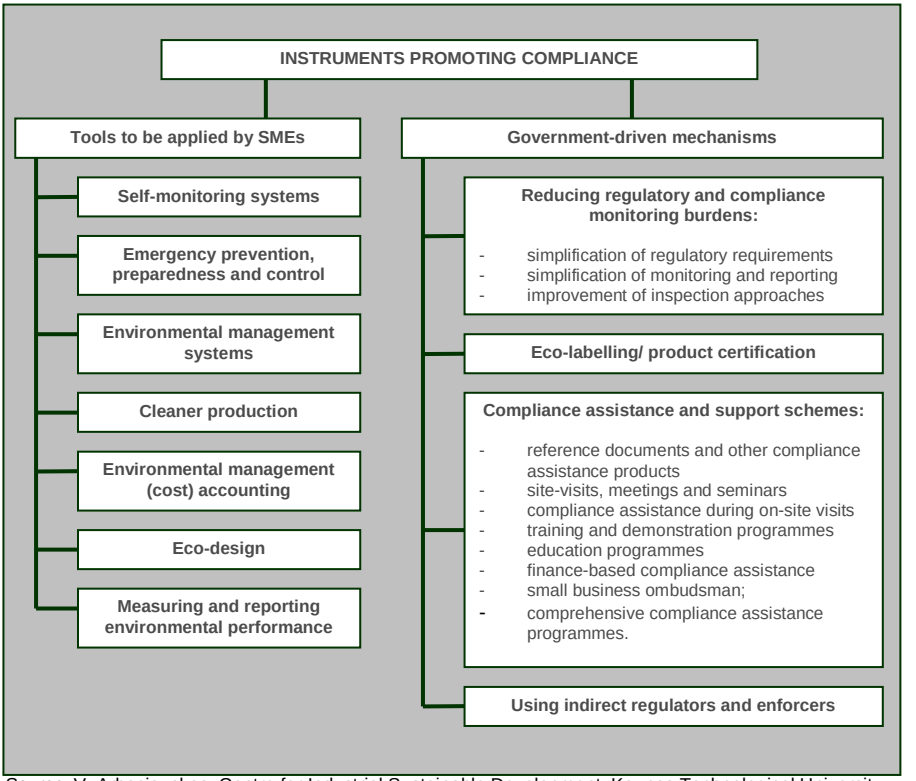
One possible way for SMEs to overcome their environmental and human capacity problems is through networking with other firms in similar circumstances. In some cases, networking is initiated or led by public or quasi-public authorities on a temporary basis with the basic goal of engaging local SMEs in better environmental management. In other cases, SMEs may decide to organise themselves to share knowledge and resources, in particular when they are faced with common problems or opportunities.

1.6 A toolbox for promoting SME environmental performance

The instruments that promote environmental compliance and performance in enterprises can be grouped in two broad categories: (i) corporate tools, applied in response to regulation or voluntarily; and (ii) government-driven initiatives (Figure 3). These can be reinforced by stakeholder support and market-based incentives. Chapters 2 and 3 present a detailed description of these two categories of tools.

SMEs will apply relevant tools proportionally to their motivation, level of information, and capacity. As mentioned above, they will typically require external incentives and support to do so. In this context, a first step for governmental authorities is to identify incentives for SMEs and assess their capacity building needs. To accomplish this task, authorities themselves need to acquire sufficient knowledge. Capacity building and support for SMEs would be the logical follow-up. Given that SMEs belonging to different sectors might have different needs, sector specific programmes should be considered.

Figure 3. Main instruments for raising voluntary compliance levels among SMEs



Source: V. Arbaciauskas, Centre for Industrial Sustainable Development, Kaunas Technological University.

A key aspect of designing programmes to promote compliance is identifying mechanisms that are effective but not overly demanding of government resources. An assessment of government capacity to design and implement such programmes, and targeted actions to develop such capacity, are obvious starting points. When developed, compliance promotion initiatives should be widely publicised.

Potential involvement of third parties should also be analysed. Their commitment and possibilities to influence SME behaviour will depend upon their own awareness, competence and access to information about SME levels of compliance and environmental results.

2. CORPORATE TOOLS AND APPROACHES

This chapter provides an overview of different tools used by enterprises to enhance compliance and environmental performance. The chapter discusses the benefits and shortcomings of these tools, as well as what makes them appropriate for use by SMEs. The effectiveness and efficiency of these tools largely depend on their impact on the overall business strategy and everyday activities - including an adequate response through adjustments in the production and overall management systems - of these firms. Typically, changes in the management system, including in information management and reporting practices, are necessary. While such changes imply costs, they can also result in efficiency gains and savings.

2.1 Review of legal obligations

The first step toward compliance is full understanding of the legal requirements that apply to a firm. Some simple tools could be used to achieve this, for instance registers of legislation that is applicable to SME activities. Such registers could contain the following information:

- Title of the applicable legal act and official source;
- Name of authorities in charge of regulation and inspection;
- Brief description of how this legal act applies to SMEs;
- Identification of necessary authorisations, licenses, consents and related records (required and obtained);
- Person(s) responsible within the organisation for compliance;
- Controls put in place in response to the legal requirement; and
- Training requirements.

2.2 Self-monitoring[2]

Periodically, environmental compliance of SMEs will need to be evaluated through self-monitoring. Self-monitoring includes:

- Monitoring of operational conditions, emissions and other impacts regulated by permits or general binding rules; very rarely, SMEs might be asked to verify ambient conditions in the vicinity of their facility;

- Record-keeping of data obtained through monitoring of any unforeseen circumstances, non-compliance episodes, corrective measures, and complaints from the general public;

- Providing reports to the competent authorities; in mandatory cases, with a specified regularity and in a duly aggregated form; and

- Other internal measures, such as assigning environmental responsibilities throughout the whole chain of management, providing basic environmental training, performing self-inspection, and implementing self-correction actions.

In OECD countries, large facilities are required to have individual self-monitoring programmes that reflect the facilities' risk for the environment and their compliance history, while smaller facilities can be subjected only to uniform requirements defined in primary and secondary legislation. The procedures for data collection, record-keeping and reporting is prescribed by law or governmental institutions.

Self-monitoring data provide a basis for verifying regulatory compliance, calculating pollution or administrative charges and, sometimes, for applying enforcement responses in cases of non-compliance. Despite the mandatory character that differentiates self-monitoring from voluntary environmental management systems (EMS), self-monitoring serves both public and private interests. Its primary goal is to ensure the earliest possible response to any environmental problem that might occur because of malfunctions in production

[2] Detailed recommendations on self-monitoring organisations are provided in the *Technical Guide on Environmental Self-Monitoring in Countries of Eastern Europe, Caucasus, and Central Asia* (OECD, 2007).

processes and, at the same time, to reduce public spending on governmental compliance monitoring.

For the regulated community, reliable data on emissions and their environmental impact can be significant from an economic viewpoint. For example, such data can help to better identify and reduce environment-related costs (that can be as high as 30% of operational costs in some sectors), and minimise environmental liabilities. Disclosure of facility-specific data and their comparison between enterprises within the same industrial sector, or with international benchmarks, can further indicate where cost savings are possible. Furthermore, access to other companies' facility-specific data can build trust within industries that the government is targeting to ensure a level playing field.

Finally, facility-specific data can help citizens to take individual decisions that affect not only their health but also economic well-being, such as where to buy property. While there are many other benefits of self-monitoring, they will be harnessed only if its results are actually used by stakeholders in decision-making processes. Data collection only for the sake of data will lead, most likely, to an erosion of the self-monitoring system's value.

2.3 Self-inspection

Self-inspection has considerable potential for ensuring environmental compliance of SMEs. Briefly, this entails a SME manager or staff applying a pre-set checklist (usually tailored to different industry sectors) to determine if the enterprise is achieving a basic level of environmental good practice. The aim is to ensure an acceptable level of regulatory compliance and good environmental behaviour as opposed to continuous improvement and excellence. In order to minimise regulatory burden and motivational fatigue, the list is confined to a limited range of issues (for example, the top four pollution issues in a particular sector).

Box 1. Possible procedure for self-inspection

Self-inspections should be performed by facility personnel. The facility manager at each site should designate the staff members responsible for performing self-inspections. An inspector need not be an environmental professional, but should complete a self-Inspection training course and should accompany an experienced inspector on at least one inspection prior to conducting self-inspections.

The individual(s) conducting self-inspections should:

Review the previous self-inspection report;

Review the facility's self-inspection checklist;

Observe each area at the facility where environmentally sensitive activities are performed;

Write an inspection report consisting of the inspection checklist and a brief narrative description of any deficient items (including those corrected during the inspection);

Inform the facility manager of all deficient items as soon as possible; and

Deliver a copy of the inspection report to the facility manager and deposit a copy of the report in the appropriate file at the facility.

The person performing self-inspections should use the standard checklists developed by the Ministry of Environment or a facility-specific checklist that has been reviewed by environmental authorities and approved by the facility manager. A self-inspection checklist will cover priority environmental issues in terms of eventual concerns and conditions on-site. Comments may be necessary to clarify these conditions. This log is to be completed weekly by facility managers or their designated inspectors. Each area is to be inspected for the listed concerns and any other indicated problems, deterioration, or malfunction. Areas with problems should be marked and both the problem and the corrective action should be described in the comment box.

The facility manager is responsible for ensuring that all deficiencies identified in self-inspection reports are promptly corrected.

Source: OECD (2005), Technical Guide on Environmental Self-Monitoring.

SMEs in the printing industry in Minnesota(United States) offer a good example of self-inspection use. Here, printers are given limited statutory protection from enforcement action in order to encourage them to self-inspect and to report results to the regulator. Participating firms are also awarded a "green star" on the completion of an audit. In addition, the printing industry association has taken the approach a step further by providing auditing services to its members in order to develop site-specific compliance plans. SMEs that fail to commit to the plans are removed from the scheme. A crucial incentive to participate in the self-inspection programme is a letter sent by the regulator

implying that non-participants will have high priority for inspection and, in the event of breach, enforcement action. In Massachusetts, SMEs are further encouraged to conduct and take self-inspection seriously by making the firms' owners or managers personally responsible for complying with environmental regulations.

2.4 Emergency prevention, preparedness and response

Some environmental impacts (and, respectively, liabilities) are not linked to normal operation, but result from accidents. In this regard, SMEs might present a particular risk since they are often located in or near populated areas where injuries and deaths could result from a chemical accident. SMEs of concern are those that produce, use or handle chemicals in quantities or under conditions that could pose a risk to workers on-site, the surrounding community, property or the environment.

Box 2. The three core components of emergency management

The three core components of an emergency management cycle include:

Prevention: The minimisation of the likelihood that an accident will occur.

Preparedness and mitigation: The mitigation of the consequences of accidents through emergency planning, land-use planning, and risk communication.

Response: Limiting adverse consequences to health, environment and property in the event of an accident. The response includes actions needed to learn from the experiences of accidents and other unexpected events (follow-up) in order to reduce future incidents (prevention).

Studies, reviews of accidents, and the results of inspections or audits in OECD countries indicate a variety of problems occurring in SMEs that could lead to accidents. These may include: lack of a risk or hazard evaluation; lack of documentation on process design; inadequate operating procedures; obsolete equipment; lack of maintenance; insufficient labelling of chemicals; and understatement of risk. This may indicate that in certain cases regulatory and voluntary programmes may not have been fully effective in reaching all SMEs and conveying to them the importance of taking safety precautions.

The main driver for companies to prepare contingency plans for preventing, mitigating and controlling environmental and health damages is legislation (*e.g.* in the United States, the Emergency Planning and Community Right-to-Know Act was approved in 1986). The environmental and safety regulatory regimes that have emerged in various countries and regions differ greatly in the methods they propose for achieving their objectives, and can range from highly regulated prescriptive regimes to more flexible systems. Very often, companies are required to do chemical emergency planning (see Box 3) and reporting, and disclose toxic releases, as well as notify authorities immediately of accidental releases and submit a follow-up emergency report.

Box 3. Typical content of emergency plans

Companies could address the following when defining an emergency plan, as suggested in ISO 14004:

- Emergency organisation and responsibilities;
- A list of key personnel;
- Details of emergency services (*e.g.* fire department, spill clean-up services);
- Internal and external communication plans;
- Actions taken in the event of different types of emergencies;
- Information on hazardous materials, including each material's potential impact on the environment, and measures to be taken in the event of accidental release; and
- Training plans and testing for effectiveness.

Major accidents have prompted the development of international instruments. In the 1970s, a major accident led to the adoption of legislation in Europe (the Seveso Directive) aimed at the prevention and control of major accidents involving hazardous substances. The Seveso Directive (and subsequent amendments) required that companies meeting certain criteria establish an accident prevention policy, safety management system and reports, and an emergency plan. Another example is the Helsinki Convention on the Transboundary Effects of Industrial Accidents, which establishes a notification system and a regulatory framework for participating countries.

Internationally, a number of sector-specific codes and guidelines are available. For example, companies producing or handling chemicals and hazardous substances can use the *OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response.* This detailed document offers guidance to industry as well as to governments and communities. Since it is recognised that the primary responsibility for the safety of hazardous installations rests with the owners and operators of such installations, a large part of the Guiding Principles is devoted to identifying industry's roles and responsibilities (OECD, 2003). Other examples are provided in the box below.

Box 4. Emergency preparedness in the transportation sector: examples from different OECD countries

The Transportation Community Awareness Emergency Response is a voluntary effort in North America that involves chemical manufacturing, transportation, distribution and emergency response industries, and the government (www.transcaer.org). Its goal is to assist communities that are near major transportation routes by planning, preparing, assessing, and revising their hazardous materials emergency response plans. The programme's managing group develops manuals and other tools to help implement the plans at the regional and state level. As an incentive, the programme gives awards to companies and personnel who support the programme.

The Safety and Quality Assessment System is a programme of the European Chemical Industry Council that offers a Europe-wide system to help companies select logistics partners that meet its high safety requirements (www.sqas.org). To be considered as a good transporter, a carrier must meet a number of conditions relating, for example, to equipment, management, training of staff, and response times in the event of an emergency.

The Transport Accident Information and Emergency Response System (TUIS) (www.fcio.at) was established by Austrian and German chemical companies in the 1980s and formed the model for the Europe-wide International Chemical Environmental Programme.

Source: www.transcaer.org, www.sqas.org, www.fcio.at

Also, emergency prevention relies on voluntary codes, which enterprises can use as a tool for ensuring regulatory compliance, and as a safeguard against "over-regulation" by legislators. For example, the International Chamber of Commerce has included emergency preparedness and response in the 16 core principles of its Business Charter on Sustainable Development (www.iccwbo.org) The CERES (Coalition for Environmentally Responsible Economies) Principles require signatories of the Charter to conduct systematic self-evaluation of their environmental progress and produce a publicly available annual report.

Box 5. Examples of issues addressed in CERES reports: emergency preparedness

Does your company have trained personnel and equipment capable of handling chemical emergencies that your plants might experience, including those that might involve radioactive materials?

Does your company conduct training exercises with fire-fighters and rescue teams in all communities where research and development and production facilities are located?

Does your company keep local emergency responders informed of risks created by, or chemicals used by, your operations?

Does your company proactively seek the advice and counsel of independent community groups (*e.g.*, through newsletters, regular meetings, open forums, or community oversight committees) regarding possible risks posed by your operations?

Source: CERES, www.ceres.org

In recent years, also the role of communities in the emergency planning and response process has become more prominent. As the case for corporate transparency gains ground, corporate environmental, health, and safety reports increasingly include information about community involvement in environmental and emergency management. The involvement of communities and other stakeholders in accident prevention and response is likely to increase in the future.

2.5 Training in enterprises

Environmental training in enterprises is generally related to environmental health and safety and environmental management systems. These matters are in practice closely related, but enterprises may choose to approach them in different ways.

First, in most OECD countries training employees to prevent and handle emergencies is mandatory. Under environmental and occupational health and safety (OHS) regulations in most countries, employers must train their staff with the purpose of protecting their health and safety, and that of the local community. For example, EU directives require employers to provide safety training. In the area of chemical substances, employers must ensure that workers and/or their representatives are provided not only full information on the hazardous chemical agents present at the workplace, but also with "training and

information on the appropriate precautions and on the personal and collective protection measures that are to be taken".

Mandatory regulation in some cases specifies the technical requirements (*e.g.* safety issues) to be addressed in a training course but does not specify how to design or develop, let alone deliver or evaluate, training. Some companies, which are developing training activities, have the option to seek accreditation through national or international bodies that certify health and safety training.

Training activities that relate to environmental management areas are mostly voluntary and focus on achieving both compliance with environmental legislation and internal environmental goals (Table 2). Training programmes depend on the characteristics and goals of the environmental management system (EMS) of which they may be a part. They typically have the following elements (i) identification of employee training needs; (ii) development of a training plan to address defined needs; (iii) verification of conformity of training programmes with regulatory/organisational requirements; (iv) training of target employee groups; (v) documentation of training received; and (vi) evaluation of training received.

Table 1. Examples of training when implementing an EMS

Type of Training	Audience	Purpose
Compliance	Employees whose actions can affect compliance	To ensure regulatory and internal training requirements are met
Skills enhancement	Employees with environmental responsibilities	To improve environmental performance in specific areas of the organisation, *e.g.* operations, research and development, and engineering
Raising awareness of the strategic importance of EMS	Senior management	To gain commitment to and alignment with the organisation's environmental policy
Raising general environmental awareness	All employees	To gain commitment to the organisation's environmental policy, objectives, and instill a sense of individual responsibility

A number of potential benefits motivate companies to implement environmental training. By training employees, managers can promote not only better and safer environmental practices for the workforce itself, but also have a positive effect on business partners and local communities. By enhancing employees' awareness of environmental matters, companies can also improve their motivation. Training encourages employees to care about their company's environmental record. Employees who are aware of their company's environmental programmes and technologies are more likely to develop a sense of pride about working in that particular company. Training activities can help improve an organisation's culture by removing uncertainties about environmental issues.

There is little objection in principle in enterprises to training staff to deal with environmental issues. However, costs are an issue. The isolation in which environmental, health and safety units often operate could be a further impediment, since a consequence of this is that these units usually have little leverage with their management. This can in some cases lead to reduced access to resources, and insufficient authority to convince management about training needs.

Moreover, management literature suggests some lessons can be derived from "frequently made mistakes" that tend to reduce the effectiveness of environmental training. One of these apparent mistakes is unfocused training activities that lack a clear link to the trainees' tasks. For this reason, training needs must be assessed carefully at the beginning of the process. Another common mistake is to conduct training without keeping any formal records of the activities, results and (particularly) participants' feedback that would allow the company to improve future training activities.

2.6 Environmental management systems

An environmental management system (EMS) provides the internal framework necessary to control an enterprise's environmental impacts and to integrate environmental considerations into business operations. Having such a system in place should help to assure stockholders, employees and the community that the enterprise is actively working to protect the environment from the impacts of its activities.

In addition to improving environmental performance, instituting an environmental management system can provide economic benefits to companies through reduced operating and insurance costs, improved energy and resource conservation, reduced compliance and liability charges, improved access to capital, improved customer satisfaction, and improved community and public relations. In the EU, a questionnaire was designed to help enterprises quantify the benefits and costs of implementing an EMS.

The aim of an EMS is to help an organisation "achieve its environmental goals through consistent control of its operations, just as internal accounting controls provide intrinsic assurances that financial management systems are functioning well" (US EPA, www.epa.gov). Enterprises that adopt an EMS do so for a variety of reasons. Whatever the specific goals, the assumption behind the implementation of an EMS is that better environmental management will improve overall business performance. While an EMS may indeed improve environmental performance, it can also mislead the public into thinking that certified companies are performing well when in fact they continue to harm the environment.

There is no generally accepted standard for what an EMS should aspire to achieve in terms of environmental performance. According to the United Nations Environment Programme (UNEP), an EMS is "a problem-identification and problem-solving tool, based on the concept of continual improvement that can be implemented in an organisation in many different ways, depending on the sector of activity and the needs perceived by management" (www.unep.org). The basic aim of an EMS is to develop a cycle for continuous improvement with involvement of all employees.

The major elements of an EMS include the identification of significant environmental impacts and aspects, development of an environmental policy, setting objectives and targets, implementing environmental programmes to achieve these objectives, monitoring and measuring the programmes' effectiveness, correcting problems, and reviewing the system to improve overall environmental performance. An EMS can be formal (*i.e.* be certified according to international standards such as ISO 14001 or EMAS – see Box 6) or informal (*i.e.* non-certified), sometimes called "performance-based" systems.

Box 6. Examples of international environmental management standards

ISO 14000 series

ISO 14001 is the main international standard for the design and content of an EMS. Developed under the auspices of the International Organization for Standardization (ISO), the standard was negotiated in the early 1990s and finalised in 1996. It is part of the ISO 14000 family of standards, which is a set of generic tools for developing, implementing, maintaining and evaluating environmental policies and objectives. The family contains standards for environmental management systems, environmental auditing, environmental performance, evaluation, environmental labelling and life cycle assessment (ISO, 1996). ISO 14001 requires that an organisation implement a series of practices and procedures that, when taken together, constitute an environmental management system. In addition to ISO 14001, the ISO 14000 series provides guidance on a broad range of environmental management issues. However, ISO 14001 is the only standard in this series which can be used to achieve registration by external certification bodies. These bodies are established at national level, according to national auditing standards. External certification has made ISO 14001 the tool of choice for enterprises whose objective is to use an EMS for market access or as a stakeholder-signalling device, and for signalling to regulatory bodies.

Despite its growing acceptance, ISO 14001 has a number of limitations. For example, it requires public disclosure only of a company's environmental policy and not its performance data. Without adequate disclosure, auditors and the general public cannot easily verify company claims. In addition, ISO does not demand compliance with applicable laws and regulations – only a "commitment" to comply. Most important, continuous improvement is defined as an improvement in an organisation's EMS, not in its environmental performance.

EMAS

The European Union's Eco-Management and Audit Scheme (EMAS) is a management tool for companies and other organisations operating in the EU and the European Economic Area to evaluate, report and improve their environmental performance. Available since 1995, EMAS was originally restricted to companies in industrial sectors. However, since 2001, EMAS has been open to all sectors, including public and private services. Like ISO 14001, EMAS provides an opportunity for companies to receive an external "seal of approval" associated with EMAS registration. At the same time, two EMAS requirements – the provision of an environmental performance statement and making information publicly available – are not part of ISO 14001. Moreover, the audit required by ISO 14001 requires only that a company monitor the EMS against its own objectives and targets, while EMAS also requires that companies comply with relevant environmental regulations.

Source: OECD (2005) Environment and the OECD Guidelines for Multinational Enterprises: Corporate Tools and Approaches.

Sector-specific EMSs are also emerging as a way to improve environmental performance by addressing specific industry environmental impacts (Box 7). Historically, such efforts aimed only to establish general principles and codes of conduct. Increasingly, however, tools are being developed that can guide the implementation of an EMS throughout the industry.

Box 7. Examples of sector-specific environmental management systems

One of the best known sector-specific EMSs is the Responsible Care initiative of the global chemical industry. Launched in Canada in 1985, Responsible Care is currently implemented in 47 countries by the members of the International Council of Chemical Associations (ICCA), which represent some 85% of global chemical production. The Guiding Principles of Responsible Care include "continuous progress toward the vision of no accidents, injuries or harm to the environment" and to "publicly report [our] global health, safety and environmental performance" (www.icca.org).

Another industry-based effort is the "Tour Operators Initiative for Sustainable Tourism Development" (www.toiinitiative.org). Developed by tour operators, TOI is supported by UNEP, UNESCO and the World Tourism Organisation. TOI aims to create "a platform to develop ideas and projects to address the environmental, social, economic and cultural aspects of sustainable development within the tourism sector."

Yet another industry-sector based initiative, spearheaded by the World Business Council for Sustainable Development (WBCSD), stimulates research and brings together stakeholders "to see how a particular industry can better align its practices and policies with the requirements of sustainability." Like an externally-certified EMS, the sector-based stakeholder consultations aim to enhance the legitimacy of industry actions to promote sustainable development and to act as an assurance group to verify the findings. Currently, the WBCSD has seven sector projects: (i) Cement Sustainability Initiative; (ii) Electric Utilities; (iii) Finance; (iv) Sustainable Forest Products; (v) Mining, Minerals and Sustainable Development; (vi) Sustainable Mobility; and (vii) Urban Water (www.wbcsd.org).

Source: OECD (2005), Environment and the OECD Guidelines for Multinational Enterprises: Corporate Tools and Approaches

In principle, an EMS enables companies to tackle environmental issues systematically thus helping to ensure a continuous improvement of environmental performance. In practice, many organisations implement certified EMS because their customers require it, or because it increases their chances of gaining new customers. Some organisations also get a certificate as a strategic move since they may need such a certificate in the future.

To ensure that an EMS is effective, EMS programmes, procedures, structure and responsibility have to be integrated with the overall management system of the enterprise. In addition, the EMS should be based on preventive approaches. Integration of cleaner production (described in the next section) and the EMS is particularly important in this regard. A limiting factor for the effectiveness of an EMS can be too much involvement of consultants in EMS implementation. In such cases, there is a risk that the EMS will not fit in with the overall management system and will be ineffective.

Particularities of implementing an EMS in SMEs

In contrast to larger enterprises, implementing an EMS in SMEs is often not feasible from an economic perspective, not to mention the limited human resources that are available to SMEs. The cost burden for adopting an EMS is illustrated in Table 2, which presents implementation costs[3] for EMS implementation in accordance with ISO 14001 in Swedish SMEs.

Table 2. Implementation cost for ISO 14 001 in Swedish SMEs

Enterprise size	Certification cost (% of turnover)	Total implementation cost (% of turnover)
Less than 19 employees	0,42	2,7
20-49 employees	0,11	0,9
50-110 employees	0,05	0,3

Source: European Commission (2002), European SMEs and Social and Environmental Responsibility, Observatory of European SMEs, No. 4.

One way to reduce financial costs for SMEs that want to adopt an EMS is to implement an informal EMS, *i.e.* implement the key elements of an EMS to ensure improvement of environmental performance, but without formal certification/registration. For many SMEs this approach could be appropriate, because market pressure on SMEs to have a certified EMS is still limited, particularly in the transition economies. Joint EMS certification could also be a way to reduce certification costs for SMEs, as illustrated by the example from the Hackerfors industrial district in Sweden.

[3] The cost of setting up an EMS depends on the size of the organisation and on its activities. Financial resources spent on setting up an environmental management system, including external consulting fees and associated communication and registration costs, are on average (figures do not integrate public aid): EUR 10 000 for very small companies (< 10 employees); EUR 20 000 for small companies (< 50 employees); EUR 35 000 for medium-size companies (< 250 employees); and EUR 50 000 for large companies (> 250 employees). In most EU countries, SMEs can benefit from up to 75% of public aid for the external consultancy costs. See http://ec.europa.eu/environment/emas

Box 8. Joint EMS certification for SMEs: the case of the Hackerfors industrial district in Sweden

A well-documented example of a shared EMS, where participating firms were audited and certified at the same time, included 31 companies in the Hackerfors industrial district in Linköping, Sweden. The companies in the group got certified in June 1999. Almost all of them have fewer than 50 employees and most are micro-enterprises. They are both in the service and manufacturing sectors, and operate very different kinds of businesses. The Hackerfors project has received much attention, and today there are a number of company groups in Sweden that work with a shared EMS. Some of these have completed group certification or are planning to do so in the near future. In the Hackerfors industrial district, the SMEs save money not only on EMS certification and registration costs, but also through common waste management systems, co-ordinated transport (30% reduction of transportation costs to/from the area), and by sharing workforce, materials, offices and security services. Also, the companies negotiate jointly with electricity suppliers and so can get a better price than by negotiating individually. In addition, the companies have jointly installed district heating in the area.

Source: I. Belmane, C. Dalhamamar, V. Arbaciauskas (2002), Environmental Management, Lund.

When adopting an EMS, another way SMEs can reduce implementation costs and human resources needs is to apply a simplified methodology based on the so-called "eco-mapping" tool[4]. This methodology was developed within the framework of INEM – the International Network for Environmental Management – back in 1996. Eco-mapping has spread rapidly, and guidelines for its use have now been translated into 12 languages (see www.ecomapping.org). This methodology for simplified EMS implementation in SMEs has been tested in several EU countries, including the Baltic states.

Eco-mapping is presented by its authors as a visual and practical tool that helps SME managers and employees to analyse and manage environmental performance. It involves several steps, including:

- Assessment of the urban environment in which the company operates;
- Analysis of material flows and resources used by the company;
- Seeking feedback from employees about areas where environmental action is needed;

[4] See http://europa.eu.int/comm/environment/emas/index_en.htm

- Production of several eco-maps that visually reflect water, soil, air, dust, odours, noise, energy, waste, and risks; these maps are supported by documents, such as permits, invoices, consumption data, technological specifications; in certain situations, visual inspection is supported by measurements (*e.g.* indoor concentration of pollutants);

- Integration and organisation of information;

- Development of an environmental action programme; and

- Reporting.

Eco-mapping is an easy way for SMEs to identify environmental aspects of their activities. The methodology provides clear guidance for implementing particular EMS elements and includes precise forms to be filled out by companies, thus avoiding unnecessary information. It enables small enterprises to reduce EMS documentation to just 10 pages.

2.7 Cleaner production

Cleaner production (CP) is an approach to environmental management focused on preventing pollution, reducing resource use and generally minimising environmental impact within existing technological and economic limits. It is a broad term and encompasses, or is identical to, what some countries and institutions call “pollution prevention” or “eco-efficiency”.

An international programme of cleaner production was launched in 1989 by UNEP’s Division of Technology, Industry and Economics. The programme has since gained widespread acceptance around the world as means for assisting companies in improving their environmental performance. By 2002, a CP network had developed that included more than 100 Cleaner Production Centres (a joint UNEP/UNIDO undertaking) operating in over 40 countries. The Centres exchange information and build skills on CP techniques and experiences, often working as consultants to governments, especially in co-operation with technical bodies. CP and related initiatives have been promoted by a number of OECD governments, for instance by Norway.

CP assists companies in their specific efforts to design and operate industrial processes and to develop and produce products and services in ways that increase eco-efficiency. CP methodology can be used as part of stand-alone projects or to achieve particular objectives and targets set by an EMS. CP is one way to meet the "continuous improvement" requirement of ISO 14001 and other EMS.

Unlike an EMS, which entails creating a framework for the management of all environmental aspects and issues of a company's activities, the CP approach generally entails implementing a specific project to improve environmental performance. For many companies (especially SMEs), a project is an easier way to begin managing environmental performance than the implementation of an entire EMS.

The realisation of benefits, both financial and environmental, through CP projects can build confidence in the value of investing in an EMS. At the same time, companies that have already implemented an EMS can utilise the CP framework to help set specific, project-level targets and objectives, such as reducing waste or increasing resource efficiency. CP is particularly important in developing countries and transition economies due to the relatively high material and energy intensities of their enterprises.

The main condition for successful CP application is the establishment of framework conditions that provide incentives for enterprises to implement preventive measures. CP implementation could also be promoted by including formal requirements in environmental permits to conduct regular CP assessments or by establishing schemes to finance CP investments. CP implementation will not solve all environmental problems. Pollution control technologies will always be required. However, the pollution control equipment required for minimising impacts to the environment can be significantly reduced by cleaner production. A major and essential part of any effective CP strategy, however, is based on prevention(see Box 9).

Box 9. Prevention practices used in a cleaner production strategy

Good housekeeping: making appropriate managerial and operational provisions to prevent leaks and spills (such as preventive maintenance schedules and frequent equipment inspections) and to enforce existing working instructions (through proper supervision, training etc.).

Input substitution: substituting input materials with less toxic or renewable materials, or with adjunct materials (for instance lubricants, coolants, cleansing agents etc.) that have a longer service life.

Better process control: modifying working procedures, machine instructions and process record keeping in order to run processes at higher efficiency and lower waste and emission generation rates.

Equipment modification: modifying the (existing) productive equipment and utilities - for instance through addition of measuring and controlling devices - in order to run the processes at higher efficiency and lower waste and emission generation rates.

Technology change: using appropriate technology, processing sequences and/or synthesis pathways in order to minimise waste and emission generation during production.

Product modification: changing product characteristics in order to minimise the environmental impacts of the product during or after its use (disposal) or to minimise the environmental impacts of its production.

Using energy efficiently: energy is a very significant source of environmental impact. The consumption of energy sources may result in effects on land, water, air, and biodiversity, as well as in the production of large quantities of solid wastes. The environmental impacts from energy use can be decreased by improved energy efficiency as well as by using energy from renewable sources, such as solar and wind energy.

On-site recovery/reuse: reuse of waste materials in the same process or for another useful purpose in the company.

Source: Staniskis J., Stasiskiene Z., Arbaciauskas V. (2001), Introduction to Cleaner Production Concepts and Practice, Kaunas, Technologija.

Several donor projects in transition economies of Eastern Europe, Caucasus, and Central Asia (EECCA) have been devoted to cleaner production. The most recent one, implemented with support from the European Commission, covered Georgia, Kazakhstan and Moldova. The project analysed framework conditions for cleaner production and identified the key obstacles in cleaner production promotion, in particular the lack of incentives – legal, societal and, most important, economic. In addition, the project produced several case studies and a practical manual on cleaner production tools, as well as strengthen capacity in Cleaner Production Centres.

2.8 Environmental management (cost) accounting

Environmental management accounting (EMA) could be defined as a procedure with which a company tries to calculate all the internal costs of environmental pollution. A high percentage of these costs are hidden under non-environmental cost headings and their systematic detection demands much determination to overcome organisational resistance. EMA's main focus is on minimising the private – as opposed to the social – costs of pollution. However, properly applied EMA may result in considerable societal environmental gains as well. The investment necessary for an integrated preventive technology offering a long-term solution is usually higher than an end-of-pipe solution. Detecting and calculating the real costs of environmental pollution can easily make the preventive technology more attractive, even on a purely economic basis.

When discussing environmental costs, it is important to differentiate between the costs of environmental protection and environmental pollution. The former costs are normally obvious and apparent in the usual accounting system, while the latter tend to remain invisible. EMA takes account of *all* environmental costs – not only of waste disposal but also of producing waste, including the cost of materials that were purchased but not used for production. Every emission to air, water or land from production is considered a wasted material input.

The costs of environmental pollution for companies are much higher than most people would suppose. This is due to the fact that the contemporary accounting system only displays a small fraction of the environmental costs: the expenses of disposal, cleaning and penalties in principle. These can be perceived as only the tip of the iceberg. In uncovering hidden costs, EMA highlights ways to improve efficiency and reduce pollution at the same time.

There are different ways to utilise EMA. For example, it can be used to assess the environmental costs associated with producing a particular product, or with a particular manufacturing process. In standard financial management accounting systems, environmental costs are not separated out – they are assigned to general overheads. By accounting separately for the full range of environmental costs, EMA allows managers to identify least-cost approaches to production, and to make better decisions about capital investment, cost allocation, purchasing, supply chain management and product pricing. This is of

particular importance for environmental management; if environmental costs are obscured, true costs of production are skewed, and this may make cleaner products seem less competitive than environmentally unfriendly products.

Companies may also select different approaches to EMA based on their available resources and past experience. For example, a company that has never tried EMA or has limited resources may choose to do small-scale case studies as a first step. Once the benefits of this approach have been demonstrated, the company can move on to more comprehensive projects, perhaps setting up an EMA database in parallel with the existing management accounting and information systems, or integrating EMA information into existing systems. The approach chosen will depend on the organisation's existing systems, all of which should be used to support EMA and, in turn, may be improved by EMA.

The uptake of EMA by companies is on the rise, especially by large companies seeking to gain greater efficiencies in supply chain management. Commissioned by the US EPA, the Tellus Institute is developing a strategic plan for promoting EMA among US companies and their international strategic partners. The plan will focus not only on preventing pollution but also on newer EMA end-uses, such as improving supply chain management and environmental management systems (www.tellus.org).

However, there are several obstacles to effective implementation of EMA, including the tendency of both regulatory and voluntary initiatives to favour end-of-pipe approaches to improving environmental performance. Another obstacle is the lack of international standards for EMA methodology, compounded by the fact that there are no international standards for financial cost accounting.

2.9 Eco-design

Generally, the concept of eco-design (also known as "design for environment – DfE) goes beyond compliance issues as it looks at environmental aspects in the entire life cycle of a product, *i.e.* it seeks to reduce the total environmental load a product causes in its entire life cycle. In a theoretical model, the life cycle of a product includes the entire production chain from the extraction of raw materials to assembly and packaging, as well as the distribution and selling of the product,

and its consumption and final disposal. However, in practice, it is often impossible to clearly define all phases of a product's life cycle in detail and so it is often simplified to include three phases: production (including distribution), consumption, and disposal.

In the context of environmental compliance promotion in SMEs, product oriented aspects are particularly important in terms of making changes to products in the design phase so that harmful materials can be substituted and particular emissions or waste can be eliminated and/or reduced. The limiting factor for application of this concept in SMEs is that not many SMEs are actually involved in designing products. Nevertheless, eco-design could be a valuable tool to increase environmental performance for some SMEs.

When initiating an eco-design project, it is important to analyse the product and its environmental problems in order to have a clear understanding of what can be improved. This involves reviewing the product's life cycle to identify environmental issues that could be the focus of an eco-design project. The life cycle should then be investigated to determine where the major environmental loads occur, what relevant environmental legislation and policy instruments apply, and what role the actors in the product's life cycle (*e.g.* suppliers, sub-suppliers, distributors, etc,) play with regard to environmental issues. The result of this initial product review is a list of environmental issues that could be improved through an eco-design approach.

The next step is to prioritise the identified environmental issues according to their importance. A number of factors should be considered, for example:

- The severity of the environmental load;
- How environmental legislation and policy instruments affect or may affect business;
- How important the environmental issue is considered to be by customers and other stakeholders in the product's life cycle;
- How easily a solution to the problem can be found; and
- The potential for cost savings.

There is no specific eco-design engineering methodology. Solutions to environmental problems linked to design criteria can only be found through traditional product development. It should be noted, however, that eco-design solutions can be found not only in the company's product design or engineering department. Often co-operation between the design, engineering, manufacturing and marketing or sales departments is the most effective way to find good solutions to environmental problems.

It will always be necessary to monitor how well a product's environmental characteristics correspond with market demands and environmental needs and requirements. Eco-design should be seen as a regular part of a company's new product development and should therefore be integrated with product development activities. One way to achieve this is to make the process of product development a part of an environmental management system.

Environmental issues identified during the initial eco-design product review can be considered as environmental aspects and named according to ISO 14001 terminology. Efforts involved in identifying significant environmental aspects for an EMS are similar to those involved in defining eco-design criteria. An eco-design management programme can be created that is responsible for initiating, verifying, revising and documenting – as well as providing training for - an eco-design approach in product development. A number of tools can be used as a further aid to the eco-design effort. The most typical are various forms of guidelines, checklists, and material lists that can support the design engineers during product development.

2.10 Measuring and reporting environmental performance

Environmental management is not a static, one-off action, but requires constant monitoring to ensure that the objectives set by the company are indeed being achieved or even surpassed. The tools and approaches that can be used to measure environmental performance include environmental management accounting (described above) and, more specifically, environmental benchmarking and performance indicators.

Environmental benchmarking is a performance measurement tool used in conjunction with improvement initiatives to measure comparative operating performance and identify best practices. The objective of environmental benchmarking is to identify "best-in-class" business processes, which, if implemented, could lead companies to better environmental performance. Benchmarking a company's environmental programme against that of another company is an effective means of assuring that it is on track for environmental improvement. If used properly, benchmarking allows companies to gauge the progress of an environmental programme and to benefit from innovative ideas for improvement. It helps companies to assess the efficiency, design, and outputs of the environmental programme, and also provides environmental managers with the opportunity to share the successes and failures of integrating the environmental programme into operations.

Application of benchmarking involves four basic steps:

- Understand in detail the company's own processes;
- Analyse the processes of others;
- Compare the company's own performance with that of others;
- Implement the steps necessary to close the performance gap.

Benchmarking involves looking outward to examine how others achieve their performance levels and to understand the processes they use. In this way benchmarking helps explain the processes behind excellent performance. Best practice examples are frequently found outside the industry sector in which the company operates. Thus, it is neither necessary nor desirable to confine a benchmarking exercise to competitor companies. At its most effective, benchmarking is an integral part of an ongoing improvement process with the goal of keeping abreast of ever-improving best practice.

Environmental indicators help measure a company's environmental performance and, over time, improvements in that performance. The Global Reporting Initiative (GRI) Guidelines recommend that companies' sustainability reports contain, among other sections, one on environmental performance indicators. The GRI framework represents a multi-stakeholder agreed series of indicators, covering the economic, environmental and social dimensions of

sustainability. The GRI's environmental indicators concern an organisation's impacts on living and non-living natural systems, including eco-systems, land, air and water. Included within environmental indicators are the environmental impacts of products and services; energy, material and water use; greenhouse gas and other emissions; effluents and waste generation; impacts on biodiversity; use of hazardous materials; recycling, pollution, waste reduction and other environmental programmes; environmental expenditures; and fines and penalties for non-compliance.

Box 10. Examples of environmental performance indicators suggested by GRI

Environmental compliance: incidents of and fines for non-compliance, with all applicable international declarations/conventions/treaties, and national, sub-national, regional, and local regulations associated with environmental issues.

Water resources use: total water use; significant effluent discharges to water by type; water sources and related ecosystems/habitats significantly affected by use of water; annual withdrawal of ground and surface water as a percent of available water in the local water sources; total recycling and re-use of water.

Land use and ecosystem impact: location and size of land owned, leased, or managed in biodiversity-rich habitats; total amount of land owned, leased, or managed for production activities or extractive use; impacts of activities and operations on protected and sensitive areas; changes to natural habitats resulting from activities and operations and percentage of habitat protected or restored; and business units currently operating or planning operations in or around protected or sensitive areas.

Source: Global Reporting Initiative, http://www.globalreporting.org

One of the major innovations in performance evaluation through indicators, promoted by the ISO 14031 standard, is that it does not focus only on operational performance indicators (OPIs), but also takes into account two other categories: management performance indicators (MPIs) and environmental condition indicators (ECIs). This is an important logical step as the load on the environment (OPIs) generates changes in its state (ECIs), and decreasing these requires taking certain measures (MPIs).

Indicators can be expressed in absolute, relative, indexed, and aggregated form. The most illustrative and useful indicators for improving decision-making are relative indicators, *i.e.* data or information compared to another parameter (*e.g.* production level, time, location or background condition), such as tonnes of contaminant emitted per tonne of product manufactured, or tonnes of contaminant emitted per sales volume.

Enterprises publish environmental reports where they indicate the achievements and problems in the environmental area. The reporting is often voluntary and is driven by stakeholder pressure on companies to disclose environmental information. The number of enterprises reporting on environmental issues is increasing.

Producing an environmental report can benefit an enterprise in a number of ways. Making the report can help to better understand - and therefore better manage - environmental impacts, improve performance, and minimise potential risks. Insurers, regulators, investors, customers and neighbours are likely to react more positively to companies that show they are aware of these issues and act to improve their environmental performance. Moreover, development of environmental reports motivates enterprises to analyse their activities and helps them to identify opportunities for improving environmental and economic performance. At the same time, environmental reporting contributes to raising public awareness of environmental issues. In the long term, to the extent that environmental reports use common reporting criteria and measurements, it will be possible for third parties, such as environmental groups, to compare relative environmental performance, to publicise the results, and thereby to push "bad performers" to improve their performance.

Some companies may be concerned that reporting will expose areas where they do not yet perform particularly well. However, other companies from all sectors of industry have chosen to report voluntarily. Many of these companies argue that transparency can improve relations with stakeholders and reduce the chance of misunderstanding.

An environmental report could include a number of issues, such as: general facts about the company; its main environmental impacts and environmental policy; environmental targets set, and performance indicators used, by the company; description of the company's management systems; legal compliance; and a list of contact points if there are more questions about the environmental efforts of the company.

The environment-specific reporting process will be part of the company's internal management procedures. This process will comprise five main steps: (i) defining the objectives of reporting; (ii) outlining the report; (iii) drafting the text; (iv) distributing the report; and (v) collecting and analysing feedback.

In the absence of commonly accepted standards, the scope and content of environmental reports are determined solely by companies, and this may lead to problems of credibility and comparability. In order to address this problem, the Global Reporting Initiative (GRI) was founded in 1997 by the US-based Coalition for Environmentally Responsible Economies (CERES) and the UN Environment Programme (UNEP). The GRI has as its mission "to develop and disseminate globally applicable Sustainability Reporting Guidelines" (www.globalreporting.org). To complement the Guidelines, GRI offers indicator protocols and sector supplements (*e.g.* for logistics and transportation, tour operators, telecommunications). The GRI Guidelines constitute an information reporting framework, providing both overarching reporting principles and specific content requirements to guide companies and other organisations in preparing publicly available sustainability reports.

Furthermore, in March 2003, the UK Institute of Social and Ethical Accounting (AccountAbility) released the AA1000 Assurance Standard, which provides guidelines for the verification of published company reports, including (but not limited to) environmental or sustainability reports. The standard aims to enhance the credibility of the information that companies provide to the public. Developed via an extensive process of consultation with stakeholders, AA1000 provides a framework intended to guide good practice not only for company reports but also for environmental communication more broadly. The standard promotes an organisation's or company's commitment to:

> (i) Identify and understand its social, environmental and economic performance and impacts, and the associated views of its stakeholders;
>
> (ii) Consider and coherently respond (whether negatively or positively) to the aspirations and needs of its stakeholders in its policies and practices; and
>
> (iii) Provide an account to its stakeholders for its decision actions and impacts.

This overarching "accountability commitment" can be fulfilled by the application of three principles:

- Providing data required by stakeholders to make informed judgements and decisions, and taking appropriate actions;

- Ensuring that complete information is available about all activities, products, services, sites and subsidiaries for which the organisation or company has management and legal responsibility;

- Taking into account and responding to stakeholder concerns, policies and relevant standards.

Finally, as part of the 14000 series, the International Standards Organisation (ISO) published an environmental communication standard, the ISO 14063:2006, which recognises that:

- There are many ways to communicate environmental information;

- There are many reasons an organisation might choose to communicate environmental information;

- There is significant work being done globally on the subject of environmental communication; and

- SMEs and companies in developing countries need help to understand how to develop an environmental communication programme.

The ISO environmental communication standard attempts to address these issues. It does not prescribe how an organisation or company should communicate its environmental information, but offers guidance on what should be considered in developing an environmental communication programme, describes general approaches, and provides examples and case studies of how others have addressed these issues.

3. GOVERNMENT-DRIVEN INITIATIVES

Government authorities play the central role in establishing a policy framework that enables the application of different environmental compliance promotion methods and tools. Most important, such a framework should create incentives for enterprises to improve, at first, their knowledge of regulatory and non-regulatory environmental issues, then the level of their regulatory compliance and, ultimately, their environmental performance. This chapter gives an overview of different government driven initiatives that could help with these efforts. When backed with mechanisms that effectively deter violations, compliance promotion can entail important cost savings. In addition, it develops partnerships and raises the acceptance and credibility of regulation.

Since different actors can apply environmental compliance promotion tools, the level of governmental intervention may vary. In some cases, governments need to take the lead in designing, applying and monitoring the outcomes of a particular compliance instrument. Other instruments are for the regulated community to adopt, but competent authorities have to take particular legal and institutional measures that enable the application of such tools in enterprises. Finally, governments could stimulate increased pressure on enterprises from third parties.

3.1 Reducing the regulatory and inspection burden

In most of OECD countries, the early objectives of “deregulation” or “cutting red tape”, have recently been replaced by the better (or “smart”) regulation agenda. This means adoption of regulatory practices that target performance, cost-effectiveness, and citizens’ satisfaction through a mix of strategies and tools backed up by improved institutions. The SME sector is the main beneficiary of this process. Numerous studies show that the burden of regulatory programmes fall disproportionately on SMEs. For example, *Businesses Views on Red Tape*, which examined the costs of administrative

compliance in almost 8 000 SMEs in 11 countries, found that administrative compliance costs per employee were more than five times higher for the smallest SMEs than for the largest.

3.1.1 Simplification of regulatory requirements

Improving regulations so they are easy to understand and practical to implement by enterprises is one of the key issues while promoting environmental compliance. One of the most comprehensive programmes in this field, which has an international dimension, is the European Union's "Better Regulation" Initiative (Box 11). This initiative covers all types of enterprises, including SMEs, and many substantive issues, including environmental management. Similar initiatives are underway in other OECD countries.

Box 11. The European Union's "Better Regulation" Initiative

The "Better Regulation" Initiative is a centrepiece of the European Commission's "Partnership for Growth and Jobs" (also known as the renewed Lisbon Strategy) launched in spring 2005. Its key objective is to ensure that the regulatory environment is simple and of high quality since the regulatory framework in which businesses operate is a key factor of their competitiveness, growth and employment performance. To make sure that regulation is used only when necessary and that the burdens it imposes are proportionate to its aims, the European Commission has put a number of processes and tools in place: (i) withdraw or modify pending legislative proposals; (ii) take measures to simplify existing legislation; (iii) insure better quality of new proposals through systematic use of regulatory impact assessment and public consultation.

Source: "Better Regulation" website: ec.europa.eu/enterprise/regulation/better_regulation/index_en.htm

An important first step related to the simplification of regulatory requirements for SMEs is their involvement in the development of regulations. For example, this need is specified in the US *Small Business Regulatory Enforcement Fairness Act*. For rules that will have a significant impact on small businesses, input from affected parties is solicited and alternatives are considered, which allows minimising adverse affects on SMEs.

Some OECD countries have taken a more procedure oriented path to ensuring new legislation that takes into account administrative burden issues. This includes, for example, requiring agencies to prepare special impact statements for proposed regulations that affect small businesses. These "small business impact statements" are often required to contain, among other things, a description of any significant

alternatives that accomplish the stated objectives while minimising significant economic impacts of the proposed rule on small businesses. In conjunction with the impact statements, the above-mentioned consultative approach may be undertaken to ensure adequate representation of the views of small businesses.

Another approach to reduce environmental compliance burdens is to ensure that there is an adequate notice period before new legal and regulatory measures come into effect. By providing businesses with a longer period to reach compliance, they are given the opportunity to consider the most cost-effective means of reaching it. This increased time period might allow for obtaining expert advice where necessary. The costs of any outside assistance required to reach compliance may also be contained by avoiding a situation in which there is a sudden "spike" in demand for certain specialised services as large numbers of businesses seek to reach compliance within a very short period.

The next step is adapting environmental permitting systems to the specifics of SMEs along the following lines:

(i) Operators should be encouraged to move away from end-of-pipe techniques for reducing discharges to air or water and adopt integrated operation and maintenance solutions, including effective management techniques.

(ii) The permitting procedure should reduce the amount of information the permitting authority has to assimilate and the degree of discretion it would have to exercise in each case.

(iii) The permitting process should be transparent and easy for the operator and the general public to understand, with references to published guidance or rules for particular types of installations.

(iv) It is essential to secure public acceptance of environmental permitting systems, with the understanding that the systems are open and transparent. It is also important that operators believe that they are being treated fairly.

(v) A simplified environmental permitting system must offer broadly the same approach between sectors and over time, proportionate to the risks that are likely. It should also ensure fair treatment between operators.

(vi) Permitting conditions should, wherever possible, be consistent with business practices for a given category of installations.

There are several options for streamlining permitting systems but their simplification should be done very carefully to avoid adverse effects on the environment. A new or modified environmental permitting system should ensure proper management of environmental aspects in enterprises, particularly in sectors with high environmental risks.

One option is to reduce the information required in a permit application. To make the process of acquiring environmental permits more manageable, SMEs should have access to clear guidance on permitting procedures.

A more advanced approach is reducing the number of required permits by integrating different permitting procedures into one, as suggested in the report of the EU Best Project Expert Group and demonstrated by an example from the Netherlands (Box 12). Such integration could cover not only environmental permitting but also closely related areas, such as health and safety.

Box 12. Reduction of number of permits in the Netherlands

In the Netherlands, as a part of the government's simplification initiative, the environment ministry integrated its permitting requirements, reducing 25 different permitting systems into one. The new permitting system, which was developed in close co-operation among environment ministry staff, industry groups and local authorities, will start functioning in early 2008. Such integration makes permit application relatively complex, in particular for SMEs, as it covers many different aspects. To overcome this problem, the environment ministry is producing an Internet-based permit application form that enables enterprises to fill in only those parts of the permit application that are directly related to their particular activities. The environment ministry is also producing a user guide to make the implementation of the new permitting system more effective.

Source: EC, Directorate General Enterprises and Industry (2006), Reducing Burdens on Industry.

Also, the so-called "general binding rules" (GBR) could be developed to complement or totally replace individual permits (Box 13). GBRs may have several benefits: (i) adoption of uniform emission standards; (ii) simplified application procedure and forms, resulting in reduced bureaucracy; (iii) transparency, predictability and consistency; (iv) uniform monitoring requirements, facilitating compliance assurance; (v) no potential to distort competition within an industrial sector; and (vi) reduced costs for the regulator.

Box 13. Use of GBRs in the Netherlands

Currently, in the Netherlands, about 300 000 enterprises are subject to general environmental rules, compared to 100 000 that are required to obtain individual environmental permits. The revision of the permitting system will make it possible to reduce the number of enterprises that are required to have environmental permits to 40 000. The new system will comprise mostly nationally established requirements, with very limited room left for local or any other additional requirements. The rationale for this modification of the permitting system is that general environmental rules are more transparent and that small enterprises undertaking similar activities should operate in the same way throughout the country in order to avoid the need for individual permits from local authorities.

Source: EC, Directorate General Enterprises and Industry (2006), Reducing Burdens on Industry

In the US, self-certification is used as a means to improve and reward compliance. Enterprises that are eligible to participate in the "Environmental Results Programme" may operate according to industry-wide environmental performance standards and annual certifications of compliance. Within the framework of this programme, small businesses receive detailed compliance assistance, are able to self-certify compliance, and use common-sense performance measurements.

Such policy interventions are based on the reassessment of thresholds for certain types and levels of production where insignificant environmental impacts of individual facilities offer the possibility to move away from facility-specific environmental permits. This reduces the administrative burden on both SMEs and competent authorities and enables the latter to focus on the greatest polluters.

There are a number of practical criteria that should be met in order for GBRs (or self-certification) to become feasible: (i) a rule must cover a sufficient number of installations in a given category; (ii) rules can only apply to well-defined categories of installations that use similar, widely accepted technologies that are unlikely to change rapidly; (iii) installations within each category subject to a rule should have a relatively uniform impact on the environment; and (iv) the operators of installations targeted by a rule should be well organised so that their views are coherent and well expressed.

Furthermore, environmental permitting procedures may be simplified for companies that have implemented environmental management systems (EMS), as is the case in a number of EU countries (Box 14). This approach has proved to be effective in promoting EMS implementation and could help to increase compliance rates.

Box 14. Simplification of permitting procedures for enterprises that have implemented environmental management systems and hold EMAS registration or ISO 14001 certification

In some EU countries implementation of environmental management systems is promoted by simplifying procedures for obtaining an integrated pollution prevention and control (IPPC) permit. For example, in Italy, validity of an IPPC permit for EMAS registered enterprises could be prolonged from 5 (usual duration of IPPC permit validity) to 8 years without submitting additional permit applications. These enterprises can also use a simplified procedure for renewing their IPPC permit. In Hungary, validity of the IPPC permit for EMAS registered companies is prolonged from 8 to 10 years. In some cases, EMAS registration simplifies obtaining other environmental permits. In Italy, enterprises that have EMAS registration or ISO 14001 certification have priority for receiving water use permits for industrial purposes from water basins with limited water resources. In Luxembourg, such enterprises benefit from a simplified procedure for obtaining energy use permits and validity of these permits is automatically prolonged.

Source: EMAS, Member State Activities, http://ec.europa.eu/environment/emas/activities/index_en.htm

3.1.2 Optimising requirements related to information provision

As mentioned in Chapter 2, data collection and reporting on regulatory compliance is often legally binding for enterprises. When overly ambitious, these obligations may be associated with significant costs for enterprises. Therefore, competent authorities have to limit their requests to the most relevant parameters depending on the sector/type of activity. Information collected through monitoring and reporting should support decision making. Unnecessary data should be excluded from monitoring and reporting protocols. This is the most straightforward way to reduce the information burden.

For example, in the "Action Programme for Reducing Administrative Burdens in the EU", the European Commission proposed that the following principles should guide information requests:

- Reduce the frequency of reporting requirements to the minimum levels necessary to meet the substantive objectives of the legislation and align the frequency of reporting across different related pieces of legislation, where possible;

- Review whether the same information obligation is not requested several times through different channels and eliminate overlaps (*e.g.* a number of environmental information obligations are presently required by more than one piece of legislation);

- Require electronic and Internet-based reporting where paper based information gathering is presently required, using intelligent portals where possible;

- Introduce thresholds for information requirements, limiting them for SMEs wherever possible, or rely on sampling; and

- Consider substituting information requirements on all businesses in a sector by a risk-based approach – targeting information requirements on those operators that perform the highest risk activities.

Unfortunately, reducing reporting burdens is sometimes hard to achieve in practice, particularly because of conflicting interests of different stakeholders. Enterprises, most likely, will support any reduction of reporting requirements. But such reductions could be negatively received by citizens' environmental organisations, as happened in the US (Box 15). In transition economies, departmental interests and isolation of various governmental authorities may significantly hinder efforts to reduce reporting burdens. Therefore, to promote modifications in the reporting system, consultations with different stakeholders have to be carried out. Among other things, this would help to ensure that a reduction in reporting requirements is in line with public interests and that important environmental data are not excluded from the reporting system.

Box 15. Reduction of reporting requirements in the US

In the US, enterprises are obliged to report on pollutant releases in accordance to the US Pollution Prevention Act of 1990. In 1994, the US EPA expanded the reporting rules by doubling the number of chemicals covered. The reporting has resulted in large amounts of information available as well as significant burdens for some enterprises. In 2005, the US EPA made a modification to the reporting system that shortened the reporting forms and eliminated requirement to report on a number of substances. As a result of this modification, a number of enterprises that previously provided reports to authorities were freed from this obligation. For other enterprises, the administrative burden was reduced. It has been estimated that this modification will save 165 000 hours per year for enterprises. After a stakeholder meeting in 2004, one participant reported that his review of all of the comments to the Toxics Release Inventory (TRI) burden reduction options received through the stakeholder dialogue showed that 80% of comments were against moving forward with any TRI burden reduction that would result in less information.

Source: EC, Directorate General Enterprises and Industry (2006), Reducing Burdens on Industry, and US EPA http://www.epa.gov/tri/tridata/modrule/phase2/

The report of the EU "Best Project Expert Group" suggests that application of information technology tools could be an effective way to unify reporting obligations and to integrate reporting requirements from different governmental institutions that enterprises report to (Box 16). This could help to reduce significantly administrative burden on enterprises. However, this would require co-operation among such institutions in order to establish a clear and unified system for data collection and sharing.

Box 16. Introduction of integrated environmental reporting in Belgium

In Belgium (Flanders), an initiative was implemented to streamline environmental data reporting for all bodies that are subject to such requirements under Flemish environmental law, in parallel with an improvement of the information management systems of the Flemish environmental authorities. Within the framework of this initiative, a single form and reporting schedule for reporting environmental data to Flemish authorities were introduced. This implied legislative and regulatory reform. The necessary authorising legislation was adopted in February 2004, followed by implementing regulations in April 2004. The new system has been in force since 2005.

Under previous legislation, the same operators could be subject to data reporting obligations under as many as four different schemes: (i) effluent data under water pollution control legislation, used mainly as a basis for calculation of an annual water pollution tax; (ii) data on waste production and transport under waste management legislation, used for monitoring and planning purposes and as a basis for calculation of an annual waste tax; (iii) data on the volume of groundwater abstracted from aquifers, used mainly as a basis for calculation of an environmental levy on groundwater use; and (iv) emission data under integrated pollution control legislation, applicable to facilities with levels of emissions or energy consumption exceeding certain thresholds.

These data had to be reported to different administrations using different forms and at different time intervals and dates. Under the new scheme, most of these reporting requirements have now been integrated. Companies have to submit their data by completing a single form and returning it to a central administrative focal point once a year. From 2006, it has also become possible to submit the data electronically via a single Internet form.

Reporting requirements under this initiative have not been reduced but streamlined, so that the same data remain available to public authorities, while reducing the administrative burden of providing and collecting them. There are benefits both for business (including, but not limited to, SMEs) and for public authorities, though these benefits have not been quantified so far. Even though implementation involved administrative and regulatory reform, as well as the introduction of new systems, the measure was relatively easy to implement and seems transferable to other countries.

Source: EC, Directorate General Enterprises and Industry (2006), Reducing Burdens on Industry

In some EU countries, most polluting enterprises are obliged to develop annual environmental reports for authorities. To promote implementation of environmental systems, this reporting procedure is simplified for EMAS registered enterprises. For example, in Denmark, 1000 industrial companies are subject to compulsory environmental reporting. EMAS registered enterprises are allowed to submit an EMAS environmental report instead of a standard report. In the Netherlands, compulsory environmental reports have to be made by the 300 most polluting enterprises, but exemption is made for EMAS registered enterprises even if they are on this list. Similar practice is also used in Norway. Although these examples refer mostly to large companies, similar approaches could be used in the case of SMEs.

3.1.3 Improvement of inspection approaches

According to EU Recommendation (2001/331/EC) published in April 2001, "the existence of inspection systems and the effective carrying out of inspections is a deterrent to environmental violations since it enables authorities to identify breaches and enforce environmental laws through sanctions or other means; thus inspections are an indispensable link in the regulatory chain". Another reference model for inspection systems is presented in the Guiding Principles for Reform of Environmental Enforcement Authorities of Eastern Europe, Caucasus and Central Asia. Furthermore, practical recommendations for organising inspection operations are provided by OECD in the "Toolkit for Better Environmental Inspectorates" and the World Bank in "Good Practices for Business Inspections Guidelines for Reformers".

One of the biggest problems in inspection systems, particularly in transition economies, is corruption related to unplanned inspections and demands for bribes. To reduce cases of corruption, a system of planned inspections should be enforced. More targeted, risk-based selection of enterprises to be inspected and imposing greater accountability for inspectors could also help to reduce corruption (see Box 17).

Box 17. Impact of improving inspection procedures in Latvia

To reduce corruption in Latvia, each inspector is required to have a clear programme of inspections and provide a written report for each inspection, describing what was inspected and what the findings were. In addition, inspectorates are required to publicise the rights and responsibilities of businesses being inspected, including their right to appeal. These changes have empowered businesses to fight corruption by improving their access to information about regulatory requirements and ensuring that they have effective recourse in case of problems. The business community reports that petty corruption is much less of a problem than it was in the 1990s, and the country's score on Transparency International's Corruption Perception Index has improved significantly.

Source: The World Bank Group Private Sector Development Presidency (2006), Public Policy for the Private Sector, Note Number 308; http://rru.worldbank.org/documents/publicpolicyjournal/308Coolidge.pdf

Generally, inspections could be simplified by integrating different types of inspections and made more transparent by application of IT similarly to the simplification of permitting systems described above. An effective way to simplify the inspection process is by making it more targeted (risk-based) and avoiding inspections that are made for no reason, *i.e.* inspections should focus on activities that pose the greatest risks to the environment (Box 18).

Risk can be linked to the type of activity (*e.g.* use of particularly hazardous chemicals) or location (*e.g.* enterprise operates in an environmentally sensitive area). In cases where particular enterprises have a history of non-compliance, these enterprises could be considered as more "environmentally risky".

While reducing environmental permitting and inspection requirements for SMEs is justified in many cases, this may also have drawbacks by providing SMEs with incentives not to grow beyond thresholds that would qualify them for risk-based approaches or to break up strategically as soon as the threshold is passed.

Box 18. The Dutch and UK approaches to setting priorities

The Dutch approach

In the Netherlands, inspection planning starts by using four compliance categories: good, sufficient, medium, and bad compliance. Second, risk indicators are applied that cover aspects of public health, safety, sustainability and social factors in the absence of enforcement. On that basis the firms are categorised in four risk classes: very high, high, medium, and low, to which scores are allocated. The results are then transposed to a 2x2 matrix with risk and non-compliance on the axes. This approach allows establishing priorities and non-priorities for enforcement. A specificity of the Dutch compliance strategy is that it includes an assessment of individual legal acts with respect to possibility of compliance, enforcement and sensitivity to fraud. A negative score implies that the inspectorate should not make efforts to enforce the legislation as this would be ineffective and inefficient. Instead, the legislation is sent back to the legislator for improvement.

The UK approach

Inspections targeting priorities for facilities regulated under IPC are established in the UK on the basis of the "Operator and Pollution Risk Appraisal" (OPRA) methodology. It assesses the inherent environmental risks of processes ("Pollution Hazard Appraisal" - PHA) and the operator's ability to manage the environmental risks of processes ("Operator Performance Appraisal" – OPA).

Allocating scores from 1 (low hazard/performance) to 5 (high hazard/performance) to each attribute and separately adding up all PHA and OPA scores leads to a classification in 5 bands (A - lowest pollution hazard/best operator performance, E – highest pollution hazard/worst operator performance) which can then be allocated to a matrix on which priorities are based.

The Environment Agency's decisions about the level and nature of compliance assessment are furthermore based on "Compliance Assessment Plans" (CAPs). These are used to ensure that all requirements of permits and other regulatory approaches are checked within a defined period. In addition "Compliance Classification Schemes" (CCS) are used which classify non-compliance with permit conditions according to the potential impact on the environment.

Source: OECD (2006). *Economic Aspects of Environmental Compliance Assurance: Proceedings from the OECD 2004 GFSD (2nd-3rd December, 2004, Paris, France).*

Relying on alternatives to government inspections can yield big savings for the government and reduce the burden on businesses. Alternatives can include mandatory self-inspection and outsourcing (such as the use of licensed inspectors). In all these cases some government inspections still have to take place to backup and check on alternative inspections.

In some countries, simplified inspection procedures or reduced frequency of inspections are applied to enterprises that have implemented environmental management systems in accordance with EMAS or ISO 14001 (Box 19). The reason for inspection procedure

simplification or inspection frequency reduction is that EMAS registered companies are considered to be more transparent and manage environmental aspects in a more effective way.

Box 19. Simplification of environmental inspection procedures for enterprises with EMAS registration or ISO 14001 certification

In **Austria**, a federal law concerning EMAS implementation is in force. This law specifies that EMAS registered enterprises are subject to simplified environmental legal compliance inspection procedures. In **Luxembourg**, EMAS registration is considered when planning inspections of emissions. The **Norwegian** Authority for Pollution Control has instructed regional environmental authorities to reduce the frequency of environmental inspections in companies having EMAS registration or ISO 14001 certification. Frequency of inspections for EMAS registered enterprises is generally reduced In **Germany, the Netherlands** and **Portugal**. In these countries, controlling institutions have the right to decide on the frequency of inspections in EMAS registered enterprises.

Source: EMAS, Member State Activities, http://ec.europa.eu/environment/emas/activities/index_en.htm

3.1.4 Use of IT to reduce administrative burdens

Innovation in information technology (IT) has been a major driving force in administrative simplification programmes in most OECD countries. Country studies confirm that the use of IT in transactions within and between government bodies, and between government bodies and business and citizens, is probably the most effective way to simplify administrative procedures.

In this regard, IT is used in three basic areas:

- To facilitate the operation of complex systems within government agencies, *e.g.* those relating to permitting;
- To aid interconnection among government agencies; and
- To improve the interface between government and citizens or individual businesses.

Administrative simplification strategies based on IT tools are numerous. In the OECD and many non-OECD countries, much of the progress made via the introduction and refinement of these strategies is visible on government agency websites, which have shown striking developments in the past few years.

Among the most important uses of IT that have been developed are electronic means of:

- Storing, compiling and providing information;
- Providing access to codified regulations;
- Communicating within and between government departments and between different jurisdictions (intranets);
- Online filing of applications, and other transactions;
- Compiling and reporting statistics;
- Assigning business identification numbers;
- Governments collecting data from enterprises without active enterprise involvement; and
- Streamlining government contracting.

Use of IT could be a valuable tool to promote environmental compliance. The example of the VAHTI system in Finland (Box 20) shows how an online unified database can help to increase the effectiveness of data collection and use at various stages of regulation and enforcement.

Box 20. VAHTI compliance monitoring system in Finland

The VAHTI compliance data system functions as a tool for regional environment centres in processing and monitoring environmental permits. The system also contains information on how enterprises comply with environmental regulations. The data system contains information on the environmental permits of clients and data on a number of different environmental aspects, *e.g.* waste, emissions to air, etc. The operators are able to put their data (periodic environmental reports) directly into the database.

The data system enables specific analysis of pollution in one SME or about pollution in a particular region. The information can also be used by SMEs to monitor their own situation.

The permit, or the emissions monitoring and reporting programme annexed to the permit, includes instructions on what the operator must report to the authorities. Operators are encouraged to submit their data electronically via the TYVI operator (TYVI – flow of information from customers to authorities).

The user interface makes it possible to add new customers, to change or add customer data, to retrieve reports from the database and to write inspection reports.

The data system became operational in 2003. It is considered to be an effective tool in everyday work of the environmental administration. Moreover, the system provides valuable reports for diverse needs of the authorities and other stakeholders.

Source: EC, Directorate General Enterprises and Industry (2006), Reducing Burdens on Industry

A number of issues, however, should be considered when using IT as an administrative simplification tool. One fundamental issue is the need to retain a benefit-cost perspective. This means that identified gains, including gains made by users of services, are weighed against the costs of developing and, more importantly, maintaining the IT-based tools. Another important set of issues revolves around questions of privacy, security, and archival concerns. In addition to all this, the increasing use and importance of IT in government-business and government-citizen relations might create problems regarding the digital divide. Some businesses (*e.g.* SMEs) or groups of citizens might find it more difficult or impossible to get access to government services provided electronically. IT-based administrative processes might increase already existing economic and social differences among businesses and citizens.

Furthermore, it is increasingly recognised that the use of IT often requires or promotes important changes in administrative organisation. Integrated online services, for example, will require a mapping and reassessment of processes and administrative arrangements within all agencies involved. As part of this process, redundancies and overlaps will probably be identified and better policy options are likely to become apparent.

Finally, making existing forms and procedures available on the Internet has in many countries created an interesting and often unanticipated side-effect. Immediate Internet access to, and exposure of, over-bureaucratic forms requesting information in an unclear or duplicative manner has in many cases triggered strong direct reactions from users and media, urging the issuing authority to simplify the forms.

Aware of this effect, agencies pushing the administrative simplification agenda have sometimes used such “shaming” strategies as exposing bad forms and procedures on the Internet as a driver for further simplification among reluctant reformers. However, increased use of IT does not guarantee in itself that the positive changes in administrative organisation and regulations mentioned above will happen.

3.2 Eco-labelling and product certification

Eco-labelling/product certification is the most popular way to inform consumers about environmental characteristics of products. The main objective of this tool is to promote the production and consumption of more environment friendly products. The International Standard Organisation (ISO) specifies the following three types of eco-labels:

- ISO I type: eco-labels approved by an independent third party. This type of eco-labelling is voluntary and based on a number of criteria for specific product groups. Eco-labels are awarded to products with relatively better environmental characteristics in a particular product group. An example of such an eco-label is the EU eco-label.

- ISO II type: declaration of enterprises informing consumers about particular environmental characteristics of a product, *e.g.* energy efficiency. In this case, no third party approval is required. An example of such an eco-label is a declaration by the producer that a product contains a certain percentage of recycled material.

- ISO III type: environmental product declarations (EPD) providing quantitative information about a product in a standardised form. EPDs usually contain information only on the key environmental impacts of a product and other environmental information (*e.g.* hazardous chemicals in the product, information concerning utilisation of product waste). Judgement regarding the quality of the product in terms of environmental characteristics is left up to consumers. This eco-label makes it possible to compare environmental characteristics of similar products. An example of this type of eco-labelling is ITT Flygt AB EPDs for pumps produced by this company.

A key feature of the ISO I type eco-label is that it provides information about a product's environmental characteristics to consumers in very understandable form. The consumer only needs to know what label is used in order to identify more environmentally friendly products. As an independent third party is involved in assigning the eco-label to a product, the consumer can trust this information. Taking into account that a product is assessed against a number of

approved criteria, the producer is forced to collect and analyse a lot of information that could be used for improving the product's environmental characteristics in its entire life cycle. Therefore, the producer has a good starting point for improving the product's environmental characteristics. The effectiveness of this tool for motivating enterprises to improve environmental performance depends on the criteria defined for a particular product group and on the existing environmental characteristics of the product.

There is a risk that producers using ISO II type eco-labels might manipulate data, and so information provided by different producers would hardly be comparable. Effectiveness of this eco-label in terms of improving environmental performance of enterprises is therefore very limited.

Due to the standardisation of EPDs, ISO III type eco-labelling is highly motivating for enterprises to improve product characteristics throughout the product's life cycle as it enables them to compare their own products with similar ones on the market. However, the consumers' ability to assess this type of eco-labelling information is limited as they have to possess at least general environmental knowledge to understand EPDs.

Commonly, eco-labelling systems require significant human and financial resources from the government (except for ISO II type eco-labelling, which is hardly effective in terms of compliance promotion). Moreover, enterprises that would like to label their products with ISO I or ISO II type eco-labels should also allocate significant resources for this purpose, which makes eco-labels hardly applicable in the SME sector. Another point that should be stressed is that establishing national eco-label schemes in small countries often does not pay off because of a limited market and relatively high cost for companies. For example, in Lithuania, no enterprise chose to apply for a national eco-label and so this system is going to be terminated.

In the case of SMEs, particularly in a small country, it could be economically and practically feasible to establish a simplified national product certification scheme for particular products widely produced in the country (Box 21). This could motivate SMEs to improve their environmental performance.

Box 21. Environmental certification of SMEs in Norway

The Eco-Lighthouse Programme is a programme for environmental certification of SMEs in Norway. With this programme, companies are supposed to reduce their impact on the environment, reduce costs and make use of an environmental profile in their marketing. The Environmental Lighthouse Programme is supported by the Norwegian Ministry of the Environment. The initiative is organised as follows:

The programme's **board** bears overall responsibility, approves trade demands and reports to the Norwegian Ministry of Environment

The **Eco Lighthouse Office** is responsible for marketing on national level and the continuous development of the programme (including developing and improving trade demands in co-operation with consultants, companies and branch organisations). The office also arranges training courses for consultants and people in municipalities who certify companies.

The **municipalities** recruit new companies, establish contacts between consultants and companies, make use of the media and carry out inspections before the environmental certificate is awarded. The municipalities also issue the certificates. It is important that the municipality's Environmental Department has participated in the first meeting with companies in each trade in order to launch co-operation between the municipality and the companies.

Local consultants conduct environmental analysis in the companies together with environmental groups formed by management and employees of the companies.

The municipality awards framed certificates when the companies have implemented the action plan to satisfy the established demands. The municipality may also award mini certificates in A-4 format. The mini-certificate may be used in all kinds of marketing, an in invitations for tenders.

Source: Eco-lighthouse, http://www.miljofyrtarn.no/eindex.htm

To be effective, product certification systems should be backed by an intensive marketing campaign and other promotional activities to get appropriate attention from both enterprises and consumers (Box 22).

Box 22. Activities to promote eco-labelling in EU countries

In **Norway**, marketing of eco-labelling started in the mass media. Later, 10 enterprises interested in participating in the eco-labelling scheme were selected. These companies received advice and assistance in developing documents necessary for obtaining the eco-label. In the **Netherlands, Italy, Belgium** and some other countries, priority industry sectors have been selected for eco-labelling. They receive most of the public financial support for eco-labelling. In **Denmark**, special committees to promote eco-labelling have been established; *e.g.* in 1999, the Danish Ministry of Environment set up a textile eco-labelling committee. In **some EU countries**, eco-labelling is promoted through public procurement procedures.

Source: EU Eco-label, Marketing Studies,
http://ec.europa.eu/environment/ecolabel/marketing/marketingstudies_en.htm

3.3 Compliance assistance and support schemes

Compliance assistance activities consist of providing information and technical assistance to the regulated community to help it meet the requirements of environmental law. Through very diverse activities (see Box 23), compliance assistance programmes aim at ensuring that the regulated community understands its obligations and finds cost-effective ways to comply, or even to go "beyond compliance". Compliance assistance may be organised around specific regulations and problems, business sectors, or be directed to specific regions.

Box 23. Categories of compliance assistance according to the US Environmental Protection Agency

The United States Environmental Protection Agency (EPA) groups compliance assistance activities into four major categories: telephone assistance, workshops, presentations, compliance assistance tools, and on-site visits.

Telephone assistance includes assistance provided by hotlines, where the telephone is the primary outreach vehicle.

Presentations are specific compliance assistance materials communicated to a group of regulated entities at meetings that may or may not be sponsored by the compliance assistance programme. Presentations include speeches, multi-media demonstrations, and panel discussions. Presentations are briefer and less resource intensive than workshops.

Workshops include training sessions and seminars, sponsored by the compliance assistance programme, that involve a group of regulated entities or assistance providers. Workshops are more substantial than presentations and tend to involve greater participant interaction.

Compliance assistance tools (guidelines) include printed materials (*e.g.*, newsletters, fact sheets, information packets, brochures), videos, slide shows, and websites that are produced by the EPA's regional offices, headquarters, or others for distribution purposes. Examples of compliance assistance tools also include plain language guides, self-audit checklists, etc.

On-site Visits include visits to potentially regulated facilities to provide technical assistance, compliance assistance, environmental management reviews, and pollution prevention assistance. On-site visits may also be used to set a baseline from which programmes can measure the facility's progress. On-site visits do not include inspections where the intended purpose is to carry out enforcement.

The USEPA believes that understanding how effectively the target audience was reached will subsequently help to choose the most appropriate tools. If the hotline, compliance guidelines, or training events are reaching only a small portion of the intended audience, there will be limited corresponding changes in understanding and behaviour. To this end, specific compliance assistance indicators were developed.

Source: USEPA (2002) *Guide for Measuring Compliance Assistance Outcomes*, revised. EPA300-B-02-011, www.epa.gov/oeca.

The role and involvement of authorities in compliance assistance are variable. While certain activities can be implemented directly by regulators or inspectors, many tasks can be outsourced, such as establishing law registers or developing compliance guidelines. A key role for the government is initiating compliance assistance programmes and providing the necessary support to direct providers of assistance, including by securing funding from public sources or international donors. Practical implementation of compliance assistance activities can then be partly outsourced.

Sometimes, legislation specifically requires authorities to initiate and sponsor compliance assistance programmes. One example of this is the United States, where legislation requiring specific attention given to the compliance needs of small businesses has been in place since the passage of the Regulatory Flexibility Act in 1980. The Act was strengthened in 1996 with the passage of the Small Business Regulatory Enforcement Fairness Act, which introduced legislated requirements for agencies to take specific actions to assist small businesses in meeting their compliance obligations.

3.3.1 Compliance guidelines

SMEs often do not have sufficient information and understanding of environmental legal requirements and best ways to achieve compliance. Compliance guidelines can be very helpful in this regard.[5]

Compliance guidelines may be prepared for SMEs in general or for main sectors where SMEs are active. They also can be issue-specific, *e.g.* addressing waste or water pollution. Compliance guidelines are important because they organise all major legal information in an easy-to-use way, listing, for example:

- All relevant legal acts;
- Permitting requirements and application procedures;
- Checklists assisting in the identification of applicable requirements and in references to standards and norms;

[5] Such materials are also an important support tool for environmental inspectors.

- Self-monitoring and reporting requirements and forms;
- Information about applicable pollution fees and/or taxes; and
- Contact details of the personnel of environmental inspectorates or independent advisory bodies responsible for SMEs or a particular sector.

While traditionally such guidelines were available on paper, the Internet has become an increasingly important media for information dissemination. A good example is the NetRegs compliance assistance initiative in the UK (Box 24), which provides free information on a number of environmental issues important for SMEs.

Box 24. NetRegs – Compliance assistance initiative in the UK

NetRegs is a partnership between the UK environmental regulators – the Environment Agency in England and Wales, SEPA in Scotland and the Environment and Heritage Service in Northern Ireland. NetRegs is an Internet website that provides free of charge environmental guidance for SMEs in the UK. The main focus is compliance with environmental regulation and improvement of environmental performance in SMEs. The webpage is regularly updated. For registered users, an alert is sent when changes in environmental legislation is introduced.

The webpage consists of:

(i) Sector specific guidelines for more than 100 sectors;

(ii) Guidelines for management of different environmental aspects (*e.g.* energy, hazardous substances, noise, packaging, waste and recycling);

iii) Information about current and future legislation; and

(iv) Useful links to business support organisations, pollution prevention guidelines, trade associations, etc.

Source: NetRegs, www.netregs.gov.uk

3.3.2 Direct communication during meetings and onsite visits

The most straightforward way of providing information to enterprises is to organise meetings and seminars where the compliance requirements and application of different compliance promotion tools are presented and explained. Such events could be organised jointly with industrial associations and other business support organisations.

The following types of events could be organised:

(i) Seminars designed to provide general information;

(ii) Meetings (and possibly on-site visits) that demonstrate what other enterprises have done; and

(iii) Workshops focused on helping participants to take action.

Furthermore, compliance assistance could be provided by environmental inspectors during on-site visits. In addition to revealing non-compliance, inspectors can also often find its cause, communicate this problem to the operator and provide "first aid" recommendations. On-site inspection may also provide an opportunity to stress the responsibility of management for better housekeeping. To meet this objective, the inspection should include:

(i) Interviews with personnel at different levels of the enterprise (from management to operators);

(ii) Reviewing files and documents, and

(iii) Verifying that procedures are followed, *e.g.* by source testing, reviewing records and observing operations.

Such inspections require substantial resource allocation and adequate competence of inspectors. Another issue, largely under discussion, is whether inspectors should be giving advice as this may conflict with their mission of supervising compliance and revealing violations.

3.3.3 Training

Training programmes for SMEs can focus on particular compliance promotion tools or can cover a combination of different tools. For example, Lithuanian experience shows that the best option is to start with training on environmental management systems, continuing in parallel with cleaner production and gradually introducing eco-design and environmental reporting methodologies. Such training is also needed for representatives of authorities who have contacts with industrial enterprises. In this case, the scope of training can be reduced to basic information presented in 2-5 day training sessions.

Similarly, there is a need for short (2-4 hours to 1 day) training sessions for top managers of industrial enterprises. The main objective of such training sessions is to convince them of the potential benefits that can be gained from applying compliance promotion tools and to provide them with an overview of methodologies.

To increase the effectiveness of training programmes for industrial enterprises, the programmes should preferably include practical implementation of a particular tool in participating enterprises. One of the most effective ways to implement successful training programmes is to organise a series of training sessions and to carry out practical work in companies between the sessions.

3.3.4 Demonstration projects

Demonstration projects are usually implemented in selected enterprises with the objective of sharing the acquired experience with other enterprises. Another distinct feature of demonstration projects is that such projects are usually devoted to testing new methodologies. However, experience shows that the multiplier effect does not materialise on its own, even in the companies where demonstration projects have been implemented. Very often demonstration projects are implemented with too extensive involvement of consultants and too limited involvement of enterprise specialists in actual project work. When planning for demonstration projects, careful consideration should be given to the follow-up of the projects and dissemination of experience using case studies and workshops.

3.3.5 Excellence promotion

Promoting excellence, *e.g.* through establishment of recognition and award systems, could also prove to be an effective means to promote good environmental practices and to increase compliance rates. Recognition and award systems are voluntary programmes that provide signs for public recognition or in some cases financial reward to stimulate good performance. They may be offered at local as well as at national or regional levels and may be targeted at small and medium sized or large enterprises and could be administered by governmental institutions or industry associations. The publicity, which may accompany an award, may also serve an educational function and may help to raise public awareness.

3.3.6 Academic education programmes

To ensure sustainable application of modern environmental tools, it is necessary to create a pool of educated specialists in the country, who have acquired appropriate training and skills in modern environmental management, cleaner production, environmental policy, law and similar subjects. An example of a specialised M.Sc. programme in cleaner production and environmental management is presented in Box 25.

Box 25. M.Sc. programme in cleaner production and environmental management in Lithuania

This is a two-year programme that started at Kaunas University of Technology in September 2002. The programme has been developed in co-operation with several technical universities in the Baltic Sea region and aims to provide M.Sc. education with a specialisation in environmental management and cleaner production. It has a strong technology component at advanced level for engineering students in industrial (*i.e.* chemical, electrical, mechanical, materials, etc.), civil or environmental engineering with a B.Sc. or the equivalent.

The M.Sc. programme includes: (i) compulsory courses covering basic aspects of environmental management and technologies; and (ii) optional courses that discuss these issues in more detail and provide additional knowledge to ensure that graduates of the programme will be capable of conducting systematic analysis of industrial activities and finding optimal solutions for various problems related to sustainable industrial development. The graduates of the programme have been employed in the Ministry of Environment, Environmental Protection Agency, Regional Environmental Protection Departments (institutions controlling environmental compliance and issuing environmental permits), and industry.

Source: Institute of Environmental Engineering, Kaunas University of Technology, http://www.apini.lt/?section=text&id=16&lang=en

3.3.7 Finance-based compliance support

Public subsidies for environmental investments can be another compliance promotion tool. However, public finance should be provided only when and where it is needed, and targeted at priority environmental investments. Public support should aim to mobilise additional resources by requiring enterprises to make investments with their own funds. In addition, subsidies should be disbursed in a competitive and transparent manner and directed to projects and project owners that offer the most cost-effective solutions, *i.e.* can achieve goals at minimum cost.

Relying on subsidies to achieve environmental improvements alone is, in itself, an indicator of weak enforcement. However, during transition to a market economy, when policy and market failures occur, subsidies could play an important role in supporting the implementation of environmental policy and in encouraging compliance with environmental standards and legislation.

A number of countries have set up earmarked environmental funds at national, regional and/or local levels to channel some environmental subsidies. Environmental funds are comprehensive public entities, controlled by governments and capitalised mainly through pollution charges. They provide earmarked financing for a wide range of environmental projects for both the public and private sectors.

Subsidies provided through environmental funds or directly from the budget could be a legitimate compliance promotion tool, if the above conditions on allocation of public resources are fulfilled. In addition, funding from the environmental funds could be used for media campaigns that promote environmental compliance and for purchasing monitoring equipment for enforcement agencies.

An interesting initiative has been implemented by the Nordic Environmental Finance Corporation (NEFCO) in the Baltic countries and northwest Russia. In order to finance cleaner production projects through soft loans, a revolving facility (Box 26) was established. The experience from NEFCO's revolving facility shows that such an initiative can successfully operate only in countries where sufficient cleaner production capacity has been developed prior to establishing such a financing mechanism.

Box 26. Financing cleaner production investment projects in Baltic countries and the Russian Federation

A special revolving facility to finance CP investments in Lithuania, Latvia, Estonia and the Russian Federation was established by the Nordic Environment Finance Corporation (NEFCO) in 1998. The main objective of this facility is to provide soft loans for the implementation of high-priority CP investments with rapid payback that yield environmental and economical benefits ("win-win projects"). The facility provides financing directly for a project and the loan is repaid by the company in accordance to the payback period. The basis for providing a loan is the cash flow of the CP investment and the ability of the enterprise to repay the loan over the agreed period. The maximum loan size is equivalent to about EUR 350 000. This type of assistance is particularly valuable for SMEs as these companies often have limited internal financial resources to finance CP projects.

Source: Institute of Environmental Engineering, Kaunas University of Technology and NEFCO (2005), Revolving Facility for Cleaner Production Investments, http://www.nefco.fi/documents/CP_write_up_2004_2.pdf

A number of countries provide financial subsidies for EMS implementation, particularly in SMEs (Box 27). In some cases, financial support is only provided to cover verification/certification costs, but in some countries, the implementation process of environmental management systems is also subsidised.

Box 27. Financial support for implementation of environmental management systems in EU countries

Many EU countries (Austria, Belgium, Denmark, Greece, Czech Republic, Portugal, Germany, Spain, and Italy) provide financial support for implementation of an EMS in accordance to EMAS. Financial support usually covers both consultations during implementation of the EMS and verification audits for EMAS. For example, in Belgium, financial support amounts to 70% of all costs incurred during implementation and verification of an EMS for SMEs and 60% for other companies. This support scheme also provides subsidies representing 5% of investment and employee training costs associated with EMS implementation.

In some countries (Austria, Denmark, Germany), subsidies for EMS implementation and verification are only provided for SMEs. In Austria, a programme for promoting EMAS for SMEs provides subsidies for up to EUR 21 800. In most cases, subsidies are provided whether a company aims for EMAS registration or ISO 14001 certification. However, in some countries, financial support is differentiated. For example, in Spain, EMAS verified companies can expect higher subsidies than enterprises that have been awarded ISO 14001 certification.

In Italy, the Ministry of Environment and a national financial institution (MPS BancaVerde) have signed an agreement concerning subsidies for SMEs that aim to implement environmental management systems in accordance to EMAS.

In other countries, EMAS registration can be free of charge (*e.g.* in Belgium, Greece, Hungary, and Latvia).

Source: EMAS, Member State Activities, http://ec.europa.eu/environment/emas/activities/index_en.htm

3.3.8 Comprehensive compliance assistance programmes

Some countries have established government-financed comprehensive compliance assistance programmes (Box 28) to support enterprises in their efforts to improve environmental performance. These programmes usually include a help-line for enterprises, on-site consultations, publication of cases studies, good practice guides that explain not just what to do but how to do it, environmental performance guides that allow companies to measure their performance with others in their sector and see their scope for improvement, and promotional information.

Box 28. Compliance assistance programme in the UK

Envirowise delivers a valuable government-funded programme of free, confidential advice to UK businesses. This assistance enables companies to increase profitability and reduce environmental impact.

Independent, practical and proven guidance is available through a dedicated, free help-line; on-site visits delivered by a nationwide team of expert advisors; information resources, ranging from case studies to best practice guides; over 200 events a year, from smaller-scale seminars to major exhibitions; and a website.

Envirowise solutions are driven by the specific needs of individual firms to genuinely improve their business practices, profitability and competitiveness. Since 1994, Envirowise has helped UK industry save more than GBP 1 billion.

Envirowise is managed on behalf of the UK government (DTI and DEFRA) by Momenta, an operating division of AEA Technology plc, and Technology Transfer and Innovation Ltd (TTI), a wholly-owned subsidiary of Serco Limited.

Source: www.envirowise.gov.uk/

The key feature of comprehensive compliance assistance programmes is that enterprises can get advice, consultations, informational and methodological materials and other compliance assistance in one place. However, the development and operation of such programmes require significant financing, mostly from public sources.

Local governments can play an important role in establishing comprehensive compliance assistance programmes. For example, the Department for Environmental Protection of the City of Vienna is a leading partner in the *OkoBusinessPlan Wien* (Box 29).

Box 29. The Eco-Business Plan Vienna

The *OkoBusinessPlan Wien* (Eco-Business Plan Vienna) was established in 1999. This initiative co-ordinates, organises and supports environmental activities of enterprises in Vienna irrespective of size or sector. The participating enterprises receive professional advice and consultations, as well as financial support for environmental investments. Enterprises can get between 30% and 40% of their costs paid. The upper limit of the subsidy is EUR 98 000 per enterprise. The City of Vienna and partners invest on average of EUR 1.24 million per year. Almost 90% of the participating enterprises are SMEs. According to an evaluation report of the Department of Environmental Economics and Management (Vienna University of Economics and Business Administration), the eco-business plan is very successful. Most of the enterprises are satisfied with the programme and are able to identify both environmental and economic benefits from participating in the programme.

Source: European Commission (2002), European SMEs and Social and Environmental Responsibility, Observatory of European SMEs, No. 4.

3.4 Using indirect (surrogate) regulators and enforcers

Sometimes, when a government's capacity to regulate SMEs is very limited, a credible third party may be used to play a surrogate regulatory role.

General public

The public is a potentially powerful compliance promotion agent. Public interest and power to influence decision-making in enterprises depend on (i) general environmental awareness, and (ii) appropriate information and means to understand and to take action. A number of different means can be used to increase public environmental awareness and understanding of effects on the environment from industrial activities, including articles in business journals and newspapers, TV and radio programmes, newsletters, leaflets, and special awareness raising activities.

Supply chain pressure

In many sectors, the market power of those involved in the supply chain provides opportunities that can be harnessed for promoting environmental protection. Larger firms, in particular, may be able to impose product and process preferences on other firms, using their market power to influence the behaviour of upstream suppliers and downstream buyers. Supply chain pressure thus offers a valuable

means of influencing the environmental behaviour of SMEs. Also, given the difficulties that governments often face in regulating SMEs directly, supply chain pressure may prove to be an important and effective complementary strategy for promoting compliance.

Government can use a variety of ways to encourage, facilitate and reward large companies to be more proactive in exerting pressure on SMEs that are their customers. It might, for example, exert its own supply-chain pressure through its procurement policies; make supply chain pressure a condition for granting regulatory flexibility; encourage larger firms to form partnerships with smaller buyers and suppliers, and give public recognition to those that do so; make this known as an important feature of environmental best practice; insist upon a supply chain pressure requirement directly in legislation; or require that this be mentioned in corporate environmental reporting.

3.6 Specific institutional arrangements

Specific institutional arrangements can support government-driven initiatives to promote compliance. Within environmental authorities, communication with and compliance promotion among SMEs can be assigned to one lead agency or distributed across different units. The preferred model will depend upon the general structural organisation of environmental authorities.

Quite often there are specialised units in charge of compliance promotion, *e.g.* information centres (or "one stop shops"). The US Environmental Protection Agency (EPA) has a unique institutional arrangement to help SMEs – the small business ombudsman (SBO). An ombudsman is an objective problem solver, an independent and objective source of reliable information for the general public or a specific public (SME). Specialised compliance promotion units need to have a sufficiently strong mandate to perform their functions and to co-operate with other units in environmental authorities effectively.

To ensure such co-operation within environmental authorities (and with other governmental and non-governmental stakeholders), it might be necessary to develop a compliance promotion strategy. Such a document could serve as a plan for further action, establish priorities and sequence actions, particularly against the background of scarce resources available to environmental authorities for promoting compliance.

International co-operation is a good way to overcome the shortage of resources, at least partly. As many environmental problems facing SMEs, and also their solutions, are similar, compliance guidelines, for example, could be a good means for transferring know-how.

Information centres

Information centres (including telephone help-lines) are useful for providing access to compliance guidelines, but also more generally for providing information about compliance promotion tools and contacts of compliance assistance providers. Such centres can be located at environmental authorities or at a third party institution. To be effective, information centres have to work actively in disseminating information using different means, including direct contacts with enterprises and mass media.

Small business ombudsman (SBO)

The Office of SBO is managed by the Environmental Protection Agency's Office of Policy, Economics, and Innovation and consists of four senior environmental personnel who assist the ombudsman with inquiries from SMEs needing information to comply with Agency regulations.

Established in 1982, the Office of the SBO serves as an effective channel for small businesses to access the EPA and facilitates communications between the SME community and the Agency. The Office reviews and resolves disputes with the EPA and works with EPA personnel to increase their understanding of SMEs in the development and enforcement of environmental regulations. The SBO serves as the liaison for the SME community in the development of environmental regulations and standards, communicating the needs and concerns of affected SMEs to the working groups writing regulations.

In response to the identified needs of the Office's target customer groups, the SBO has undertaken a variety of major outreach efforts including:

- Serving as liaison between SMEs and the EPA to promote understanding of Agency policy and SME needs and concerns;

- Staffing a SMEs hotline that provides regulatory and technical assistance information;

- Maintaining and distributing an extensive collection of informational and technical literature developed by the various EPA programme offices;

- Making personal appearances as a speaker or panellist at SME-related meetings;

- Interfacing on an ongoing basis with over 45 key national trade associations representing several million SMEs and with state and regional ombudsmen who serve enterprises on the local level; also, staying in contact with over 400 additional national organisations that represent millions of SMEs;

- Providing guidance on the development of national policies and regulations that impact on SMEs; and

- Tracking development and implementation of regulations affecting SMEs in support of the Regulatory Flexibility Act.

The SBO performs a careful review of all proposed regulatory actions published in the biannual regulatory agenda to determine their impact on SMEs. From the agenda, certain proposed regulations are selected that may have adverse impact on SMEs. When the notice of proposed rule-making is published in the Federal Register, the SBO alerts appropriate trade associations and proprietary business organisations that the Agency is requesting comments on the proposed regulatory action.

Co-operation and networking among stakeholders

Closer relations among governmental institutions, the regulated community and other stakeholders could be used to ensure more open dialogue among governmental institutions, industry and other stakeholders, which in turn would facilitate application of different compliance promotion tools. Effective co-operation is based on asking for and receiving information just as much as transmitting it. Initiating the establishment of networks for exchanging information and experience could be particularly important in this regard. Different

stakeholders (*e.g.* industrial associations, individual companies, governmental institutions, non-governmental organisations, academia, consulting companies) could be invited to join such networks. The networks could be administrated by industry confederations or branch associations and organise regular meetings, conduct surveys and develop information materials based on the needs of the network members. Such networks could provide an effective platform for consultations to identify compliance problems and the best means for promoting compliance.

4. CORE ELEMENTS FOR A COMPLIANCE PROMOTION PROGRAMME IN GEORGIA

4.1 SME definition and number

A small enterprise is defined by Georgian law as having an annual turnover below GEL (Georgian Lari) 500 000 and up to 20 employees. In a medium enterprise, the average number of employees does not exceed 100 people and the turnover is not more than GEL 1 500 000.

Official statistics show strong recent growth in the private sector in Georgia. The Tax Department cites 83 400 operating entities (including individual entrepreneurs) in 2005, growing to 122 000 operating entities in 2006. Most of the newly registered entities can be assumed to be small enterprises and individual entrepreneurs (IFC, 2007). Unfortunately, Georgian firms are not tracked by size, which makes it impossible to determine exactly how many of the operating enterprises are SMEs and how these firms contribute to production[6], employment, and environmental impacts. Thus, a first step in the government's effort to support SMEs is collecting and analysing basic statistics concerning this sector.

4.2 SME operating environment in Georgia

The business environment in Georgia has long suffered from systemic problems that affected all economic agents, including SMEs. Several cross-cutting issues, which currently are being addressed, could be highlighted, as follows:

[6] A USAID report, published in 2005, mentions that most SMEs are in trade and repair (68%), followed by processing (11%), hotels and restaurants (5%), real estate (5%) and transport and telecom (3%).

- *Flawed law making and enforcement*. An opaque process of regulatory design, inherited from Soviet times and perpetuated after gaining independence, has resulted in requirements that were (and sometimes remain) overly prescriptive and unfeasible. While compliance monitoring has often been reduced to collecting fines, enormous problems have been linked to poor training of judges and court officials, flawed interpretation of the law, lack of independence and corruption of the judiciary, etc. In such a setting, many entrepreneurs have preferred to operate informally.

- *A distorted playing field for businesses*. Until recently, SMEs were subject to heavy regulatory pressure from numerous controlling agencies and high compliance costs. One way to "overcome" these administrative barriers and avoid costly compliance was through bribery and fraud, both willingly, or in response to abuse of powers by governmental officials. As a result, SMEs that tried to operate legally suffered from unfair competition. Since 2004, these distortions are diminishing due to reforms in regulatory and administrative systems;

- *Unstable governmental institutions*. Government officials were and still are frequently moved from their posts, thus being given little opportunity to evolve or implement policy, or develop a (constructive) working relationship with both governmental and non-governmental actors. The permanent reshuffling results in an unstable political and legal environment that negatively influences the business and investment environment, and SMEs in particular.

- *Short-term orientation of SMEs and poor access to finance*. Generally, SMEs in Georgia focus on immediate profits. This has several reasons, including an immature business culture, operating in an informal manner to avoid regulatory pressures, and overly secured loans that impose considerable additional costs on SMEs.

- *Lack of skills*. Although Georgia enjoys a relatively well educated population, the system fails to supply the skills necessary in a modern, market-driven economy. Donors are working on developing such skills, but there is a lack of co-ordination in their aid programmes.

- *Asymmetric access to information and poor communication with authorities*. SMEs have poor access to information, either because they do not know where to find it or because there are vested interests that oppose such access. There are limited opportunities for SMEs to voice their concerns or promote their lawful interests. At the same time, SMEs tend not to associate, and their isolation makes it even more difficult to influence policies and laws.

- *Adversarial relationships between key stakeholders*. At present, there is no clear understanding – in government or the broader population – of the optimal relationship between authorities and business circles. The old attitudes remain: business is bad, and the state must control.

The government took action in 2004-2007 to improve this situation. In particular, regulatory reforms were made that focused on permitting and licensing procedures. The new Law on Licenses and Permits, adopted on 24 June 2005, introduced many changes improving the SME operating environment, such as:

- the total number of licenses and permits has been reduced from 909 to 145 (only 93 licenses and 52 permits still exist);

- the law enacts a 30-day deadline to issue the majority of licenses, and a 20-day deadline for all permits;

- a permit or a license is automatically granted if no government action is undertaken within the stipulated timeframes ("silence is consent" principle); and

- The "one stop shop" principle has been declared mandatory for all issuance procedures.

A recent IMF survey, however, pointed at important challenges in the implementation of this law. For example, the secondary legislation that would make the permitting and licensing processes clear, predictable, and transparent is still missing. Tight deadlines are often not met and need extension. In the field of environment, a very low threshold of mandatory permitting has excluded many potentially hazardous enterprises from any initial scrutiny and regulation of their environmental impacts.

The legal framework for environmental inspection has improved more rapidly than the overall framework in this field. The work of the Georgian Inspectorate for Environmental Protection, established in September 2005, is governed by a primary legal act – the Law on State Environmental Control, which was adopted in June 2005. In order to implement this law, detailed inspection procedures were developed and enacted in 2006 by the Ministry of Environmental Protection and Natural Resources (MEPNR). Currently, a risk-based methodology for inspection is being developed to focus the Inspectorate's efforts on areas where they are most needed.

The MEPNR has encouraged its sub-units to become more transparent and pro-active in providing information on substantive and procedural requirements. There are also initiatives underway to develop IT-based tools for information management, including databases and dedicated web pages.

Furthermore, as part of its communication strategy, the Inspectorate, with assistance from the EAP Task Force, has produced a brochure that explains to the regulated community their obligations and rights, as well as the rights and obligations of environmental inspectors. A Code of Professional Conduct was also developed and will be soon enacted.

In sum, the operating environment is becoming more supportive for SMEs. However, further action is needed so that present achievements do not volatilise. A particular concern for environmental authorities should be the low environmental awareness of SMEs, in particular with regard to their very rapid growth.

4.3 Mandate for environmental compliance promotion

The legal framework in Georgia supports compliance promotion in general and measures targeted at SMEs in particular. This refers to both enterprise legislation and environmental legislation, in particular:

- Chapter 4 of the Law on Support to Small and Medium-Sized Enterprises specifies a number of measures to promote SME creation and development, including through information and advice, publication of guidelines and booklets, organising training courses, providing fiscal incentives and financial support.

- Chapter 2 of the Law on State Environmental Control defines the responsibility of the Inspectorate for Environmental Protection "to ensure establishment and implementation of mechanisms stimulating compliance with requirements of the environmental legislation".

In March 2007, the Minister of Environmental Protection and Natural Resources approved the long-term strategy for environmental compliance assurance in Georgia, which will serve to guide activities of the Inspectorate for Environmental Protection in 2007-2010. This document set forth a number of objectives, including "creating incentives to improve compliance and reward for good behaviour". One of the programme areas, identified by the strategy, is dedicated to activities that promote compliance with environmental requirements. This programme area covers both SMEs and large industry and foresees such measures as awareness raising and educational measures, dialogue with the regulated community to make legislation more realistic and enforceable, development of self-monitoring and self-reporting by industrial operators, and introduction of an industry rating scheme.

Thus, environmental authorities in Georgia have received a strong mandate for compliance promotion. This mandate needs to be transposed into concrete objectives and actions. The following sections provide guidance on core elements of an environmental compliance promotion programme in Georgia that could be adapted to SME needs.

4.4 Objectives for a compliance promotion programme

The overall goal of a comprehensive compliance promotion programme in Georgia would be to ensure a result-oriented and coherent approach towards raising the environmental awareness and performance of small businesses. Several specific objectives could be identified, including:

- **Create a better understanding of the diversity, needs, and most effective ways to work with SMEs.** Environmental authorities at the national and sub-national level, as well as their governmental and non-governmental partners, will need to get a clearer view of the numbers and types of SMEs that are subject to environmental regulation, and determine how appropriate the incentive framework is for this segment of the

regulated community. Situation analysis can serve as a starting point to develop and implement environmental policies, regulations, and compliance assurance strategies that take account of possible effects on small businesses. This will help environmental authorities to establish regulatory requirements and develop procedures that increase environmental performance among SMEs in less administratively burdensome and more cost-effective ways. Furthermore, international experience could be studied to understand future trends and their implications for the work of environmental authorities with SMEs.

- **Design and implement tools that promote environmentally responsible behaviour within the SME sector**. Environmental authorities can help small businesses improve their environmental performance and increase their competitiveness by removing unnecessary regulatory and other barriers to better performance. This requires developing a co-ordinated approach among government authorities, consistent with the goals of economic development, so that small businesses can better understand and meet their environmental responsibilities through win-win options. Businesses often face an array of different approaches and requirements for environmental, health, and safety protection. Environmental authorities need to promote co-ordination and work with other governmental actors to develop effective, less burdensome, and non-duplicative programmes focused on small businesses.

- **Build partnerships and increase stakeholder involvement in compliance promotion.** Establishing diverse partnerships will help to increase government credibility with, and reduce mistrust by, small businesses. Explore partnerships to develop appropriate and cost-effective compliance assistance tools and mentoring programmes.

4.5 Proposed actions: Five over-arching areas

This section presents recommendations that are in line with good international practice. Although these recommendations could be used for developing a detailed plan of actions, it is for Georgian authorities to select the most appropriate toolbox for compliance promotion in the

country. An important challenge will be providing assistance while resources are scarce. This will require a very careful prioritisation of actions, as suggested below.

For the plan to be successful in meeting the needs of small businesses over the long term, it should be regularly measured and evaluated. This plan will be implemented within the context of a changing world. Therefore, environmental authorities will need to identify and address the economic, social, and political trends that affect both small businesses and themselves.

4.4.1 Enabling activities within environmental authorities

Given the limited experience of Georgian authorities in promoting environmental compliance of SMEs, certain enabling activities have to be undertaken in the short term. Situation analysis, a change in attitudes and capacity strengthening within the MEPNR and the Inspectorate are a good starting point. Along these lines, the following activities could be conducted:

- *Establish a modern regulatory culture:* It will be necessary to encourage a more SME-friendly culture within environmental authorities in order to improve relationships with small businesses and increase opportunities for meaningful interactions. To this end, proper incentives for staff should be created. At the same time, all necessary measures should be taken to avoid corruption in dealing with the SME sector.

- *Assess the environmental impact and problems of SMEs:* The inspectorate, in co-operation with other sub-divisions of the MEPNR, as well as with statistical authorities, should estimate the extent and understand the origins of SMEs environmental impact. To this end, analysis of existing data, gathering of additional information and surveys are needed. A questionnaire that can serve this purpose is presented in Annex 1. The results of assessment can be disclosed to SMEs and other stakeholders;

- *Train staff within environmental authorities:* Environmental authorities have to become more aware of SME needs and specifics, which will require educating and training management and staff at the national and sub-national level.

This training should also cover an introduction to various mechanisms that could be used for strengthening environmental performance of SMEs. The current review could serve as a basis for developing the training course.

- *Designate a "small business ombudsman"*: This position could be created either within the MEPNR or at the Inspectorate for Environmental Protection.

4.4.2 Access to information and regular dialogue

One of the most urgent needs is to make the regulated community aware of existing legal requirements and changes that were recently introduced. Information about initiatives undertaken by governmental institutions in the area of compliance promotion/assistance should also reach the regulated community. It is important to ensure two-way communication between governmental institutions and the regulated community. The following activities could be conducted:

- *Provide easy access to laws and regulations*: If conditions permit, a searchable database of all existing sector-specific environmental requirements could be created. After any changes in existing legal requirements are introduced, preferably the full text of the new version of a particular legal requirement should be displayed in the database. As access to the Internet is limited, authorities would need to start with a paper version of legal requirements organised by sector. A regular update of both electronic and printed products will be necessary;

- Foster dialogue with SMEs: Improved contacts with the regulated community would a first step. Environmental authorities will also need to integrate SME issues into strategic and operational management processes by creating opportunities for small businesses to regularly present their concerns to the MEPNR and its sub-divisions.

4.5.3 Simplifying regulation

Simplifying regulation could be an effective way to reduce administrative burden on both governmental institutions and the regulated community. However, changes in environmental regulations should be analysed carefully in order not to compromise environmental protection goals. To make the process of revising existing legal requirements or the introduction of new legal requirements more effective, it is necessary that the regulated community is involved. The following activities could be conducted:

- **Guarantee SMEs involvement in regulatory processes:** Authorities need to encourage a meaningful involvement of small businesses in various stages of the regulatory development process. This may include more interaction with trade associations and other small business entities, developing plain language fact sheets on proposed laws and regulations, as well as compliance guides and checklists for final laws and regulations, and enhancing opportunities for small businesses to comment on draft versions.

- ***Further promote innovative permitting approaches:*** Promoting the use of less burdensome permitting approaches is very important. These include development and adoption of General Binding Rules, together with procedures for a simple environmental registration/declaration of SME activities;

- ***Establish clear self-monitoring requirements and integrate self-reporting***: Even though it is difficult to rely fully on self-monitoring in the current context, application of this tool could help to improve relations between governmental institutions and SMEs. In order for self-monitoring to be effective, all environmental reporting should be integrated into one form and the deadlines for reporting on impacts on different media should be harmonised. Self-monitoring would also need to be combined with more effective inspection activities.

- ***Co-ordinate inspection efforts***: The first step would be to initiate discussions with other governmental institutions involved in inspecting SMEs to discuss possible inspection co-ordination opportunities. A permanent consultation body (meeting periodically) could be established.

4.4.4 Compliance assistance and promotion of excellence

Generally, SMEs require external assistance to be able to apply particular measures aimed at improvement of environmental performance. To this end, the following activities could be conducted:

- *Develop reference materials*: Authorities will need to provide small businesses with such materials as plain-language compliance guides, checklists, and fact sheets, etc. The low level of awareness about regulatory environmental requirements in SMEs suggests that they should be provided with guidelines on compliance with environmental legislation. A brief sector-specific or general guide, explaining the responsibilities of SMEs (with a reference to relevant legal and reporting requirements) would assist awareness raising efforts. Such guidelines could be disseminated via the Internet or in printed form and provide contact information of staff/units responsible for specific sectors, SMEs, or compliance assistance in general.

- *Promote EMS and cleaner production approaches*: An important step would be to enact policies that encourage adoption of an EMS and cleaner production. Advice on specific elements for such policies has already been provided to Georgia by EU experts.

- *Facilitate capacity building initiatives for the SME sector.* The MEPNR may want to encourage and support research organisations and other public or private bodies in setting up awareness raising and training programmes for SMEs on environmental management systems and cleaner production. Training programmes preferably should be long term (6-12 months) initiatives consisting of a series of training sessions and practical work in companies for development and implementation of cleaner production measures or environmental management systems. To ensure follow-up of such initiatives, dissemination of results should be ensured.

- *Launch the use of IT-based tools and resources*: While continuing to provide hard-copy tools to aid SMEs, environmental authorities should start to develop simple, interactive web-based tools and user-friendly software, as

appropriate as possible for small businesses, to help them with compliance and reporting requirements;

- *Establish recognition and award mechanisms*. Authorities, in consultation and co-operation with NGOs and academia, may want to develop reward schemes for SMEs going beyond compliance.

4.4.5 Partnerships with non-governmental actors

The public and other third parties could be important players in supporting compliance promotion activities. Pressure from third parties, particularly market pressure, provides powerful incentives for enterprises to change their behaviour. The following activities could be conducted:

- *Work with third parties that could serve as indirect enforcers*: Public information/awareness raising campaigns could be considered as a means to increase the public's ability to influence operations of SMEs. Information about activities planned/undertaken by governmental institutions to promote environmental compliance could be made publicly available. Additional analysis might be needed to identify the best ways to reach third parties.

- *Create opportunities for business-to-business networking*: It might be beneficial to initiate and regularly convene small business forums and a national summit to provide networking opportunities on a national level and raise the level of awareness of, and about, the small business community.

- *Encourage universities to establish education programmes in preventive environmental management/environmental policy.* Specialised education programmes are the most effective way to achieve the long-term goal of creating a pool of skilled specialists who are able to tackle environmental problems and issues of environmental compliance, and who can bring their expertise to governmental institutions and the private sector. The first step could be the development of separate specialised courses on environmental management systems, cleaner production, and modern environmental policy.

4.6 Institutional arrangements

Bringing about change in the environmental compliance situation in Georgia requires the involvement of a number of different governmental institutions. However, in order to be effective, the process of compliance improvement has to be well co-ordinated, and assigning one institution for co-ordinating this process is a precondition.

Establishing a working group that consists of representatives from institutions that have or could have a link to SME's environmental compliance could be also considered. The working group could develop a detailed plan of actions for compliance promotion/assistance in Georgia and could lead the process of change. As environmental compliance is closely related to the general situation of SMEs in the country, the process of applying environmental compliance promotion tools should preferably be co-ordinated with other initiatives directed towards SMEs.

4.7 Possible funding sources

Selection and implementation of the most appropriate compliance promotion mechanisms that are best suited for local conditions should rely on domestic resources. In the medium term, donor support needs to be secured to put in place tools that are resource-intensive. In terms of corporate compliance promotion tools such as environmental management systems, cleaner production, etc., research, consulting organisations and other public or private organisations could be encouraged to develop project proposals for international donor financing. Governmental institutions could facilitate this process. In the longer term, compliance promotion should be mostly based on domestic finance sources.

ANNEX 1. ENTERPRISE ENVIRONMENTAL SURVEY QUESTIONNAIRE

INTRODUCTION

The survey is being conducted in order to:

- Analyse the problems and needs of businesses as concerns environmental regulation and compliance; and

- Based on this analysis, develop specific tools to promote compliance with environmental requirements.

An additional objective is screening working methods and effectiveness of environmental authorities working at the sub-national level. The questionnaire is addressed to all segments of the regulated community.

SECTION 1: RESPONDENT IDENTIFICATION

What are the job responsibilities of the person(s) completing this survey? (Check all that apply.)

☐ Environmental Engineer
☐ Plant Management Engineer (non-environmental)
☐ Financial Manager
☐ Enterprise Director
☐ Other (please specify) _____

Was the response approved by the company management?

☐ Yes, by the company's director
☐ Yes, by the owner
☐ No, no management approval was needed

SECTION 2: ENTERPRISE DESCRIPTION

Please provide the following information:

- Company name;
- NACE codes (all that apply to your production processes);
- Legal address;
- Address of all production facilities;
- Legal form;
- Contact information (all facility operators and environmental officers).

How many years has the enterprise been in operation (as of today)?

☐ 1-5 ☐ 6-10 ☐ More than 10

Production capacities:
- Designed;
- Actual.

Last substantial reconstruction: _____ (year)

Surface of the enterprise_____(ha)

SECTION 3: ENVIRONMENTAL COMPLIANCE AND RESULTS

Knowledge of legal requirements

Do you know which environmental legislation applies to your company's activities?

☐ Yes ☐ No

How confident are you that you have sufficient knowledge about environmental legal requirements relevant to your company?

☐ Very confident ☐ Fairly confident
☐ Not so confident ☐ Not at all confident

Where you lack information, do you know where or how to get it?

☐ Yes ☐ No

How do you think environmental requirements will develop over the next 3-5 years?

☐ Increase ☐ Stay the same ☐ Decrease ☐ Do not know

What risk does your business incur if you ignore compliance with environmental requirements over the next 3-5 years?

☐ Very high ☐ Fairly high degree of risk
☐ Some risk ☐ No ☐ ☐ Do not know

Do you know which environmental licenses and permits apply to your company's activities?

☐ Yes ☐ No ☐ Not sure that I know all of them

Compliance aspects

How important is compliance with environmental legal requirements in your business?

☐ Very important ☐ Fairly important
☐ Not so important ☐ Not at all important

As of today, have you obtained all environment-related licenses and permits?

☐ Yes ☐ No ☐ Do not know

How confident are you that you have sufficient knowledge about licensing/permitting requirements relevant to your company?

☐ Very confident ☐ Fairly confident
☐ Not so confident ☐ Not at all confident

As of today, are all your environment-related licenses and permits valid?

☐ Yes ☐ No ☐ Do not know ☐ Does not apply

As of today, do you have a valid accident preparedness plan?

☐ Yes ☐ No ☐ Do not know ☐ Does not apply

Does your company meet the requirements of environmental legislation?

☐ Yes, fully ☐ Yes, partially ☐ No ☐ Do not know

Do you monitor compliance with requirements of environmental legislation?

☐ Yes, we have a self-monitoring system ☐ Yes, occasionally
☐ No ☐ Don't know

How do you monitor the quantitative aspects of environmental compliance?

☐ Own laboratory ☐ Sub-contracted laboratory
☐ None ☐ Not applicable

Have you sent the reports on compliance with natural resources licenses?

☐ Before 1 April 2007 ☐ In the period 1 April – 1 May 2007
☐ After 1 May 2007 ☐ Did not send at all ☐ Not applicable

Have you sent the reports on air and water emissions for 2006?

☐ Yes ☐ No ☐ Not applicable

How many times was your company inspected over the last 2 years?

☐ 1-2 ☐ 3-6 ☐ More than 6 times

What were the reasons for inspection?

☐ Planned inspection ☐ Accident
☐ Complaint(s) ☐ Other ☐ Do not know

Has your company paid any environmental fines over the last 2 years?

☐ Yes ☐ No ☐ Do not know

Has your company paid any bribes to environmental regulators and inspectors over the last 3 years?

☐Yes ☐ No ☐ Do not know

Environmental performance

Does your enterprise have operational air emission filters?

☐ Yes ☐ No ☐ Do not know

Does your enterprise have operational wastewater treatment facilities?

☐ Yes ☐ No ☐ Do not know

Does your enterprise have waste storage facilities that meet environmental requirements?

☐ Yes ☐ No ☐ Do not know

Does your enterprise check the energy efficiency of your processes in comparison with international benchmarks?

☐Yes ☐ No ☐ Do not know

Stakeholders

Do you think that business representatives have a responsibility to look after the environment today so that it is in good shape for future generations?

☐ Yes ☐ No

Has your company received complaints in the past from local residents, nature protection groups or other interest groups in relation to its environmental performance, *e.g.* complaints from local residents regarding air pollution?

☐ Yes ☐ No ☐ Do not know

Do you keep a register of complaints from the general public?

☐ Yes ☐ No ☐ Do not know

How do you think reporting about your environmental performance would affect relations with local residents, nature protection groups or other interest groups?

☐ Significant improvement ☐ Small improvement
☐ No change ☐ Worsen

Do your employees show interest in implementing environmental measures?

☐ Yes ☐ No ☐ Do not know

SECTION 4: ADMINISTRATIVE BURDENS

Have you estimated the administrative burdens related to environmental regulation, reporting, and inspection?

☐ Yes ☐ No

If so, please estimate the working time spent on administrative issues _____ (working months/year)

Do you think that environmental authorities place a greater burden on you compared to other authorities?

☐ Yes ☐ No ☐ Don't know

What is the most burdensome process?

☐ EIA/environmental expertise
☐ Obtaining nature resource use licenses
☐ Obtaining emission permits
☐ Providing reports
☐ Inspection

SECTION 5: FINANCIAL AND MARKET ASPECTS OF ENVIRONMENTAL PROTECTION

Financial aspects

Do you think that reducing your environmental impact could help you to reduce the amount of monetary penalties paid?

☐ Yes ☐ No ☐ Do not know

Do you think that environmental measures can contribute to improving your production processes?

☐ Yes ☐ No ☐ Do not know

If so, do you think that this increased efficiency can create cost-savings for your company?

☐ Yes ☐ No ☐ Do not know

Has your bank requested any information about your environmental performance or liabilities?

☐ Yes ☐ No ☐ Do not know

Has your insurance company requested any information about your environmental performance or liabilities?

☐ Yes ☐ No ☐ Do not know

Do you think your bank will apply environmental criteria when considering loan applications from businesses in the next 3-5 years?

☐ Yes ☐ No ☐ Do not know

Do you think that your insurance company will apply environmental criteria when considering applications from businesses in the next 3-5 years?

☐ Yes ☐ No ☐ Do not know

Market

Are your customers making any demands regarding the environmental impact of your products or services?

☐ Yes ☐ No ☐ Do not know

Do you feel that over the next 3-5 years existing or potential customers will begin to make such demands?

☐ Yes ☐ No ☐ Do not know

What risks does your business incur if you ignore real or possible changes in your market due to the environmental concerns of customers?

☐ Very high ☐ Fairly high
☐ Some degree of risk ☐ No risk ☐ Do not know

Are your competitors gaining competitive advantage in marketing their goods or services as a result of implementing environmental management?

☐Yes ☐ No ☐ Do not know

Are any of your competitors gaining additional market share as a result of better environmental performance?

☐ Yes ☐ No ☐ Do not know

Do you think that improving environmental performance at your company could create additional competitive advantage in marketing your goods and/or services?

☐Yes ☐ No ☐ Do not know

What risk do you incur if you do not match the environmental initiatives taken by your competitors?

☐ Very high ☐ Fairly high
☐ Some degree of risk ☐ No risk ☐ Do not know

SECTION 6: FEEDBACK ON ENVIRONEMNTAL REGULATION AND ENFORCEMENT

Please use separate sheets to provide any feedback on the quality of environmental legislation, licenses, permits, and inspection.

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