BUSINESS, ECO-EFFICIENCY AND SUSTAINABLE DEVELOPMENT

- THE ROLE OF ENVIRONMENTAL MANAGEMENT TOOLS

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Final Report

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EXECUTIVE SUMMARY

Sustainable development is not incompatible – and can be mutually supportive – with competitiveness. Business has many 'win-win' opportunities to create environmental and/or social improvement whilst increasing profits and market share. This can create new sources of employment.

Business has reconciled the need for sustainable development with the demands of competitiveness through the concept of eco-efficiency. This is 'business-friendly' and has led to the identification of many cost-effective pollution prevention schemes and other environmental improvements.

Nonetheless, more needs to be done. Economic growth is still increasing energy and resource consumption and action is required to decouple them. One question is whether current taxation structures and subsidy schemes encourage unsustainable resource consumption. The social and cultural dimensions of sustainable development have also received less business attention – and have less developed management tools - than the environmental dimension.

Addressing these challenges requires greater innovation by business. Governments can encourage such innovation by setting long-term sustainability targets (analogous to the Euro convergence criteria). This requires appropriate policy instruments, which set a direction but allow business more flexibility in getting there than traditional 'command-and-control' approaches. These instruments include incentive-based regulation and voluntary agreements with business. Participating in, or encouraging, partnership approaches by business – such as supply chain initiatives or multi-stakeholder collaborations such as the Global Reporting Initiative or the Forest Stewardship Council – is another means of stimulating innovative approaches.

The Commission could also take action with regard to the internal market. Environmental considerations could be made part of the essential requirements in the 'new approach' internal market directives. Some experts also believe that the existing rules on open public procurement are being interpreted in ways which make it difficult to set environmental criteria for purchasing.

In addition, Governments can do more to improve co-ordination and co-operation between different departments with regard to sustainable development and introduce environmental management systems into their own activities. They also need to 'speak the language of business' to ensure that any messages are understood by their recipients.

In most companies, sustainable development is not sufficiently integrated into business management. There needs to be more visionary leadership and environmentally aware workforces. Pressure from customers – through supply chains – and financial institutions are other important forces for change. One significant development is the Dow Jones Sustainability Index, which contains the companies deemed to be the most sustainable in each industry sector, and which has outperformed the Dow Jones Index itself. It seems to show that good environmental and social performance can benefit shareholders.

Financial and other stakeholders require more reliable and standardised information about business environmental performance than is currently available. This requires an institutional framework of expert, professional and regulatory bodies analogous to that supporting financial performance measurement. This could also help environmental and social management tools to be used more appropriately and effectively – which is a more urgent need than developing new ones.

Finally, the Internet is growing in importance as a means of disseminating information about sustainable development. It is also making many economic activities more eco-efficient – for example, by substituting transport of information for transport of people and goods. On the other hand, the information and access it provides could stimulate much higher levels of consumption. More research is needed to identify the precise costs and benefits of the Internet for sustainable development, and what the net effect is likely to be.

The main policy options generated by the conference were:

Creating Long-term Targets

Develop a small number of generic sustainable development 'convergence criteria', together with sector-specific indicators, and identify the policy measures which will be needed to achieve them.

Integrating Sustainable Development into Existing Community Activities

Incorporate environmental considerations into the essential requirements of the internal market "new approach" directives.

Examine the interpretation of public procurement rules.

Assess the sustainable development implications of all major policy proposals and instruments.

Further develop the EMAS scheme and apply it within Community organisations.

Informing and Facilitating Policy Development in Member States

Further examine and discuss the relationship between sustainable development and competitiveness in Industry Council meetings.

Create mechanisms to encourage identification of best practice, and exchange of experiences, between national governments.

Develop benchmarks to evaluate national government progress towards sustainable development.

Sponsor research on emerging topics such as the relationship between the 'new economy' and sustainable development.

Examine whether current taxation structures and subsidies are encouraging unsustainable resource consumption.

Facilitating and Contributing to Institutional Frameworks

Identify opportunities to develop new, and contribute to existing, multi-stakeholder partnerships (such as those trying to standardise environmental reporting and performance measurement).

Create new European networks and a Web site to support the development of management tools.

Convene a workshop on social management tools.

Facilitate the development of regional sustainable development innovation networks.

Support the development of trans-national supply chain initiatives.

1. GENERAL CONFERENCE THEMES

The conference presentations and discussions covered all the three 'pillars' of sustainable development – economic development, environmental protection and social inclusion – with a focus on the role of environmental management tools in helping to achieve these objectives.[1] The main themes which emerged were:

Sustainable development: an important element in competitiveness

Eco-efficiency is a valuable concept … but more needs to be done

The social dimensions of sustainable development require more attention

Governments must encourage long-term innovation related to sustainable development ….

By using appropriate policy instruments

Governments should address policy barriers and do more in their own operations

Governments must speak the language of business ….

And take appropriate measures to encourage greater action by SMEs

Business should better integrate sustainable development concerns into its activities ….

Which requires leadership and personal change

Focused multi-stakeholder partnerships can be effective

The growing importance of the internet

The importance of institutional frameworks

The relevance of financial bodies

Using tools appropriately.

The following paragraphs describe each of these themes in turn.

[1] The author is indebted to the session rapporteurs, Tarcisio Alvarez-Rivero (UN), Pedro Henriques (European Commission), Nick Johnstone (OECD) and Faria dos Santos (INETI), for their summaries of the conference proceedings.

Sustainable Development: A Factor for Competitiveness

Environmental and other actions to support sustainable development have often been perceived as a cost, which is necessary to meet legislation and/or the demands of stakeholders. However, there is growing evidence that companies are identifying many opportunities for 'win-win' innovation which delivers both economic and environmental benefit. This seems to be particularly true if they are given (or give themselves) long-term targets, but have considerable flexibility in achieving them (see below). In addition, good environmental and social performance is a precondition for entry into many markets.

Hence, the relation between sustainable development and competitiveness needs further examination, especially in the context of the structural changes created by the emerging 'new economy'. One suggestion is that the Industry Council should include sustainable development as a permanent item in its discussions on competitiveness.

Eco-efficiency is a Valuable Concept … But More Needs to be Done

Most of the business, and many of the other, speakers noted the positive value of eco-efficiency in integrating environmental and economic concerns. This makes it more of a business concept than resource efficiency, which merely considers the relationship between inputs and outputs, irrespective of economic factors. As a result the idea of eco-efficiency can be linked easily to mainstream business concerns such as productivity and profitability. There was also recognition of both the considerable improvements in eco-efficiency which have been made by 'leadership' companies, and their attempts to integrate broader sustainable development concerns, such as social impacts, into their activities.

Nonetheless, there was near unanimity amongst all speakers that the present rate of environmental improvement – and environmental improvement by itself - is insufficient to meet the challenge of sustainable development. More needs to be done in all areas of society, including business. Many speakers also expressed the view that, whilst Governments can provide supportive frameworks, many of the solutions lie in the hands of business and have to be implemented by it.

One aim has to be further decoupling of economic growth from energy and resource consumption. A suggested target is a 'factor four' - i.e. 75% - reduction in the environmental impacts of meeting the functional needs of consumers. The implication is that incremental improvements to current technologies and business approaches will be insufficient to meet this goal. Hence, new technologies and approaches will be required. Some 'factor four' improvements are already being introduced – several of the Portuguese case studies at the conference provided examples. However, many further improvements which are technically possible - as with the 'hypercar' which is being developed by the US Rocky Mountain Institute and partners - are not yet entering the marketplace.

An important role for environmental management tools is therefore to challenge complacency by highlighting what business needs to do in order to be sustainable. Individual speakers saw this as an important outcome from benchmarking, eco-design and environmental management systems.

The Social Dimensions of Sustainable Development Require More Attention

Eco-efficiency addresses the economic and environmental pillars of sustainable development but not necessarily the social pillar. Companies therefore need to move towards 'responsible entrepreneurship' which deals with all these issues. 'Social management tools' are less developed than environmental management tools so the latter must be extended to take social issues into account. As several Portuguese speakers noted, this is especially important in less wealthy countries within the EU and the world generally. This is being done in the area of reporting by the Global Reporting Initiative (GRI), much of whose template is concerned with social and sustainable development topics. GRI is also encouraging companies to find news of reporting which cut across traditional boundaries - for example, by reporting in terms of integrative sustainable development 'themes' such as diversity (encompassing both biological and human diversity).

One important social issue is employment and it may be time for more analysis of the relationship between eco-efficiency and jobs (which the OECD is already beginning). Previous research may not have captured the synergistic effects of environmental and social action and innovation within business.

Some speakers also saw sustainable development, particularly at the business level, as incorporating not only social inclusion but also topics such as ethics or cultural diversity. However, others see these as separate – albeit very important – issues from sustainable development *per se*.

Governments Must Encourage Long-term Innovation Related to Sustainable Development ….

There was broad agreement that traditional 'command and control' approaches are necessary to create improvement in laggards, but need to be supplemented by other approaches to encourage long-term innovation. One aspect of this is the setting of long-term targets, both for an overall economy and individual sectors. A successful model already exists in the form of the Euro 'convergence criteria'. By providing readily understood and actionable goals these played an important role in the successful implementation of the new currency. The adoption of such an approach for sustainable development could provide powerful signals to progressive companies about the direction they should be adopting. One speaker, Claude Fussler, proposed five core sustainability criteria - indicators of eco-efficiency, greenhouse gas emissions, freshwater availability, net job creation and social cohesion. The World Resources Institute has suggested four – emissions, energy, material throughputs and waste.

By Using Appropriate Policy Instruments

The targets could be implemented in mainstream business by means of voluntary agreements with, or declarations by, industry sectors – another topic of considerable interest to delegates. However, OECD research suggests that certain conditions must be fulfilled for such agreements to work. They are clearly defined targets; moving beyond what would be achieved by 'business as usual'; credibility (i.e. regulatory

action if business does not comply); good monitoring; and effective participation by stakeholders.

The ends of influencing the long-term direction of business can also be achieved by the means of environmental taxes and other incentive-based regulation. However, although a number of speakers argued that there must be a long-term shift from taxing income and wealth to taxing environmental 'bads', there is concern about the short-medium term market distortions which can be created by such measures.

Governments can also help to raise awareness of sustainable development issues in R&D, and foster technologies which support sustainable development. In this respect, it is interesting to note that a Swiss rating and asset management company, SAM, have developed both generic and sector-specific lists of such technologies as part of assessing company eligibility for the Dow Jones Sustainability Index. (The Index contains the companies deemed to be the most sustainable in global industry sectors).

Several contributors also felt that there is scope for the Commission to take action with regard to the internal market. One option is to include environmental considerations in the 'new approach' internal market directives (which establish a broad framework but leave the details of technical harmonisation to standards bodies). This would mean environment becoming part of the essential requirements which the standards bodies must take into account when doing their work. There is also a perception that the existing rules on open public procurement are being interpreted in ways which make it difficult to set environmental criteria for buying.

However, the implementation of these points raises questions about the demarcation, both between Government and industry, and between local, national and international agencies.

Governments Should Address Policy Barriers and Do More in their Own Operations

Several speakers noted the ways in which Governments either impede, or fail to support, good environmental and social performance by business. One frequently cited example is subsidisation of energy and other resource prices, with the result that consumption - and associated environmental impact - is higher than it would otherwise be. Subsidies to resource industries can have similar effects.

Another theme in the conference was a need for better co-ordination and co-operation between different departments of the same Government.

Governments are also the largest single buyers in many developed countries. They therefore have opportunities to place greater weight on sustainable development criteria in their purchasing decisions – as is now the case with (at least) the Canadian and Japanese Governments. Finally, Governments could set an example by achieving EMAS and/or ISO 14001 for their own operations.

Governments Must Speak the Language of Business ….

Several speakers noted the importance of Government understanding, and speaking, the language of business when setting and implementing sustainable development policies. This does not mean conforming to all business demands. It does mean a recognition that companies, and small business in particular, are often not familiar with the terms used by policy-makers and experts and/or interpret them in different ways.

One way of overcoming this difficulty is using companies to speak to other companies. In particular, customer demand is the quickest means of getting business to change. Hence, pressure from large business customers may be the best lever to encourage small business to take sustainable development seriously. Speakers from a number of countries described Government initiatives to encourage greater environmental and social awareness and action within supply chains. Some businesses are also doing this independently. One Portuguese company noted how its own environmental initiatives were boosted by the policy of a leading customer that all timber supplies had to be from Forest Stewardship Council accredited sources. The conference also provided an opportunity for several leading companies to launch a new Portuguese Enterprises Association for Sustainable Development. This will, with the support of the government, stimulate more action on eco-efficiency and other sustainable development issues within Portuguese business.

And Take Appropriate Measures to Encourage Greater Action by SMEs

Many speakers noted that, in general, SMEs are paying little attention to environmental and social issues. Given their large share of GDP in most OECD countries, this is a serious problem. The main cause appears to be a lack of resources and time.

Of course, one way of overcoming these barriers is to speak the language of business and to support supply chain initiatives. Another is to create networks, pilot projects and business-focused information schemes which can bring companies together and highlight examples of best practice. One example is waste minimisation clubs. The UK's Environmental Technology Best Practice Programme also provides short, 'user friendly', case studies and guidance material. This has produced savings of 10 euros in business for every euro spent by Government. In addition, the Web can be used to make information more easily accessible than in the past.

An Irish initiative, which has now been adopted in the UK, is also breaking down ISO 14001 accreditation into five sequential stages which companies can progress through at their own pace. This will make it easier to develop environmental management in an incremental manner and therefore overcome the barrier of having to make an 'all or nothing' decision to commit resources.

Business Should Better Integrate Sustainable Development Concerns into its Activities ….

Many speakers noted that, even when companies are making good use of environmental management tools, they are not necessarily influencing mainstream

management. The analogy is with 'end of pipe' equipment which is bolted on to processes without changing the way they operate. Two crucial functions within companies which, in general, are not yet taking sustainable development seriously are finance and marketing. One means of changing this situation is to make sustainability a factor in determining the performance-related pay of senior managers, which several companies are now doing. Another is to heighten their awareness of the long-term costs and foregone opportunities of being unsustainable. This does appear to be happening as a result of the creation of the Dow Jones Sustainability Index.

There is even less integration of social management tools, in part because they are less well developed than environmental management tools. However, some companies are taking action and interest is growing amongst others.

Which Requires Leadership and Personal Change

Sustainable development is ultimately about people and their values. At the top of business organisations this means visionary leaders who can establish long-term goals and drive the change which is needed to achieve them. These are needed to provide the first half of the 'top down, bottom up' amalgam which is needed to modify organisational values and behaviours. Without such leaders, change will founder on the rocks of short-term pressures and day-to-day urgency. But equally, leaders require support within their organisation – and without an environmentally aware workforce little will happen at grass roots level. Education and training is therefore vital. So too is better education of, and information for, consumers whose behaviour – many speakers suggested – must change if sustainable development is to be achieved.

Focused Multi-stakeholder Partnerships can be Effective

Transparency of information, and dialogue with stakeholders, is an important element in business responses to sustainable development issues. The conference also provided a number of examples where collaboration between business, stakeholders and other bodies – variously described as multi-stakeholder dialogues, partnerships, collective actions etc. - has created or improved environmental management tools. These include:

> the Global Reporting Initiative which has brought together environmental NGOs, leading multinationals, professional bodies and other organisations and experts to develop a standard template for environmental and sustainable development reporting
>
> the Forest Stewardship Council, which has brought together NGOs, producers, traders, retailers and others to create a certification scheme for wood produced in a sustainable manner
>
> the work of the Society of Environmental Toxicology and Chemistry (SETAC) in developing and standardising life cycle assessment (LCA), which is now being extended through collaboration with UNEP to address the difficult issue of valuing environmental impacts.

It would seem that there is potential to apply such approaches to the development of new, or the improvement of existing, environmental management tools - possibly including the 'convergence criteria' identified above.

Stakeholder dialogue can also be very beneficial for individual companies, as Novo Nordisk has found.

The Growing Importance of the Internet

One of the key roles of environmental management and sustainable development tools is the generation and communication of information. This can often be more cheaply and easily accomplished by placing this information on a Web site than through traditional means of dissemination. Many companies are now placing supplementary information to their environmental reports on such sites, and in some cases abandoning printed versions entirely. Sony is also using the Web to disseminate detailed information about the environmental performance of its products. Regulators too are using the Web to disseminate regulations and advice companies how to respond to them. They can also be used to develop communities of people with similar interests – the European Environment Agency has established a number of these whilst the World Resources Institute has an on-line forum to support the development of standardised carbon dioxide emission metrics.

Several speakers noted the broader issue of the 'new economy' and its relationship to sustainable development. Is the development of advanced computing, broadband telecommunications, e-commerce, the Internet and the other technologies of the digital age going to support or impede environmental improvement and social inclusion ? The potential benefits include reduced wastage from greater optimisation of economic processes, substitution of electronic for physical processes – as when videoconferencing replaces transport – and easier access to knowledge for all. Some potential costs include the 'rebound effect' – for example, people moving much further from the office when telecommuting allows them to be for two days instead of five – and the increased range of consumption, contact and trading opportunities created by the 'death of distance'. Both aspects need further evaluation.

The Importance of Institutional Frameworks

The development of sustainable development management tools can be compared to that of financial management tools. There too, companies have had a need to measure a wide variety of parameters in order to improve performance and provide information for both internal management and external stakeholders. Financial standardisation has also been important in allowing stakeholders to rely on the information provided, and to make comparisons between companies. But it has taken over a century to achieve, and has been enabled by the interplay of a number of specialised bodies. These include - in the US - the Accounting Standards Board, the Securities Exchange Commission, Moody and other financial rating agencies, ad hoc expert bodies etc. Several of the speakers saw their activities as creating a comparable institutional framework for environmental and sustainability management - for example, GRI can be seen as an informal version of the Accounting Standards Board.

A related theme for a number of speakers is the value of standardisation with regard to management tools. This potentially makes them easier to understand and apply, and also makes the results more credible to users.

The Relevance of Financial Bodies

The Dow Jones Sustainability Index highlights the growing interest of investors in sustainable development issues. Many speakers see financial institutions as perhaps the most important influence on business decision-making. Hence, they place high priority on any actions which might develop this interest further. UNEP's financial institutions initiative has already achieved a great deal but there is scope for more. The Dow Jones Sustainability Index, for example, is proprietary and a global index – there may be scope for the development of alternative indices such as ones covering national or European stocks. Investors also place great emphasis on good information but do not appear to be getting it from environmental reports. These are too unreliable for sustainable development investment experts such as SAM, and too detailed and complex for non-experts who simply want 'headline' information. The needs of both might be better met by more detailed and standardised reporting of some core sustainable development parameters (with environmental ones perhaps being the easiest to standardise at present). In addition, the needs of the non-expert could be met by a standard template for summarising sustainable development issues in annual financial reports. There is also growing interest in the development of standard templates for environmental product declarations – for example, that developed by ABB.

Using Tools Appropriately

The conference identified and discussed a variety of environmental management and sustainable development tools. One way of classifying them is by their objective – for example, analysis and evaluation, action and communication. Another is by their level of application – strategic or operational. A third is by their content – quantitative, qualitative or a mixture of both. A number of speakers noted that tools are not always used appropriately or to their full potential. For example, life cycle assessment (LCA) has often been used to provide apparently objective comparisons of products. This has been unsuccessful because it is always possible to challenge the assumptions which underlie the analysis. It appears to be more valuable as a tool for product improvement and design and strategic business and policy development. More information about the strengths and weaknesses and best means of applying individual tools might therefore be useful.

One general point made by a number of speakers is that the most effective tools are usually the simplest. Another is that the process of using tools can also create benefit. It can, for example, establish a dialogue between people of different backgrounds and viewpoints which makes it easier to identify areas of agreement and the priorities for action.

2. POLICY OPTIONS

A number of policy options for the European Commission and Member States emerged from the conference. They can be grouped under four main headings:

1. Creating Long-term Targets

1.1 Develop a small number of generic sustainable development 'convergence criteria' analogous to those used in the development of the euro, perhaps in collaboration with other agencies.

1.2 Supplement these with sector-specific indicators, created in collaboration with sectoral organisations, leading companies in a sector where appropriate, and other stakeholders.

1.3 Identify appropriate policy measures to achieve these targets, for example, initiatives for standardised performance indicators and reporting, and identification and dissemination of emerging technologies which seem most likely to contribute to them.

2. Integrating Sustainable Development into Existing Community Activities

2.1 Incorporate environmental considerations into the essential requirements of the internal market "new approach" directives.

2.2 Examine whether existing public procurement rules are being implemented in a way which prevents full weight being given to environmental and social considerations.

2.3 Develop a simple sustainable development assessment template or 'scorecard' which could be used in developing all major policy proposals and instruments. This would pose some simple questions such as whether the measure is likely to, for example, help meet the convergence criteria, create additional demand for natural resources, or make it easier for business organisations to adopt proactive environmental and social policies.

2.4 Further develop the EMAS scheme to reflect developments in ISO standards, particularly the development of guidance documents, staged certification of environmental management systems to make the scheme more accessible to small business, and taking greater account of broader sustainable development issues.

2.5 Apply the EMAS scheme within Community organisations.

3. Informing and Facilitating Policy Development in the Commission and Member States

3.1 Create mechanisms to encourage identification of best practice and exchange of experiences between national governments. One possible area is to review the effectiveness of national environmental policy instruments – especially voluntary agreements and incentive-based regulation - and the conditions which make them successful. Another is the extent to which national export credit agencies incorporate sustainable development issues into their decision-making. A third is the scope for – and criteria for successful implementation of – measures to disseminate information about best practice in business.

3.2 Develop benchmarks to evaluate national government progress towards sustainable development.

3.3. Create better informed policy discussions through targeted research, particularly on the relationship between employment and eco-efficiency (perhaps in collaboration with OECD) and on the relationship between the 'new economy' and sustainable development.

3.4 Examine the extent to which current taxation structures and existing subsidies encourage the use of natural resources in ways which are contrary to sustainable development.

4. Facilitating and Contributing to Institutional Frameworks

4.1 Identify opportunities for, and facilitate the development of, new multi-stakeholder partnerships to address areas of pan-European concern, perhaps on a pilot basis initially but with the aim of further development if these prove successful.

4.2 Contribute to existing initiatives to standardise the practice of environmental reporting, perhaps in collaboration with the Global Reporting Initiative and/or other organisations. Areas not yet addressed by GRI include frameworks for publication of environmental and sustainable development information in financial reports; a framework for environmental product declarations; and a framework for site reporting (which could, of course, build on experience with EMAS statements).

4.3 Create new networks to support the development of environmental and sustainable development tools, building on the experience of current EU-sponsored initiatives. Possible areas for this include sustainable product development, eco-efficient services, environmental and social reporting and social performance indicators.

4.4 Convene a similar workshop to Lisbon, but focused on the topic of social performance indicators and management tools. A useful output might be a guidance document for organisations wishing to pay greater attention to social considerations in their decision-making

4.5. Facilitate the development of regional sustainable development innovation networks. These could provide a forum for leadership companies, experts and others to exchange information on sustainable development trends and share examples of best practice.

4.6 Support the development of trans-national business-to-business initiatives by leading European companies, especially schemes which would encourage their second and third tier suppliers to pay greater attention to environmental issues.

4.7 Create or enable a reference document/web site on environmental and sustainable development management tools and their applications which could be easily accessed and understood by SMEs.

3. SUMMARIES OF PRESENTATIONS[2]

WELCOME AND KEYNOTE ADDRESSES

Chaired by Vitor Ramalho, Deputy Secretary of State of Economy

Fabio Colasanti, General Director, Enterprise Directorate-General, European Commission

The Community is developing strategies to integrate environmental aspects and sustainable development into all its policies.

The options under consideration in the field of enterprise policy include incorporating environmental aspects into internal market "new approach" directives, promoting the use of benchmarking tools, spreading Government and business best practice, examining the impact of current and prospective EU regulations and policies on firm's environmental behaviour, and developing policy performance indicators for measuring progress towards sustainable development.

Opening the conference, Mr. Colasanti believed that a common starting point is a feeling that not enough is being done to achieve sustainable development. One cause is a lack of effective integration of environmental aspects into public and business policies. Although industry has already done a great deal to improve its environmental performance, its still large direct impacts – and its influence on consumers - require it do more.

The main drivers of environmental action by business are 1) self-interest (e.g. saving money by reducing waste), 2) a sense of responsibility, beyond environmental awards, 3) market pressures from consumers, investors etc., and 4) Government regulations and policies. Although the fourth driver captures the headlines, national governments and the Commission can influence all of these.

There is a trend towards voluntary agreements with groups of companies to improve environmental performance. These establish long-term targets but give participants considerable freedom on how to achieve them. The evidence is that business can live with binding, ambitious, agreements of this kind provided that they are stable, foreseeable, non-arbitrary, provide a rough equivalence between major industrial countries, and don't stifle creativity. It is also important to prevent the fragmentation of the internal market.

DG Enterprise is working on a strategy for integrating sustainable development into enterprise policy. An action plan will be developed during the year 2000 and this workshop should provide suggestions for that purpose. Potential future actions include the integration of environmental considerations in the essential requirements of the internal market "new approach" directives, the use of benchmarking tools and

[2] For quick reading, the key points of each presentation are summarised in italics.

the spreading of Government and business best practice. Progress should be measured by developing appropriate indicators.

Ernst von Weizsaecker, President, Wuppertal Institute

Local pollution issues are getting better in developed countries but system problems such as climate disasters created by global warming are getting worse

Governments and business have to aim for at least a 'factor 4' improvement in the environmental performance of most product chains - there is the technical potential to achieve this but more needs to be done to realise it.

With regard to local pollution, there is a typical transition from being poor and clean, through rich and dirty to rich and clean. The fact that developed countries are now rich and clean with regard to air and water disguises the fact that many systemic problems are worsening. The most obvious of these is global warming, which is in all likelihood already creating climatic disasters such as the Mozambique floods. Absent radical measures – and the level of carbon dioxide emissions needs to halve merely to stabilise atmospheric concentrations - the scale of disasters could increase and sea levels rise. This could mean, for example, large parts of Italy – and the cities of Naples, Rome and Venice - below sea level by the end of the century. In addition, the world is still reliant on fossil fuels, which will not be available in future.

Studies by the German Wuppertal Institute and the US Rocky Mountain Institute have shown that the technologies exist, or can be developed, to allow at least 'factor 4' improvements in environmental performance. Prototype 'hypercars' have the potential to run for 100 kilometres on 1.5 litres of fuel. Some new German office buildings run with only 10% of the heat and 25% of the electricity equivalents of traditional equivalents and buildings with zero heat inputs are by no means impossible. Supply chains can also be greatly optimised to create fewer journeys with higher capacity utilisation.

More needs to be done to raise awareness that such radical eco-efficiency improvements are possible, and to encourage their adoption by industry. An ecological tax reform can help shift technological progress towards 'factor 4' technologies. The power of investors gives them an especially important role in this. More effort is also needed to introduce environment into supply chains – as with the Japanese initiative to create Green Purchasing Networks.

Carlos Campos Morais, President, INETI

INETI has established a centre for sustainable enterprise development to foster proactive environmental approaches within the Portuguese economy

This builds on INETI's existing work in consultancy, information and training on environmental management tools, much of it funded by the European Union and based on collaboration with Portuguese business.

INETI – a scientific and technical research and advisory centre linked to the Ministry of the Economy – is helping to improve the environmental performance of Portuguese

industry through consultancy, information and training programmes. These encompass auditing, eco-design, life cycle assessment, management systems and other environmental management tools. Much of this has been directly supported by the European Union.

INETI has now established a centre for sustainable industrial development, CENDES-INETI, to give further focus to its work and to help foster more proactive environmental attitudes in Portuguese industry and public administration. It will work closely with the AIP, building on existing co-operation in working with SMEs under the EU's ADAPT programme. One important task is to strengthen existing eco-design and clean technology initiatives in the ceramics, electrical products and glass industries. Two others are the definition of environmental and social indicators, and the adoption of industrial ecology approaches to waste management.

Vitor Ramalho, Deputy Secretary of State of Economy

The Portuguese Government recognises that all sectors of industry need to place greater emphasis on environment

Environment will therefore be a priority in the 2000-2006 EU structural programme for Portugal.

Since the great world explorations of the fifteenth and sixteenth centuries Portugal has always had a global awareness. The Portuguese Government therefore recognises the importance of sustainable development and the need for this to be integrated into EU and national policies.

For the Ministry of Economy, the challenge is to change the patterns of production and consumption and achieve greater resource productivity by encouraging industry to develop cleaner products and technologies. This is being enabled by the work of INETI and CENDES-INETI and other mechanisms, such as awards for good environmental performance. European programmes are also very important in achieving these goals. In particular, the third Community support framework for Portugal, running from 2000 to 2006, will place great emphasis on environment, especially with regard to the SMEs who form the bulk of Portuguese industry.

SESSION 1: THE CONTRIBUTION OF BUSINESS TO SUSTAINABLE DEVELOPMENT – THE VIEWS FROM STAKEHOLDERS

Chaired by Fabio Colasanti, General Director, Enterprise Directorate-General, European Commission (first part) and Constança Peneda, Director, INETI-CENDES (second part)

Claude Fussler, Director, Stakeholder Relations, World Business Council for Sustainable Development

Economic growth can be decoupled from environmental impacts if the potential for greater resource productivity and eco-innovation is taken

A small number of sustainable development 'convergence criteria' (analogous to the economic criteria used to develop the Euro) are needed to provide long-term targets for Governments and progressive business.

The World Business Council for Sustainable Development (WBCSD) has a direct membership of 126 multinationals and a further 700 companies are affiliated via 25 regional councils in developing countries. The Council acknowledges that more needs to be done to resolve environmental problems and move to sustainable development. This can be compatible with sound business objectives because of the potential to innovate and make processes and products eco-efficient. The evidence strengthens that good environmental and social performance is linked to good business performance – for example, the new Dow Jones Sustainability Index is out-performing the ordinary Dow Jones Index.

There is now a comprehensive 'tool box' of practices and standards to help improve business environmental performance. Through the practice of eco-efficiency companies successfully de-link output from wastes, emissions and environmental impacts. They reduce costs and risks while increasing sales and corporate reputation.

Eco-efficiency is not just a business concept. Eco-efficient households will consume differently, benefit from quality of life while producing less wastes and impacts. Eco-efficient communities and regions will do the same. Eco-efficiency supports metrics, quantified targets and performance transparency. The WBCSD recommends that eco-efficiency principles and targets be adopted by the major policy reviews underway. The Prodi Group on *Growth, Competitivity, Employment and Sustainable Development*, and the preparation of the 6th European Environmental Action Plan, should understand and adopt the complementary relationship eco-efficiency has to responsible entrepreneurship, innovation, competitiveness and employment.

Europe has just successfully designed a single common currency. It did so by reducing the complexity of the task to a powerful set of complementary convergence criteria - debt, deficit and inflation. It set targets that described a healthy economy. It got there. A transition to sustainable development requires a similarly powerful set of convergence criteria. Only a few are required as too many can blur debate and stifle

action with too much detail. Five - such as indicators of eco-efficiency, greenhouse gas emissions, freshwater availability, net job creation and social cohesion – could drive comparable progress towards sustainable development.

If Governments, business and stakeholders set targets for these parameters they provide long-term goals for companies to innovate and achieve leadership. New practices can then be embedded in negotiated agreements with entire business sectors and the setting of standards. Governments can concentrate on creating demand through consumer information and incentives. Only laggards who ignore these trends and focus on the short-term should be driven into compliance through regulations. This policy and regulatory process takes into account market forces and leverages business leadership and creativity. It is a more efficient transition towards sustainable development.

Jan Strömblad, Senior Vice President, Environmental Affairs, ABB

Collective initiatives by business and stakeholders are vital in achieving sustainable development

More work needs to be done on the development and implementation of international sustainable development standards.

During the 1990s leading business has introduced many environmental management tools and begun to consider product life cycle impacts. However, more needs to be done to deploy these across all of industry, and to cover all the issues of sustainable development – a task which will require development of social management tools. At present, most environmental legislation focuses on local/regional issues which are of immediate public concern. More needs to be done on less obvious, global, issues such as biodiversity and climate change.

One mechanism for speeding progress is collective initiatives by business, either alone or working with stakeholders. Some examples are the ICC Business Charter for Sustainable Development (which sets out 16 principles for environmental management); the chemical industry's Responsible Care initiative; the World Energy Council; the World Business Council for Sustainable Development; the World Commission on Dams and a number of ISO initiatives.

The World Commission on Dams is a particularly complex and ambitious example. This has 55 organisational members representing a variety of stakeholders and has initiated four regional consultation exercises. It is preparing a number of case studies and thematic reviews, has conducted a survey of 150 dams and will soon publish guidance on sustainable development issues in dam development.

The ISO initiatives include the 14001 standard on environmental management systems and a number of guidance documents which are currently being prepared - ISO 14010-15 on environmental auditing; ISO 14020-25 on environmental labeling; ISO 14030-32 on environmental performance evaluation and ISO 14040-49 on life cycle assessment. ISO has also established a working group on climate change to examine how ISO activities can help support the objectives of the Kyoto Protocol.

Alistair Keddie, Director, Environment Directorate, Department of Trade and Industry, UK

Many existing environmental initiatives are too complex for business, especially SMEs – they need to be simplified and to be based on more business inputs

Government and business have different languages and ways of thinking – it is very important to understand and overcome this if initiatives are to be successful.

The solutions to environmental problems primarily lie with business. The response to many policy initiatives has been disappointing, for example, take-up of formal environmental management systems. In January 2000 the European Union had 6325 certifications for ISO 14001 and 2750 registrations for EMAS. Most of these were achieved by larger organisations. The reasons for the low take-up include the complexity of the processes; a perception that systems are irrelevant or ill-suited to most companies needs; competition with other demands on manager's time and resources; and a lack of credibility in Government campaigns to encourage adoption.

The DTI's response has been to develop a simplified five stage route to introducing a system which companies can follow at their own pace (see presentation by Michael Jones below for more detail). Another useful tool is the identification and dissemination of best practice – the Environmental Technology Best Practice Programme publishes many case studies and reports, supports benchmarking initiatives in selected sectors, and provides subsidised advice to companies. Analysis shows that its business 'customers' have saved £10 of savings in business for every £1 spent. Compiling and disseminating such evidence of the commercial benefits of environmental action is another important role for Government.

The way forward is to link measures to business self-interest; keep them concise and simple; use business terminology and language; use marketing appropriate to a business audience; make use of business-to-business persuasion wherever possible (e.g. by working with supply chains); give clear, unambiguous, signals on what's expected; and to provide a high degree of flexibility in meeting objectives.

Lise Kingo, Corporate Vice President, Stakeholder Relations, Novo Nordisk

Novo Nordisk gains many business benefits from its stakeholder consultation processes

It is supporting the new sustainable development reporting guidelines of the Global Reporting Initiative (GRI) and has agreed to be a pilot company for Guidelines.

Novo Nordisk is integrating the 'triple bottom line' – good economic, environmental and social performance – into its business. To succeed in this it is vital to address a number of critical processes. The first one is engaging the interest of staff, including senior managers. For multinationals, there is then the challenge of spreading awareness and actions across all of their operations. Another critical process is learning and reflection. This is very important because sustainable development issues are more system oriented and involve more external dialogue than traditional management concerns. Furthermore, achieving and reviewing improvements as well

as setting and reporting on targets is a crucial process as well. (An area where Novo Nordisk is a pilot company for the Global Reporting Initiative guidelines). So too is integration of topics within the sustainable development agenda (i.e. environment, health & safety, ethics, social responsibility) into all of the company decision processes so that they cannot be stopped by adverse business conditions. Finally, there has to be stakeholder dialogue and partnership to discuss overall outcomes and establish an agenda for the next cycle.

Novo Nordisk has found a number of benefits from its stakeholder consultation processes. These include achieving a common understanding and language; building personal relationships; avoiding misunderstandings; sharing knowledge; inputs to corporate focus areas; learning about issues (a two way process, as stakeholders also learn about the company); gaining a reputation as an initiator rather than a follower; and exposing staff to new views.

The more general benefits from its proactive policies towards sustainable development are minimising business risks and creating business possibilities; understanding signs from stakeholders; helping to shape – rather than having to react to – new legislation and regulations; a reputation for trustworthiness, which allows greater freedom of action and innovation in practice; helping to attract and retain talented people; meeting sustainable investment criteria (the company has been selected for the Dow Jones Sustainability Index); and demonstrating and reinforcing the company's cultural values.

Joke Waller-Hunter, Director, Environment Directorate, OECD

Decoupling environmental impacts from economic growth is now a major OECD objective – some progress has been made, but there is a long way to go

Governments should make more use of market-based instruments, amend policies to remove distortions which discourage good environmental performance, and help stakeholders express their environmental preferences in an informed manner

Firms which are environmental 'leaders' must try to ensure that their experience is diffused throughout the economy. This is particularly important in countries where regulatory capacity is limited.

Despite some successes, there are many areas where environmental impacts have not yet been decoupled from economic growth within OECD countries. Much of the progress which has been made in recent years has been due to the recognition on the part of many firms that "public" environmental objectives need to be reflected in their own decision-making. The number of "win wins" cited by companies is evidence of the value of doing so, and the growth and profitability of organic agriculture is just one example. However, for many environmental concerns which are long-lived and diffuse (e.g. climate change or loss of biodiversity) the gap between private and public interests may be too great and the Government will have to play an important role – both as a regulator and facilitator of the market.

What can Governments do? Firstly, they must remove environmentally perverse subsidies. Secondly, they must introduce "flexible" policies such as market-based

instruments, performance standards and (effective) voluntary agreements which allow firms to adopt the solutions which fit their conditions best. And finally, they must introduce information-based measures which allow different "stakeholders" to express their preferences for environmental quality in an informed manner. At the same time firms must recognise their wider environmental responsibilities. Many businesses are doing just this, and their experience must be emulated by others. This can be done through the supplier relationships, with environmental "leaders" encouraging and assisting others in the supply chain. Retailers and investors can also play an important role. The importance of these responsibilities must be accentuated in cases where firms are investing in countries where regulatory capacity is limited.

Much of the OECD work is aimed at "getting this message through". This includes working on an sustainable development initiative, which will result in concrete policy recommendations in mid 2001, and developing an environmental strategy, in which we expect increased resource efficiency to be a major objective.

Ari Huhtala, Senior Programme Officer, Production & Consumption Unit, UNEP/DTIE

Kofi Annan has called on multinationals to embrace and enact three key international agreements on human rights, labour practices and sustainable development

UNEP is supporting this through a number of collaborative initiatives with industry.

In the 1999 Davos World Economic Forum Kofi Annan challenged world business leaders to create a global compact to "embrace and enact" the principles of three international agreements – the Universal Declaration of Human Rights, the International Labor Organization Declaration on Fundamental Principles and Rights at Work and the Rio Declaration of the UN Conference on Environment and Development. The environmental principles of this compact are that businesses should support a precautionary approach to environmental challenges; undertake initiatives to promote greater environmental responsibility; and encourage the development and diffusion of environmentally friendly technologies.

UNEP is supporting the compact through a series of collaborative initiatives including the Global Reporting Initiative and sectoral ones with financial institutions and insurers, tour operators, auto companies, telecommunications companies and oil & gas and mining companies. UNEP charges a membership fee and provides a secretariat. Companies can benefit from participation in such initiatives by developing forward looking strategies, improving their corporate image, helping to shape – and anticipate - Government policies and from sharing best practices and tools.

The most advanced initiative is that for financial institutions and insurers. This has developed two codes of conduct – the 1992 UNEP Statement by Financial Institutions on the Environment & Sustainable Development (185 signatories to date) and the 1995 Statement of Environmental Commitment by the Insurance Industry (85 signatories). The initiative's objectives are to raise awareness on appropriate strategies and tools; include environmental and sustainable development considerations into business operations; establish an area for dialogue and information sharing; promote sustainable and green investments and to highlight the link between

economic and ecological performance. It achieves this through annual international conferences, joint outreach meetings, working group activities, a joint newsletter with banks, preparation of position and issue papers, and press and media outreach.

Tarcisio Alvarez-Rivero, Division for Sustainable Development, United Nations

The Commission on Sustainable Development (CSD) is encouraging multi-stakeholder dialogues

The CSD is placing particular emphasis on consumer information for sustainable development, environmental technology transfer, regulation using market instruments, and environmental management accounting in business.

The United Nations believes that business has a major role to play in achieving sustainable development. The Commission on Sustainable Development (CSD), which was created to follow up on Agenda 21 – the UN programme of action for sustainable development developed at the 1992 Rio Earth Summit – is involving industry in its processes and has a number of work programmes addressing industry issues. At the 1999 World Economic Forum in Davos, the UN Secretary-General, Kofi Annan, also challenged world business leaders to embrace and enact a Global Compact on human rights, labour and the environment, both in their individual corporate practices and by supporting appropriate public policies. He urged business to support a precautionary approach to environmental challenges, to undertake initiatives to promote greater environmental responsibility, and to encourage the development and diffusion of environmentally friendly technologies.

The CSD's sixth session, in 1998, debated the role of industry in sustainable development, with participation by industry representatives. The session report called on industry to take greater responsibility for sustainable development in such areas as consumer information, education and training, environmental management and eco-efficiency, and technology transfer. The session also included a two-day "multi-stakeholder dialogue" with representatives of governments, industry, trade unions and NGOs participating on an equal basis. That dialogue now appears to be a regular part of CSD meetings, with a dialogue on tourism in 1999, a dialogue on land use and agriculture in preparation for this year and one on energy and transport for 2001.

One important area of UN work is consumer information. In December 1999, the General Assembly unanimously adopted a new set of Guidelines for Consumer Protection. These call for collaboration between government, industry and other groups in promoting sustainable consumption through such means as product profiles, environmental reports by industry, eco-labelling, and product information hotlines.

Another important area is technology transfer. The 1998 CSD session included presentations by 26 companies from both developed and developing countries on company-to-company technology transfer. The case studies and an analytical summary were subsequently published, together with the Commission documents on the industry theme. The Commission recognises that company-to-company transfer, and intra-company transfer within multinationals, is the most effective mechanism to transfer not just the hardware and knowledge, but also the on-the-job experience in

operating procedures and management systems which is vital to success. It therefore called on governments to create a policy environment which is conducive to this.

A third area has been that of economic instruments. Among the major topics of discussion in recent years have been the reduction and elimination of environmentally harmful subsidies, internalisation of environmental costs, "green" tax reform and eco-labelling. While there is no international consensus on these issues, there is recognition of the importance and value of economic instruments to change corporate and consumer behaviour.

A fourth area is a new working group on governments' role in promoting environmental managerial accounting (presented in session 4), which also includes industry and professional representation.

One common theme in this work is a belief that business not only has environmental and social responsibilities, but can benefit from profitable opportunities for eco-efficiency and eco-innovation.

In conclusion, governments, and inter-governmental organizations such as the United Nations, must ensure that the appropriate policy frameworks are in place to effectively encourage industry to take responsibility for their role in sustainable development, and together with the help of civil society as a whole, recognize and reward the businesses that do.

Christian Kornevall, Deputy Director-General, World Wildlife Federation

Not enough is being done to respond to environmental challenges – and Governments are often making things worse by subsidising resource consumption

The Forest Stewardship Council – a multi-stakeholder partnership – has been very successful in certifying sustainably produced wood products and similar initiatives are now being launched to protect marine resources and recognise business actions to reduce greenhouse gas emissions.

WWF is the largest environmental NGO with 4.7 million supporters, over 100 national organisations and an annual budget of $360 million. However, this is small compared to big companies which dwarf many national economies and influence millions of people through their activities. Despite some progress, most planetary eco-systems are under severe stress. Global warming is happening and two thirds of the world's population will face a freshwater crisis within a few decades.

The key question is how Governments and societies can speed up the development and use of eco-efficient technologies. One major weapon is price – yet many resource prices today are perversely distorted by public subsidies. The most bizarre example is fisheries, where subsidies are financing over-fishing.

One aspect of WWF's work is the creation of collaborative initiatives with progressive businesses. The most developed example is the Forest Stewardship Council, which brings together producers, traders, users, NGOs and others in a scheme to certify sustainably produced wood. The WWF's Forests for Life initiative

has a target of 25 million hectares of certified forests by 2001 – which is one step towards its overall target of large-scale protected networks of biodiversity by 2010. A WWF/World Bank initiative also has longer-term targets of certification for 100 million hectares of temperate forest and 100 million hectares of tropical forest.

WWF is also working with Unilever to establish a parallel Marine Stewardship Council to provide similar certification for sustainably produced marine resources. In addition, a new Climate Change Initiative is providing WWF recognition and promotion of companies which are deemed to be taking action to reduce their contribution to global warming.

Joanaz de Melo, Geota and New University of Lisbon

Environmental management systems must be focused on real environmental improvement rather than certification

Companies must address their broader environmental impacts even if this not required for certification of their environmental management system.

Geota is a leading Portuguese environmental NGO. The presenter also teaches environmental management and auditing at the New University of Lisbon. Environmentalists want business to be smart and to preserve its future through proactive action. Environmental management systems can help to achieve this but only if they are carefully implemented.

There are five main conditions for success – demonstrating its usefulness; intellectual honesty about environmental problems; the commitment of senior management; prioritisation of actions; and a focus on genuine environmental improvement rather than certification alone. Companies must also address their broader environmental impacts beyond traditional internal management, covering matters such as upstream and downstream effects, staff training and overall company policy. These are not highlighted in the ISO 14001 requirements. It is also important to be clear about objectives. In addition to environmental improvement, these include financial benefit, improvement in market share, better communication with stakeholders and an enhanced company reputation.

SESSION 2 – STATE OF THE ART AND NEW DEVELOPMENTS IN ENVIRONMENTAL MANAGEMENT TOOLS

Chaired by Antonio Pinheiro, Director General of Industry

H. Udo de Haes, Centre of Environmental Science, University of Leiden

LCA has been most successful in product improvement and design and strategic business and policy development rather than comparisons or definitive assessments of products

A SETAC/UNEP project is developing guidance on the categorisation and characterisation of environmental impacts.

Life cycle assessment (LCA) analyses the environmental impacts of goods and services from the cradle to the grave. It is necessary to avoid problem shifting from one part of the product chain to another, to enable integrated environmental management across the chain, and to identify the overall environmental impacts of products. In principle, LCA-studies are quantitative but some impacts are difficult to quantify and therefore have to be assessed in a qualitative way.

The oldest use of LCA has been comparisons of products – these have been their least successful application because it has been easy to challenge the assumptions made. More successful uses have been for product improvement and design and for strategic business and policy development. Examples include demonstrations that it may sometimes be environmentally better to deviate from the accepted hierarchy of waste management.

The International Organization for Standardization (ISO) has finalised a series of standards on LCA, focusing on the concepts, the technical framework, general methodological requirements and procedural requirements. However, these standards have not tried to standardise detailed methods or data. Some critical issues on which there is not yet consensus include allocation of impacts between co-produced outputs, system boundaries, whether average or marginal impacts should be the norm, and how different impacts should be related to each other and valued.

A new co-operation between the Society of Environmental Toxicology and Chemistry (SETAC) and the UN Environmental Programme (UNEP) now intends to address the latter question. The envisaged outcomes are a default categorisation of impact categories and recommendations as to the best available methods for characterisation of substances within these categories (i.e. for the adding up of substances within the given categories). There will also be guidance on how the results of this programme can be used as environmental performance indicators for business and Government.

Martin Bennett, Principal Lecturer, Gloucestershire Business School, and Chair, Environmental Management Accounting Network (EMAN)

Environmental management and accounting can be mutually supportive as environmental pressures on business are increasingly reflected in costs.

Many environmental costs are hidden in overheads - environmental management accounting can support environmental improvement by making these more visible.

An EU-sponsored Environmental Management Accounting Network is bringing together European practitioners and identifying and disseminating examples of good practice.

Environmental accounting covers several distinct activities, including the creation and use of information by the managements of businesses (environmental management accounting). This can include identifying and measuring environment-related costs and benefits; cost tracking and analysis systems; life cycle costing; integration of environmental with other business performance measurement activities; assessment of future environment-related costs as part of capital investment processes; and communicating the value of companies' superior environmental performance to their external financial stakeholders. A particularly valuable role is demonstrating the extent to which many environmental costs are hidden in overheads, which makes it difficult for companies to appreciate their full scale.

One leading company is the healthcare multinational Baxter, who produce annually an environmental financial statement which demonstrates that the business benefits generated by its environmental activities substantially outweigh their costs.

Environmental management accounting represents the application to environmental issues of leading practice in management accounting generally. Although the environmental management and the accounting functions have traditionally had only limited contact, there is substantial opportunity for mutually supportive co-operation. One aspect of this is using accounting techniques to make a business case for environment-related initiatives. Another is, as environment-related costs increase in significance for business, for environmental management to become an increasingly important element in achieving good business performance in conventional financial terms. Governments and policy-makers can further support this by supporting education and research, developing and demonstrating good practice in their own activities, and creating a supportive infrastructure (e.g. through creation of standardised databases, and encouraging environmental reporting by companies).

Robert Kinloch Massie, Chair, Global Reporting Initiative (GRI), and Executive Director, Coalition for Environmentally Responsible Economies (CERES)

GRI is midway through a 4-5 year multi-stakeholder process of developing a standard template for sustainable development reporting by organisations

It will be establishing a permanent secretariat although the location is as yet undetermined.

Corporate environmental reporting has grown rapidly during the 1990s - over 1000 companies are now producing them, including most of the world's largest multinationals. However, users have been complaining of inconsistency in the data reported which makes it difficult to accomplish their objectives (such as comparing the environmental performance of different companies).

There have been at least 13 initiatives to develop a standardised reporting template but to date none has been successful in building a broad international consensus. The Global Reporting Initiative is achieving this by bringing together a wide variety of reporters, users, experts and other interested parties from all parts of the world. The means include a representative steering group, the creation and wide dissemination of draft exposure guidelines for comment, and a series of conferences around the world. Its success is a model of how complex conflicts can be resolved. The first exposure guideline was published in March 1999 and identifies ten main topics for reporting - CEO statement; key sustainable development indicators; profile and environmental performance; policies, organisation and management systems; stakeholder relationships, management performance, operational performance, product performance, and sustainability overview.

The second exposure guideline will be published in June 2000 and discussed at a Washington D.C. conference on November 13-14 2000. It will reflect feedback on the first exposure draft - much of which is focused on the need for more attention to social issues and the needs of developing countries. It will also incorporate experience from a number of companies which have produced pilot reports based on GRI requirements. GRI will also be establishing a permanent secretariat and is discussing with ISO whether the template could form the basis of an international standard on environmental reporting.

Matteo Bartolomeo, Fondazione Enrico Mattei and Co-ordinator, European Environmental Benchmarking Network

Benchmarking within and between companies can identify opportunities for environmental improvement

A new European Environmental Benchmarking Network has been formed, with EU support.

Benchmarking is the process of measuring and comparing an organisation's business processes and performance against a given standard. Its objective is to identify and promote opportunities for process and product improvement. There are five main forms of benchmarking - internal, best in class, sectoral, rating and against framework conditions. There have been a number of environmental benchmarking initiatives which have demonstrated its value in identifying opportunities for environmental improvement.

However, there remain a number of barriers to using benchmarking for sustainable development purposes. These include lack of information on its benefits; lack of knowledge about specific benchmarking techniques and indicators; companies unwillingness to disclose internal information to others; a defensive approach towards

environmental management generally; and a focus on end-of-pipe rather than preventative approaches to environmental problems.

A European Environmental Benchmarking Network (EEBN) has now been established to overcome these barriers. Its specific objectives are to collate and learn from existing environmental benchmarking initiatives; to establish a dialogue about benchmarking between industry and its stakeholders; to disseminate information about benchmarking (e.g. through a website, newsletters, conferences and publications) and to develop pilot benchmarking projects.

Rui Frazao, Eco-design Manager, CENDES-INETI

Eco-design aims to reduce the environmental impacts of products over their life cycle

CENDES-INETI is supporting adoption of eco-design in Portuguese industry.

The aim of eco-design is to introduce environmental issues into all stages of product development. This includes generation of ideas, concept detailing, communication and marketing, evaluation, planning and organisation, product selection and priorities for product improvement. A number of eco-design tools have been developed and utilised at different stages of the process. These include life cycle assessment, life cycle costing, the eco-compass and the eco-wheel.

The key principles of eco-design are to achieve eco-efficiency and optimal function of a product. It rests on a life cycle perspective and key issues include reducing resource utilisation, maximising use of sustainable resources and increasing product durability. Specific areas of application include designing for product reuse; designing for recycling; designing for disassembly; minimising use of harmful substances; minimising environmental impacts in use; optimising packaging systems; achieving environmentally sounds disposal of materials; and implementing environment-friendly logistics. These applications are being introduced to Portugal through the CENDES-INETI eco-design programme. This is intended to develop a long-term commitment to eco-design amongst Portuguese business, to develop eco-design competencies and capabilities within Portugal; and to ensure that Portuguese companies anticipate future trends in regulation and standardisation. Experience suggests that more needs to be done to link eco-design with other management activities and overall functional and operational strategies, and that greater attention needs to be paid to ethical and social issues related to product development.

Martin Charter, Director, Centre for Sustainable Design

Eco-design has often been too narrow and needs to be extended to the product development process as a whole

The marketing function's support is needed for this and more needs to be done to achieve it.

The marketing function has not been greatly involved in environment and product development initiatives - this is one reason why there has been more redesign of existing products and processes rather than fundamental eco-innovation. However, a

number of factors are changing this situation, including: the introduction of the EU's Integrated Product Policy; the general pressures for greater producer responsibility and the greater emphasis on environmental issues within procurement and by distributors and retailers.

In general, environment is more important in business-to-business than business-to-consumer marketing (with consumers indicating high awareness but seldom translating it into a preference for environmentally superior products when purchasing). The principles of environmental marketing can be summarised as 6 'P's - planning (based on good understanding and frequent scanning of environmental issues and opportunities); product (developed through use of eco-design); positioning (of green products within the market place); pricing (with an emphasis on trying to avoid asking customers to pay more for good environmental performance); promotion (with use of product declarations to indicate environmental performance) and place (i.e. the means of distributing and taking back products).

Experience suggests that many eco-design initiatives to date have had too narrow an approach and failed to embed environment into the product development process as a whole. The support of a company's marketing function is vital if this is to be achieved. Two exceptions which prove the rule are the development of 'green ranges' by Philips and Electrolux. More and better quality environmental information is also needed to track progress and identify opportunities.

Alois Flatz, Head, Sustainability Research, SAM

The focus of 'green investment' is now companies which are thought to be well-positioned to create shareholder value from long-term sustainable development trends

The financial community places little weight on data in environmental reports, which is thought to be inconsistent and unreliable.

'Green' investment has evolved through four stages. It began in the US in the 1970s with an emphasis on backing companies demonstrating social responsibility. In the 1980s Europe developed funds focusing on investment in environmental technologies - however, these did not perform well because their success was influenced by the development of and implementation of environmental regulation, which was unpredictable. In the 1990s this was replaced by investment based on eco-efficiency. Now the emphasis is shifting to investing in companies which add value for shareholders by integrating economic, environmental and social growth opportunities into their business strategies.

SAM provides asset management, private equity and research services for investors based on this sustainable value approach. It also contains a joint venture with Dow Jones to produce the Dow Jones Sustainability Index (DJSI) (see second presentation below). In assessing companies SAM does not pay great attention to the historic environmental performance data contained in reports - this is backward looking (i.e. several years old); incomplete (e.g. it may not be available for all products and administrative sites or may not take account of outsourcing and divestment); non-comparable (e.g. different companies in the same sector may have varying product

lines); may be unreliable (and is often not audited and verified); and does not incorporate important intangible information (e.g. dematerialisation from moving to e-commerce). SAM places more weight on information gathered from company questionnaires and media sources.

SESSION 3: DEVELOPMENT AND IMPLEMENTATION IN BUSINESS

Chaired by Belmiro de Azevedo, President, Sonae

Jan Strömblad, Senior Vice President, Environmental Affairs, ABB

ABB has a standardised declaration of environmental impacts for its new products

ABB sees great benefit in standardisation of environmental tools and 86% of its sites have implemented ISO 14001.

ABB has 164,000 employees in more than 100 countries. Its main businesses are Power Transmission, Power Distribution, Automation, Oil, Gas & Petrochemicals, Building Technology and Financial Services. It is a member of the Dow Jones Sustainability Index. ABB's environmental strategy is based on four principles – develop eco-efficient products and services; continuously improve own environmental performance; share state-of-art technology with developing countries; and participate in common efforts to improve the world´s environment.

One important element in developing eco-efficient products and services is environmental product declarations for all core products. This has seven main sections – i) introduction, organizational framework and environmental management ii) product description iii) the functional unit being provided and the boundaries and allocation principles used in the analysis iv) environmental characteristics and resource demand v) environmental aspects (based on a full LCA) vi) environmental classification (e.g. aggregate global warming potential of related emissions) vii) measures, and outcomes for continuous improvement. A number of ABB's new products achieve 'factor four' or greater improvements in environmental performance.

Continuous improvement in operations is achieved by top level setting of targets, reviewing progress and implementation through a global environmental network linking environmental champions within countries and businesses, and environmental management systems – 519 of ABB's 600 sites are now certified or ready for certification to ISO 14001. The consultancy DNV also audit ABB's progress in implementing the 16 principles of the ICC Business Charter for Sustainable Development. ABB is a strong believer in using standardized tools and has been an active member of ISO committees developing environmental standards and guidelines.

Lutz-Gunter Scheidt, Environment Director, Sony Europe

It is difficult to communicate complex environmental information to customers - Sony is making greater use of its web site to do this

Much product innovation - particularly that related to the 'new economy' - is by-passing environmental managers, with potentially deleterious environmental consequences.

Sony faces many drivers to improve environmental performance, including: its own policy commitments; demands of consumer organisations; eco-labelling initiatives; demands from customers, both OEM and retail; new regulations; actions of competitors; pressures for cost reduction and the need to preserve long-term shareholder value. In addition, it has now incorporated environmental criteria into the performance-related pay of its top managers and established a practice of identifying - and seeking to emulate - the 'best in class' environmental performance for all the products it sells.

One common problem faced by manufacturers is communicating complex environmental information to customers - one of Sony's new policies is to place more product environmental information on its web site. The company is also committed to eco-design - however many of the normal product development processes by-pass normal environmental management procedures. In some cases this does not matter as normal innovation is creating environmental benefit - for example, the development of MP3 downloadable music files which eliminate the need for physical products. In other cases, it is more problematic - for example, the growing personalisation of electronic equipment will make it much more difficult to recycle. The intangible effects of the 'new economy' - for example, the impact of the Internet on democracy and participation, or the effects of widespread electronic game-playing on creativity and innovation - also have potentially great effects, although these are difficult to identify at present.

Marques dos Santos, Chair, Environment and Logistics Committee, EuroCommerce

There are many advantages to policies which seek to achieve sustainable development through the market place

There is a need for standardised eco-efficiency indicators.

The advantages of policies which seek to achieve sustainable development through the market include linking all components of the product chain; stimulating cost efficiency and innovation by business; promoting the integration of economics, material flows, knowledge and governance; empowering consumers (through well-informed choice); and highlighting the market opportunities from unmet sustainable development needs.

Some important management tools to support sustainable development include life cycle assessment (LCA), eco-design, eco-labelling; eco-marketing, eco-benchmarking, environmental monitoring and reporting, and environmental management systems. One important need is the development of standardised eco-efficiency metrics so that progress can be tracked and compared over time. The World Business Council on Sustainable Development (WBCSD) is developing a core range of indicators to achieve this.

Rolf-Karl Dohring, Head, Business Administration and Statistics, German Pulp and Paper Association

The German pulp and paper industry has developed a template to account for environmental costs

Environmental costs comprised an average 6.2% of the industry's costs in 1996.

The pulp and paper industry faces great environmental pressure from customers and regulators. In Germany there is now a very high level of recycling - 73% of annual production is later recycled. The industry is also developing a Minimum Impact Mill.

One requirement in Germany is for companies to report their environmental expenditures. The Association has worked with some individual companies to develop an accounting template for environmental costs. The first stage in this is to identify all costs which have an environmental connection. The next is to divide them into those which are independent of production processes (primarily 'end of pipe' equipment) and those which are integrated into production lines. The latter is sub-divided into costs which are part of an integrated installation (for example, an additional piece of equipment) and those which are part of an integrated process (for example, a chemical reaction created to reduce output of an environmentally damaging substance).

Process-integrated costs are the hardest to assess in practice. A pilot application of the template in four mills suggest that their average environmental costs were 6.06% of their total costs. Half of this was depreciation and interest costs on environmentally-connected equipment. Most of the expenditure was on waste management (2.95% of total costs), followed by water (2.42% of total costs), air (0.48% of total costs) and noise (0.21% of total costs).

Alois Flatz, Head, Sustainability Research, SAM

A Dow Jones Sustainability Index (DJSI) has been created and is outperforming the Dow Jones Global Index

Five investment funds are now tracking the DJSI and more will do so in future.

The Dow Jones Sustainability Index (DJSI) contains the 2-3 most sustainable companies in the 68 industry categories used in the Dow Jones family of indices - 227 companies in total from 22 countries. The companies have a market capitalisation of around $5.3 trillion - about 20% of the total capitalisation of the Dow Jones Global Index. The composition and weighting of the DJSI is proprietary and sold to investment managers who wish to develop tracker funds which replicate it. To date five funds are doing this. Since the DJSI's launch in November it has outperformed the Dow Jones Global Index. This is likely to result in money flowing into the stocks, and therefore to increase the importance of meeting the criteria for leading companies.

The starting point for selection of companies for the DJSI is the 2000 companies in the Global Index with the highest market capitalisations. These are then rated on the sustainability of their company-specific activities and for the sector as a whole. The

rating is performed in the light of ten overall sustainable development trends - transparency of information; distribution of wealth; healthy living; ecological risk awareness; dematerialisation; climate warming; pricing of natural resources; pace of technology and innovation; lifelong learning; and intellectual capital. The company's position with regard to the technologies which are deemed to be both sustainable and attractive in the market place is also assessed. These evaluation processes produce a qualifier list from which the companies deemed to be the best performing in terms of shareholder value are selected for the investment list. The overall selection methodology is audited by Price Waterhouse.

Fernando Carvalho, Director, Sonae Industria

Sonae is using a suite of environmental performance indicators to set targets and monitor progress towards them

Sonae has responded to strong customer pressures to develop sustainable forestry practices.

Sonae is a Portuguese holding company whose subsidiaries manage forests and produce wood-based panels, especially particleboard, medium density fibreboard (MDF) and oriented strand board (OSB). It has an annual turnover of 1350m euros and operates 37 plants in 9 countries. Sonae has a long-standing concern about minimising resource consumption – for example, a new mill constructed in 1986 was designed on the basis of zero external energy inputs (with all energy being provided by wood wastes).

In 1994 the interest of a major UK customer in having all its wood products from sustainable forestry stimulated Sonae to focus on broader environmental issues. The results include the issue of a Environmental Management Policy Statement, in 1996. This defined eco-efficiency as the integration of environmental management into the management systems of its subsidiaries, ISO 14001 certification for its plants and the development of key environmental performance indicators to track progress against targets. Sonae believes that wood is an intrinsically sustainable resource but that primary timber should be reserved for non-substitutable uses – many other uses can be met by engineered wood products, such as particleboard or MDF. It is concerned that the Kyoto Agreements intended to support renewable resources may work against this by strongly reducing the availability of wood by-products.

Vitor Santos, Administrator, Valdemar dos Santos (Valsan)

Valsan has conducted an environmental review of its manufacturing processes and products, which has identified many improvement opportunities

Environment plays an important part in its innovation-based competitive strategy.

Valsan manufactures metallic household accessories and components and has a staff of 340 people. It gains its competitive edge through innovation, and sees ‘triple bottom line’ and pollution prevention approaches as an important element in this process.

Valsan recently conducted an environmental review of its manufacturing processes and product life cycle impacts. This identified a number of improvement opportunities, which are being implemented at a cost of 350m escudos (of which about 100m escudos is being provided through EU support programmes). Actions include the closure of one foundry where emissions could not be reduced; greater re-use of water and more automation of its use to reduce consumption; separation of wastewater streams to reduce the volume and treatment costs of heavily contaminated effluents; and elimination of some harmful substances used in manufacturing. Valsan has also introduced eco-design and an environmental training programme.

Alda Confraria, Head of Training, Tintas Hempel

Tintas Hempel began a cleaner production programme in 1998

Environmental improvement has to be based on values as well as tools.

Tintas Hempel is the Portuguese subsidiary of a Danish group and manufactures paints and varnishes for the marine, industry and building construction sectors. It began a cleaner production programme in 1998. This has involved the introduction of new wastewater treatment facilities, automated cleaning processes, retention tanks to hold waste products, and other measures. The results have been less energy and raw material usage per unit of output; reduced requirements for cooling water; fewer spillages and reduced air emissions. All of these have substantially reduced operating costs.

The measures taken have been based on a strong set of environmental values within the company – these are essential for tools to work. Some of Hempel's future challenges amongst others are to develop new, environmentally benign, materials for paints; to increase the life span of painted surfaces; and to educate customers about the environmental impacts of their actions.

Bernardo Macedo, Administrator, Sonafi

Sonafi has anticipated future increases in environmental costs in its investment decisions

'Stretch' targets are needed to drive environmental progress.

Sonafi manufactures aluminium and zinc products, mainly for the auto industry, and employs 284 people. It has ISO 9001 certification and is now seeking ISO 14001. It also has a goal of zero effluent discharges from its plant – a new approach in Portugal. This is being achieved through a micro-filtration plant which allows re-use of process water as well as dissolved products. The process is not more cost-effective than alternatives at current water prices and emission charges but will be if, as Sonafi believes, they increase towards the European average. The system should therefore provide considerable savings in water purchase costs, discharge taxes and products.

Jose Bravo Ferreira, Manager, Environment and Quality, Secil

Secil uses key performance indicators to set targets and measure progress towards them.

The key to environmental progress is changing the mentality of staff.

Secil manufactures cement and other construction materials and holds 40% of the Portuguese market. It has always had a good record on energy efficiency with energy inputs per unit of output falling by 40.2% in terms of thermal energy between 1980 and 1999 and 18.1% in terms of power between 1987 and 1999.

In 1996 the company introduced an environmental management system – which is integrated with the quality system - and its cement and quarrying activities were certified to ISO 14001 in 1998. The company intends to develop an integrated environmental, health and safety, and quality system in the near future. At the system's heart are Secil's key performance indicators, which allow progress towards its targets to be tracked. Environmental awareness – and the change in mentality which it creates – is also vital. In 1999 the company participated in a sectoral agreement to further improve environmental performance and to continue its quarry recovery programme with native species, which began back in 1982.

Joao Soares, Director, Soporcel

'Factor four' improvements can be achieved, even in traditional sectors

Certification schemes for sustainable forestry are creating strong pressure for environmental improvement in the pulp and paper industry.

Soporcel is a large pulp and paper company. It was one of the first paper companies in the world to develop internal codes of practice on sustainable forestry, in 1995. It is also one of only three Portuguese members of WBCSD. Forest products are inherently sustainable – they are renewable, act as a sink for carbon dioxide, and are self-sustaining in terms of energy.

One of Soporcel's most important environmental projects has been the development of new planting techniques to reduce soil erosion and energy consumption. These involve shallower furrowing and application of fertiliser at the time of ploughing. The result is less run-off, better root conditions, reduced usage of fertilisers and increased resistance to disease, which creates greater productivity. Overall, the innovation creates an at least 'factor four' improvement in the eco-efficiency of forestry.

Belmiro de Azevedo, President, Sonae

At the end of the session, the chairman announced the creation of a new Portuguese Enterprises Association for Sustainable Development.

SESSION 4: CONTRIBUTION OF ENVIRONMENTAL MANAGEMENT TOOLS TO SUSTAINABLE DEVELOPMENT

Chaired by Joke Waller-Hunter, Director, Environmental Directorate, OECD

Tarcisio Alvarez-Rivero, Division for Sustainable Development, United Nations

Environmental management accounting (EMA) – which highlights the financial costs and benefits of environmental action – is an important tool for sustainable development

A UN initiative provides a forum for Governments and other experts to explore the potential for Governments to promote the use of EMA by industry.

The UN launched an environmental management accounting (EMA) initiative at an international expert working group meeting held in Washington DC, USA in August 1999. The initiative is aiming to evaluate the potential of Governments to promote the use of EMA by business and the possible policy options available to Governments for this purpose. It will also heighten Government and business awareness of the role of EMA in providing a full picture of the benefits, costs and financial implications of environmental action or inaction by business. In particular, it will highlight the way that many environmental costs are hidden in overheads and therefore their recognition will lead to improvements in business bottom line as well as environmental performance.

A series of meetings are planned to take the initiative forward – 15-16 May 2000 in Vienna, 1-3 Nov in Germany and April 2001 in New York. Recommendations resulting from this series of expert meetings on EMA will be presented to the ninth session of the Commission on Sustainable Development in 2001.

Three publications are planned. The first will be proposed guidelines for the development of national EMA guidelines as well as proposed EMA metrics and indicators. The second will be a review of policy instruments in use or available to Government for promotion of EMA. The third is on the relationship between the information produced through EMA (business decision-making) and other levels of environmental information, including corporate environmental reports and the data required from industry by local and national Governments. It will examine how these can be better integrated.

Ari Huhtala, Senior Programme Officer, Production & Consumption Unit, UNEP/DTIE

The focus of management tools is shifting from internal environmental management towards sustainable development (with longer time perspectives and more focus on social issues)

There needs to be better integration and mainstreaming of existing management tools rather than development of new ones.

The focus of environmental actions and management tools has shifted over time. In the 1970s the emphasis was on dilution and remediation, in the 1980s on recycling, and in the 1990s on prevention, cleaner production and eco-efficiency. Now the emphasis is shifting to sustainable development, which involves longer-term and more stretching goals and greater emphasis on social issues.

Four main types of tools can be distinguished - tools for assessing and understanding such as environmental impact assessment, life cycle assessment and environmental technology assessment; tools for action and operations such as environmental management systems, environmental policy, total quality management, eco-labels, regulations and conventions; tools for monitoring such as indicators and auditing; and tools for communication such as indicators, internal/external reporting and awards.

UNEP is supporting the development and implementation of many of these, especially in developing countries. For example, environmental technology assessment is a procedure whereby the environmental implications of a technology are explicitly identified and assessed. In February 2000 UNEP ran two workshops applying this to lead and battery recycling (held in the Philippines) and cyanide extraction technologies in gold mining (held in South Africa). In 1999 UNEP also published 'Towards the Global Use of Life Cycle Assessment', in co-operation with the US EPA and the Centre of Environmental Science, Leiden University. A third example is UNEP's development, in co-operation with the ICC and FIDIC, of an EMS System Training Resource Kit (available in English, Spanish, German, Italian, Japanese, Chinese and Hungarian) and a Guide to ISO 14001 Certification/Registration.

The need now is not the development of new tools but the integration and mainstreaming of those which already exist. One aspect of this is integration of environmental management in industrial, mining, etc. legislation. Another is the integration of a preventive approach and environmental management tools into company policy, and greater attention to environmental issues in accounting and financial management. The ultimate end of integration is that responsibility for environmental management in an enterprise shifts from specialised and dedicated staff to the CEO.

Christian Kornevall, Deputy Director-General, World Wildlife Federation

Despite some success, not enough is being done to solve global environmental problems

Strong legislation and multi-stakeholder partnerships are needed to develop appropriate solutions.

There is a growing awareness that there is a linkage between good management and good environmental management. Experience is also showing that environmental action can create both business and ecological benefits. Business also has a good tool-box of measures to help it achieve these win-win benefits. Even so, the growing problems of loss of biodiversity, global warming and other systemic impacts show that we are winning the battle but losing the war.

One reason for this is that the 'environmental leadership' companies are unrepresentative and that much of business – especially SMEs – is doing too little to respond to the environmental challenge. If this is true even of developed countries such as Switzerland – where surveys show that SMEs are not especially motivated to introduce environmental management systems or take other environmental actions – how easy is it for companies in developing countries to take voluntary action ?

In practice, strong legislation and the application of environmental management tools go together because it is legislation – or the threat of legislation – which encourages voluntary action. It is also important to create more multi-stakeholder partnerships bringing together business, Government and NGOs, and building on the success of existing initiative such as the Forest Stewardship Council. NGOs can make many contributions, including their ability to influence public opinion. One area for such partnerships is defining appropriate solutions to global environmental problems. Another is to work with industry leaders to introduce sustainable development approaches into individual industry sectors.

Frances Ferreira, Quercus

There needs to be stronger enforcement of national and EU environmental legislation

NGOs play an important role in improving environmental performance.

Quercus (the Latin word for oak) is a leading Portuguese environmental NGO, with 4500 members. Its main activities are in the area of climate change, industrial solid waste management, watershed planning and management, enforcement of environmental legislation, and environmental education. On present trends, Portugal is unlikely to meet its EU targets for carbon dioxide emissions so more needs to be done.

Quercus has shown the potential for more recycling and re-use of wastes in Portugal and believes that there could be more effective promotion of a pollution prevention approach to Portuguese industry. It is helping to set up a new Waste Information Centre to achieve this. Quercus is lobbying too for improvement in the water quality of Portuguese watercourses – which it thinks is best achieved by a combination of regulation and voluntary agreements with business. It is also co-operating with INETI on information and awareness activities on environmental management tools.

Joke Waller-Hunter, Director, Environmental Directorate, OECD

Governments need to play a supporting role in helping firms to improve their environmental performance

Voluntary agreements can be effective complements to mandatory policies, but only if they meet certain conditions

Governments need to encourage the innovation and diffusion of technologies which generate important environmental benefits

The implementation by firms of a variety of environmental management tools – for example, environmental audits, benchmarking and environmental management systems, has been very welcome. While responsibility for the implementation of such tools rests with firms, Governments can play an important role in providing information and technical assistance. This is particularly important for smaller firms. Governments can also encourage the standardisation of methodologies and procedures. More importantly, they need to ensure that policy frameworks encourage the use of such tools within the firm.

There is a need for a more strategic approach to resolving sustainable development problems, preferably based on multi-stakeholder partnerships. Voluntary agreements are a step in this direction, giving firms a greater role in policy design and implementation. However, certain conditions need to be met in order for them to be effective. In particular, negotiation of the agreements must be inclusive, recognising the interests of stakeholders. In addition, monitoring must be effective and the Government must retain the right to impose sanctions if objectives are not met.

Firms have played a leading role in the research, development and diffusion of environmentally beneficial technologies. Governments can further encourage this trend by ensuring that the basic framework conditions for research are in place (e.g. intellectual property rights, basic research infrastructure, and fiscal incentives). They can also play a more active role in "bending" the direction of technological change toward environmental improvements. Environmental legislation will always be an important part of the policy mix but this needs to be carefully developed so that it encourages innovation. In addition, more general technology and innovation policy needs to reflect environmental priorities as well.

SESSION 5: THE ROLE OF PUBLIC AUTHORITIES IN THE PROMOTION AND DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT TOOLS

Chaired by Alain Pesson, Ministry of Industry, France

Marianne Klingbiel, Head of Unit - Industry, Internal Market, Products and Voluntary Approaches, Environment Directorate-General

EMAS has a number of advantages over ISO 14001

Environmental management systems can create business as well as environmental benefits.

There are three main pillars of EU environmental policy – upgrading of legislative frameworks; supporting the development of voluntary instruments; and integrated product policy. One of the most important tools for achieving continuous improvement of business environmental performance is environmental management systems (EMS). The EU's EMAS scheme supports this by providing a framework for establishing and implementing an EMS, auditing its performance, and communicating information to the public and other stakeholders.

Three key advantages of EMAS when compared with ISO 14001 are the need to demonstrate year-by-year improvement, the requirement for public reporting, and a rigorous auditing process. There is also more emphasis on employee involvement in practice. Many organisations have found that verification for EMAS has been very beneficial – for example, Du Pont has found that it has helped save money and improved communication with stakeholders. And Loudwater, a small UK printer with 45 employees, saved £20,000 in the first year through reducing wastes and improving energy usage.

Karl Doutlik, Head of Unit, Environmental Aspects of Enterprise Policy, Enterprise Directorate-General

There are many kinds of environmental management tools, but much more needs to be done on tools which reflect social concerns

The Commission can play an important role in promoting further development, dissemination and implementation of these tools, including through standardisation and supportive networks.

A very comprehensive range of environmental management tools is now available. Significant progress has also been made with respect to tools that incorporate both an environmental and an economic dimension to measure eco-efficiency. However, tools that incorporate social and ethical or cultural dimensions are still in their starting phase.

The Community is playing an important role in promoting and developing tools for environmental management and sustainable development. For instance, specific tools

have been specifically addressed in Community legislation concerning eco-labelling, environmental impact assessment, environmental management systems, packaging and packaging waste and the integrated pollution and prevention control (IPPC). The development of new integrated and life cycle based policy approaches such as the Integrated Product Policy, and perhaps greater use of economic instruments and voluntary agreements, could further promote the use of several of these tools.

There is also great potential for incorporating environmental aspects in the development or revision of internal market "new approach" directives. Tools such as LCA could be used for that purpose. That is already been addressed in the construction materials sector where working groups have been created for addressing environmental aspects and where the role of LCA is emphasised.

The same applies to standardisation, either in the context of incorporation of environmental aspects in the elaboration of product standards, or in the drafting of specific standards for some of these tools, notably LCA. However, standardisation has its limits. Research on the use by industry of LCA demonstrated that we must take into account specific needs of different industry branches and SMEs, and develop methodologies that are adapted to the different kinds of enterprises.

Finally, the Community RDT programmes and enterprise policy activities have provided support to many research projects and activities on tools. They are also developing international networks such as the CHAIN network with respect to LCA, the Environment Management Accounting Network and the European Environmental Benchmarking Network (EEBN). More emphasis should be placed on the diffusion and dissemination of research results.

Maj Munch Andersen, Ministry of Trade and Industry, Denmark

Denmark has ambitious policies to develop green innovation and the development of green markets

There is a need for 'breakthrough' innovations if sustainable development is to be achieved.

EMS is more than a technical matter and the development of effective tools. There is a need to link the discussion of EMS to the way firms do business and to changing market conditions. It is the rise of greening as a corporate issue that is the major new trend in the 1990s. The full implication of this still needs to be integrated into policymaking. In Denmark environmental issues are becoming increasingly important for firm competitiveness. Recent Danish surveys show that 66-85% of firms believe that their EMS has enhanced corporate image and 20-50% say that it has improved their market conditions.

In February 2000 the Danish Government, headed by the Ministry of Trade and Industry, launched a new industrial development strategy, '.dk21', which addresses the challenges to business in the 'learning economy' (downloadable from www.dk21.em.dk). Improving the environmental profile of firms, and generally social entrepreneurship, is seen as a necessary preparation for the competitive challenges of the future economy.

In .dk21 there are three environmental targets directed at firms, to be achieved by 2005: 1) Denmark is to be among the countries within the OECD that have the highest number of accredited EMS measured in relation to population size; 2) the turnover of eco-labelled products in Denmark should be increased in comparison with other countries and we are to retain our leading position within "ø-labelled" (the national label on organic food) sales compared to other countries; and 3) improvements in the resource productivity of all industrial sectors, with targets and indicators to be determined in the years ahead

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The Danish Ministry of Trade and Industry has, in co-operation with the Danish Ministry of Environment & Energy, established a working group to develop a national green industrial strategy within the next year. The working group aims to identify incentives for, and barriers, to the greening of industry; develop core indicators to track progress (e.g. developments in EMS, eco-efficiency); develop new initiatives to support green innovation and competence building; and develop implementation strategies to achieve these goals.

Karin Feiler, Head of Department, Environmental Affairs for Industry, Austria

Environmental progress depends upon people's awareness, commitment and knowledge

Austria is developing models and measurement instruments to understand the preconditions – including human ones – for effective environmental actions by business.

An examination of 140 companies demonstrated that there is many times no relationship between formal environmental initiatives and actual progress towards sustainable development. It found that there are four key variables which are influenced by individual decisions within enterprises – human beings (especially their abilities and willingness to take responsibility), corporate strategies, organisational cultures and the environmental context (including market). Only if a decision takes all four variables into consideration is sustainable development going to be achieved. This is also the key to a successful business in healthy and wealthy surroundings.

Organisational change for sustainable development also requires different kinds of roles. Corporate leaders have to provide leadership because they are the only ones who are able to influence the culture of the individual worker in enterprises. If they do not, external visionaries such as consumer champions or politicians are urged to interfere. Researchers are also needed to chart long-term trends and to make the case for innovation in order to implement sustainability. Without such innovation no further dematerialization or eco-efficiency will be possible.

Michael Jones, Environment Directorate, Department of Trade and Industry, UK

Simpler, more incremental, approaches, are required for the development of environmental management amongst SMEs

A UK pilot project is examining the possibility of a standard for sustainable development (rather than just environment) management systems.

The DTI Environment Directorate's main objectives are to promote sustainable development and good environmental practice in British business; sponsor the environmental, recycling and waste management industries; and develop the business dimensions of the UK's international environmental policies. One important mechanism is the Environmental Technology Best Practice Programme which publishes guidance documents and case studies; runs an environmental telephone helpline; and offers a half day free environmental consultancy to small companies.

To deal with disappointing take-up of environmental management systems in SMEs, the Directorate is collaborating with the British Standards Institute (BSI) on a pilot programme. This breaks the ISO14001 requirements down into five separate stages that can be individually accredited. Stage 1 is top management commitment, initial environmental review and developing training on, and awareness of, environmental issues. Stage 2 is identifying legal and other requirements. Stage 3 is identification of significant environmental aspects and impacts. Stage 4 is management of significant environmental aspects and stage 5 is integration of the system and accreditation. The programme is based on the work of the Irish Productivity Council and involves 25 large companies and 200 smaller companies.

It is also being supplemented by another project examining the scope to use selected environmental performance measures from the ISO14031 framework to at all stages of the supply chain. Other DTI initiatives include developing environmental guidelines for the financial sector; working with the Environment Agency to develop Internet-based regulatory guidance; promotion of environmental reporting and eco-labelling; and collaboration with the BSI on a standard for sustainability management systems.

Vic Shantora, Director-General, Environment Canada

More needs to be done to improve environmental performance and awareness in SMEs

Governments need tough but smart legislation to encourage and recognise environmental leadership by companies.

Governments can provide policy direction to others by tough, progressive, legislation; acknowledging environmental business leaders; dealing firmly with laggards; developing science and technology programmes and encouraging strong environmental industry sectors. The major challenge is influencing SMEs – Environment Canada is trying to do this by developing Internet based support tools, a pollution prevention clearing house and outreach programmes.

Government must also create policy leadership by integrating sustainability goals into all new policies (being encouraged in Canada through the creation of a Commission for Sustainable Development who reports directly to parliament rather than the Government). They can also pay more attention to environment in their day-to-day operations, especially procurement and spending.

Canada also is also developing strong non-governmental institutions such as the National Roundtable on Environment and Economy. The key factors for success in environmental policy are transparency of information and goals; inclusiveness; consultation; clear goals; clear accountabilities and report progress (as with Canada's State of the Environment report).

Paulo Meozzi, European Environment Agency

The Agency is making considerable use of the Internet to collect and disseminate information about environmental management tools

It has established a number of expert networks to support the development of specific tools.

Good information is critical to sustainable development. The EEA is placing great emphasis on expert networks and the Internet to collect and disseminate information about the European environment. This is the case with the ENVISION information strategy, which is supported by a variety of information collection networks, a central data warehouse, and a reference centre.

The Agency has also established the EnviroWindows portal. This contains a clearinghouse for information about management tools and a home for online Interest Groups to foster information exchange about best practice and stimulate co-operation among remote users. EnviroWindows use CIRCA software, a collaborative, Extranet-based, communication tool developed by the Enterprise Directorate General . The Interest Groups are expert and stakeholder networks such as CESPIN (the Corporate Environmental Sustainable Development Performance Information Network) and LICADA (Life Cycle Assessment Data Network). EnviroWindows can be accessed at: http://ew.eea.eu.int.

SESSION 6: PRESENTATION OF CONCLUSIONS AND GENERAL DISCUSSION PANEL WITH STEERING GROUP MEMBERS

Chaired by Claude Fussler, Director, Stakeholder Relations, World Business Council for Sustainable Development

Maximiano Martins, Manager of Economy Operational Plan (POE)

There is a strong emphasis on sustainable development in Portuguese Government programmes

Sustainable development requires a new management approach by Portuguese business.

Portuguese economic policy has two aims – meeting the expectations of the population for development and achieving a more socially and environmentally balanced development. There are inevitable tensions between these so that the timing and management of intervention is crucial. Social well-being has traditionally been measured by outputs and growth but a new paradigm is developing. This requires a new management approach in business, with changed behaviours and a new strategic vision by leaders. This vision is about win/win opportunities from improved eco-efficiency and environmental proactivity. This needs to be supported by Government and is being reflected in the current European support programmes for Portuguese enterprise.

One aspect of the current programme is direct support for company environmental actions such as investment and development of environmental management systems. A second is strategic partnerships which mobilise Government and business to understand the dynamics of sustainable development problems and foster awareness and innovation. There is also much to be done in environment-related research and technical development for both the new and traditional sectors of Portuguese industry. Finally, financial support such as venture capital is being made available for inventive and innovative solutions. Portugal is ready and able to take these actions in order to achieve sustainable development.

Final Statements and Discussion Session

A panel of Claude Fussler (WBCSD, chair), Ari Huhtala (UNEP), Christian Kornevall (WWF), Constança Peneda (INETI-CENDES) and Joke Waller-Hunter (OECD)

Christian Kornevall, Deputy Director-General, World Wildlife Federation

WWF welcomes the development and use of environmental management tools. The scale of the sustainable development challenge – developing countries in Asia and elsewhere all want living standards comparable to the West - means that they need to be deployed with more urgency, especially amongst SMEs. Governments and societies need to discriminate more between growth and development, and foster

innovative solutions to environmental and social problems. Another crucial factor is achieving market pull – if there is no business incentive for environmental action little will happen. A welcome development is the growth of interest amongst the investment community, reflected in the introduction of the Dow Jones Sustainability Index. WWF is involved with promoting green funds and is developing its own. We try to influence other organisations and institutions such as the world faith organisations. In addition to the three pillars of development, environment and society there is also a fourth pillar of sustainable development – transparency of information. A lot of important information about the causes of sustainable development problems is still hidden – for example, ownership of the Asian oil palm industry. Fortunately, there is a proven way of dealing with sustainable development problems - co-operation by stakeholders for a common purpose. This is happening in key industries such as forestry, marine and water and needs to be extended and deepened. The Forest Stewardship Council scheme is a very successful example of introducing environment into business-to-business procurement. However, one problem is that the scheme is so successful that demand for certified timber is outrunning supply. More support from Government is needed to help tackle these problems. Overall, the industrial sector has to take more responsibility for environmental issues – nature can't wait.

Ari Huhtala, Senior Programme Officer, Production & Consumption Unit, UNEP/DTIE

The conference has shown that environmental management tools can be useful but not in isolation from other developments in business. Individual tools also serve specific purposes and therefore have different applications. The important thing is to follow the experience of safety – in most European companies it's been internalised that this is an important issue, which wasn't taken for granted in the past. In the same way, a pollution prevention approach needs to be internalised in business. However, day-to-day financial decision-making is still not taking environment into account – for example, balance sheets show spending on waste treatment as an investment. One theme which has emerged from the conference is the value of multi-stakeholder partnerships – these work when they are focused and sector-specific. The discussion has also highlighted the importance of engaging financial institutions – they are often the most conservative on environment but have great influence. One type of financial institution which hasn't been mentioned, but is very important in influencing environmental outcomes in developing countries, is export credit agencies.

Joke Waller-Hunter, Director, Environment Directorate, OECD

Three overall messages have emerged from the conference. One is the importance of mobilising customers and creating green markets. The second is the need to encourage and disseminate the experience of environmental leadership companies. The third is the value of information – for example, about the environmental performance of companies and products. There have also been a number of specific suggestions which could be taken on board by the Industry Council. One is that decoupling development from resource consumption is an essential (if not always sufficient, given economic and population growth and scale effects) first step towards sustainable development. Another is to pay more attention to the social aspects of sustainable development – the OECD, for example, is proposing to do more work on the relationship between environment and employment. A third is to examine the

effectiveness of Government-driven eco-labelling schemes, which are being overtaken in the marketplace by stakeholder-driven ones such as the Forest Stewardship Council or retailer schemes. A final suggestion is to examine whether the implementation of internal market directives is impeding buyers from building environmental considerations into their purchasing decisions.

Constança Peneda, Director, INETI-CENDES

The conference has shown that the European Union is giving more importance to sustainable development but that much needs to be done. All of us need to be active citizens in driving environmental and social change. The real involvement and empowerment of workers is especially important in making business sustainable. Sectoral benchmarking can also help to stimulate action by companies. Governments can help by changing the balance of taxation and taking other measures to create incentives for environmental action. They can also play a bigger role in supporting the development and adoption of eco-efficient technologies – at present there is insufficient appreciation of the competitive, employment and other economic and social benefits of eco-efficiency, with the result that end-of-pipe solutions are often preferred in practice. INETI-CENDES is now disseminating these messages to Portuguese companies and supporting their move to sustainable management and responsible entrepreneurship.

Claude Fussler, Director, Stakeholder Relations, World Business Council for Sustainable Development

Business and other elements of society are on a learning curve in responding to the demands of sustainable development. Some companies are not yet on the curve and more needs to be done to get them there. Others are advancing up it but still have much to do. The conference has shown that there is a good tool-box to achieve these goals- the need is for action rather than more discussions. One important theme from the conference is the importance of consumers and the need to change patterns of consumption. Another is the need for visionary leadership and the fact that sustainability is a human adventure. The fact that people are responding together provides confidence that the problems can be solved.

The points made during the discussion included:

> A need for ambitious targets, not only for their own sake but also to encourage organisational change.
>
> The potential value of an equivalent of the Prodi Group to assess the implications of sustainable development for the Community's operational activities.
>
> The ability of Governments to do much more than at present to address the environmental impacts of their own activities, for example going for ISO 14001 or EMAS or developing green procurement policies.

A plea to examine the interpretation of public procurement rules to see if – as many believe – the implementation of these is impeding green procurement by Governments and others.

Experience shows that business listens most to other business – this is why working with supply chains and sharing success stories is so important (although it can be slow).

The best opportunities to introduce environment into procurement are in business-to-business rather than business-to-consumer purchasing.

How should sustainable development targets be set and by whom ? In particular, what are the respective competencies of Government and business, and of national and international agencies ?

The value for business of thinking about the 'end-game' in 5-10 years time, deciding what has to be achieved and then work back to the present by setting staged targets. One implication of companies winning this end game is that other companies will be losers.

The idea of environmental 'convergence criteria' closely parallels developments in business performance measurement, where many companies are using a 'balanced scorecard' of a small number of performance indicators to track their progress. ISO 14031 also provides some guidance on what the convergence criteria might be, as does the work of the World Resources Institute. They have suggested that four areas should be addressed by a core set of indicators – emissions, energy, material throughputs and waste.

The house of sustainable development needs not just pillars but also a roof – this is the integration of all the different aspects. Convergence criteria might be very useful in achieving this.

Meeting the challenge of decoupling environmental impact from development requires more information about the opportunities from green markets and more Government support in helping them to develop. It is also important to relate discussions to sustainability to broader themes – for example, the development of a learning economy.

The development of the new economy does not appear to have created decoupling – US consumption has accelerated in recent years.

Claude Fussler closed the discussion by observing that meeting the demands for sustainable development will require innovation products and processes. These are likely to develop because the trend in awareness, taxation and other Government policies, and other factors will encourage people to favour eco-efficient solutions over others.

CLOSING REMARKS

Chaired by Vitor Ramalho, State Secretary of Economy

Antonio Pinheiro, Director General of Industry

Thanks to the people who helped to organise the conference, especially staff at DG Enterprise and INETI. The conference has described the wide number of environmental tools that are being used, and being extended to a wider range of problems.

It has also demonstrated the commitment by many Portuguese industrialists to respond to the challenge of sustainable development. The creation of the Portuguese Enterprises Association for Sustainable Development will further complement these activities. It is to be hoped that it will extend its membership to a wide range of companies and sectors. The conference has also provided many suggestions which can be taken forward to the Industry Council meeting of May 18th, which has the topic of sustainable development on its agenda.

J. Rocha de Matos, President, Portuguese Industry Association (AIP)

In responding to environmental and social concerns it is essential not to overlook society's desire for economic development, which requires competitive industry. There must be the right policies and controls - which involves a move away from restrictive command and control approaches to ones which encourage creativity and innovation in developing new products and processes for the future.

It is also important to have flexible approaches that can be integrated into business, and to set realistic and predictable targets which allows it to adapt over time. Defining the role of social players so that they can work together effectively is also essential.

Vitor Ramalho, State Secretary of Economy

This conference has given an opportunity to hear many interesting and different viewpoints. It is has also demonstrated the value of European co-operation, which is critical if sustainable development is to be achieved. From this perspective, it is good that the next, French, presidency is represented here. The conference has shown that Governments and business have to be concerned with the whole of humanity and have to protect the environment and use it efficiently. It is also shown the value of collaborative action – as with the creation of the new Portuguese Enterprises Association for Sustainable Development. It is especially important that this helps build environmental awareness amongst SMEs, who are often less advanced in environmental management than larger companies.

Collaborative action with economic and social actors is now even more essential for Governments as the introduction of the euro has reduced their freedom of manoeuvre in many policy areas. The Portuguese Government is committed to helping industry move towards higher quality and more innovative outputs as an important means of making economic development compatible with nature.