

**UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT**

# **GUIDANCE MANUAL**

## **ACCOUNTING AND FINANCIAL REPORTING FOR ENVIRONMENTAL COSTS AND LIABILITIES**



**Geneva 2002**

# **ACCOUNTING AND FINANCIAL REPORTING FOR ENVIRONMENTAL COSTS AND LIABILITIES**

## ***Workshop Manual***

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Development (UNCTAD) by:*

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*ACCA: Association of Chartered Certified Accountants.*

*Ellipson Ltd.*

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*Accounting and Financial Reporting for Environmental Costs and Liabilities:*

## **Workshop Manual**

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# ***1. INTRODUCTION TO GUIDANCE MANUAL ACCOUNTING AND FINANCIAL REPORTING FOR ENVIRONMENTAL COSTS AND LIABILITIES***

## **Introduction**

Environmental financial accounting deals with accounting for and reporting on environmental transactions and events that affect, or are likely to affect, the financial position of an enterprise. One of the challenges is to ensure that 1) environmental costs and liabilities are accounted for by following relevant accounting standards or, in their absence, generally accepted accounting practices, and 2) the meaningful disclosure of the environmental performance of an enterprise is provided. A further challenge is to ensure that appropriate management accounting procedures are, where necessary, developed, and used, for instance, to cost out pollution controls, to compare alternative materials that can be used in manufacturing, and to investigate recycling alternatives.

## **Objective of the Manual**

The objective of this manual is to inform and give guidance on environmental accounting issues, and identify best practices that may be considered by national standard setters in the development of their own accounting standards, rules or regulations. The manual was originally designed as a training tool for the UNCTAD's workshop series on Environmental Accounting and Reporting. In order to explore the full range of possible disclosures on environmental issues, sections on environmental reporting and environmental performance indicators (EPIS) have been added to the manual. These complementary section reflect the findings of UNCTADs broader work programme.

It is not UNCTADs objective for actual guidelines or standards to be written during the workshop. An ultimate aim coming out of the workshops is for local partners to adopt this guidance material and to create local centres of excellence, promulgating this material. At the conclusion of the workshop, participants should:

- **be familiar** with the various issues of environmental accounting
- be able to begin to **integrate** environmental issues into conventional financial accounting, cost accounting and the financial statement audit
- **identify** areas where accounting guidance is needed
- **know** which enterprises are currently 'leading the field' in environmental accounting and their pronouncements; and be able to use these pronouncements for designing future guidance.

## Scope of the Manual

This manual is primarily based on work that has been, undertaken by the UNCTAD-ISAR<sup>1</sup> group, the European Accounting Advisory Forum, and accounting organisations and standard-setting bodies in Canada, the United Kingdom and the United States. A survey of other countries was undertaken, and responses were received from Brazil, China, the Czech Republic, Germany, Korea, Mauritius, the Netherlands, Pakistan, Poland, Russia and Switzerland. A number of countries indicated that they had Statements on the basic concepts on accounting similar to those that had been issued by UNCTAD-ISAR and the IASC, which, as is noted in the preamble to the *Position Paper*,<sup>2</sup> provide the basic underpinning for accounting for environmental costs and liabilities.

The *Position Paper Accounting and Reporting for Environmental Costs and Liabilities within the Existing Financial Reporting Framework (1998)* on which the manual is based deals with accounting for and reporting of environmental costs and liabilities arising from transactions and events that affect, or will likely affect, the financial position and results of an enterprise and, as such, should be reported in an enterprise's financial statements. The recognition and measurement of costs or events that are not absorbed by the enterprise are not covered.

## What It Is – What It Is Not

The manual covers only those environmental costs that can be dealt with under the existing financial reporting framework. These are often referred to as 'internal costs' and generally arise because of a transaction between the reporting entity and another party.

The manual does not cover the recognition and measurement of costs that are external to the entity, such as the impact of air pollution and water pollution on the environment, and that are not currently absorbed by the entity (often referred to as 'external costs'). It should be noted, however, that the boundaries of internal costs are not static. Legislation and other measures can impose an obligation on an entity to undertake specific action for which there was previously no such obligation, thereby converting an 'external cost' into an 'internal cost.' It should also be noted that a number of entities and industry associations are exploring appropriate ways of reporting 'external costs' relating to the environmental impacts of their operations.

## Technical updates

The 2002 edition of the manual includes technical accounting developments that have taken place since the release of the UNCTAD Position Paper in 1998 and additional teaching materials used by trainers during the UNCTAD workshop series.

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<sup>1</sup> The United Nations Conference on Trade and Development – (United Nations Intergovernmental Working Group of Experts on) International Standards of Accounting and Reporting.

<sup>2</sup> The technical position paper endorsed by the Inter-governmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR) was presented on its fifteenth session February 1998.

To date there is no general statement that addresses the environment directly and the subject does not feature in the agenda of the International Accounting Standards Board (IASB). There is no international accounting standard requiring the automatic disclosure of any such items. In the absence of any mandatory reporting requirement the recognition, measurement and separate disclosure of environmental expenditures and liabilities is governed by the accounting concept of materiality.

The nearest the IASB has come to dealing with environmental issues directly is *International Accounting Standard (IAS) 37 on Provisions, Contingent Liabilities and Contingent Assets* whose appendices draw on environmental examples to illustrate accounting treatment. Accounting issues identified by IAS 37 will be subject to the application of the materiality concept. In addition, the International Federation of Accountants (IFAC) is currently working on proposals for an accounting standard for public sector bodies (*Exposure Draft 21 Provisions, Contingent Liabilities and Contingent Assets*) drawn up primarily from IAS 37. It is noteworthy that standards and related guidance are not always mandatory in the local context. IAS 37 is only currently subject to voluntary adoption (introduced 1 July 1999).

Across Europe national standards tend to take precedence. The UK's Financial Reporting Standard (FRS) 12 and IAS37 are almost identical standards on Provisions, Contingent Liabilities and Contingent Assets. From 2005 all listed companies within the European Union will be required to use International Financial Reporting Standards (IFRS's is the new name for International Accounting Standards).

ISAR is also pleased to acknowledge that the European Commission's 2001 *Recommendation on the recognition, measurement and disclosure of environmental issues in the annual accounts* compares favourably with ISAR's Position Paper.

## How to use the manual

As noted previously, this manual was prepared by UNCTAD as a guide to environmental accounting and reporting. It includes guidance on the use of financial and non-financial performance indicators of environmental performance. The manual has been designed as a starting point for all those interested in environmental accounting from policy makers and standard setters to practitioners and academics, trainers and students. It can be read in its entirety or each section can be read as a standalone unit of analysis.

UNCTAD's international workshop series provides one example of how the manual can be used. The manual was initially designed as the main background document for workshop participants. The three technical guidance sections formed the basic structure of each workshop. Workshop participants highlighted the use of the manual as both a classroom tool and a desktop reference guide. Full details of the workshop series including a list of workshop locations and agendas is posted on the UNCTAD web site.



## Layout of the manual

### • Technical sections

The manual is divided into three technical guidance sections on: Environmental Accounting, Liabilities and Costs in Financial Statements (section 2), Environmental Reporting (section 3), and Standardised Environmental Performance Indicators (section 4).

### • Appendices

The three technical sections share common Appendices that have been designed to add clarity of interpretation and further reference material on each subject matter. You may wish to add regional and local references if you deem this necessary. (For guidance on further tailoring of the manual to reflect regional/local issues see below)

### • Caption boxes

The *key points* in each section of the manual are contained within caption boxes. For example, in section two Environmental Accounting, Liabilities and Costs in Financial Statements technical points drawn directly from the ISAR position paper are highlighted using caption boxes. In other instances practical *examples* are highlighted in boxes. *Each box can be reproduced by trainers as a slide to highlight points or illustrate examples.*

### • Questions and answers

Each section of the manual contains *questions* for course participants/ students to work through. In some cases answers are provided in the text but in some cases questions have been deliberately left open so that the reader can form an answer specific to their own regional/ local priorities or role.

### • Regional/local issues

The manual represents ISAR's international guidelines on environmental accounting and reporting. It should be considered in line with local/regional issues and updates to recognise changes in legislation, regulations and local guidelines.

### • Technical updates

The manual was originally based on ISAR Position Paper released in 1998. This edition of the manual has been updated to reflect technical development between 1998 and 2002 in particular the development of IAS 37 and its reporting requirements. The ISAR committee has celebrated the introduction of this standard. As accounting regulations develop you may find it necessary to insert further adjustments.

### • Further information

Further details on the UNCTAD workshop series are available on the UNCTAD website and/or by contacting UNCTAD directly. ([www.unctad.org/isar](http://www.unctad.org/isar))

## Potential modifications to address regional and sectoral issues

The objective of the workshop and the manual is to open up the subject area of environmental accounting and reporting for debate and stimulate debate on the application of the guidance within a regional and local context. Over time, across locations and among different readers issues considered relevant are likely to vary. Thus, the reader should consider the application of guidance in light of local issues and be prepared to add to the manual to reflect local priorities.

Consider inserting caption boxes to add regional guidance and examples or questions that you believe are relevant (and/or are posed by local bodies). Additional references may be added to the appendix and web links established to other guidance providers (enterprises).

A list of regional issues identified during UNCTAD international workshop is available for reference on the workshop website. The list is provided as a starting point for debate and may be updated as necessary in light of your own experience.

*Answering the following questions may help you to identify local issues:*

- *Does your national accounting body issue any additional advice/guidelines on environmental accounting and reporting?*
- *Are there any requirements on enterprises (public or private) in your area to report on environmental issues to the government, shareholders, the stock exchange (for example as found in Thailand) or the local regulator (Environmental Protection Agency)?*
- *Do regional universities; professional training bodies or trade associations offer guidance on environmental accounting and reporting?*
- *Can you find similar examples of accounting and reporting by enterprises within your region? (Take a copy of the reports for future reference and insert the examples in the manual)*

Another example of how the manual can be used is to apply the guidance material to one specific industrial sector. The sector may for instance be chosen for its local dominance or perceived environmental impact. Two of the UNCTAD workshops were devoted to the steel sector at the request of local participants. A steel sector resource pack was designed by trainers to support the workshops in this instance. The pack provides practical examples of enterprises applying the guidance material contained within the manual. A similar preparation could be produced for/ by other sectors as a basis for debate.

*Ask yourself:*

- *What are the key industries operating in your area?*
- *Are you aware of any enterprises producing environmental accounts and reports?*
- *Do their trade associations offer any guidance on environmental accounting and reporting?*

Again, consider inserting caption boxes to add sector guidance, examples or questions that you believe are relevant. Additional references may be added to the appendix and web links established to trade bodies or reporting examples.

See UNCTAD steel sector resource pack for examples of the type of material that you may wish to *prepare for* a sector specific workshop or even prepare *during* a workshop.

## Designing a workshop based on the manual

If you are designing a workshop or other form of training course based on the manual there are a number of key questions that can help you get started. These are outlined below and can be considered in any order. The answers are likely to be related.

*What is the aim of the workshop? Why hold a workshop?*

Is the workshop to be used as a general introduction to environmental accounting and reporting or do you want it to have a more specific purpose (by sector or issue)? Consider local issues. As noted previously, the manual can be tailored for local issues in advance of the workshop and modifications can be added after the event to take account of additional issues/ examples raised. Alternatively, the workshop can be designed as a starting point through which to identify local issue and set regional priorities for action. In this aim the standard format manual is an ideal starting point (a number of UNCTAD workshops have operated on this basis see for example Brazil 1998). Think about whether or not there is a dominant industry sector operating in your area that you would like to influence? Do examples of reporting already exist? Good and bad they can be used during the workshop!

*Who is the workshop aimed at? How many participants do you envisage?*

Who do you want to engage; practitioners/academics, accountants/nonaccountants, industry/sectoral representatives, policy makers? You may decide to focus on one specific issue with one specific group of participants or engage a mixed group in debate?

*Where will the workshop be held? Who will pay the bill?*

Design factors will include the type and number of trainers matched against type and number of potential participants (practitioners or academics, accountants or non-accountants etc). Potential constraints may include the feasibility of workshop location, time-scale for the event, cost of administration offset against potential contribution from sponsors and/ or fees for participants. Note the profile of the workshop can be altered by choice of host and/or sponsor and the timing of the event to coincide with the release of local guidelines/ regulation.

Remember you may wish to:

- Select local writers to include additions to the manual as necessary.
- Select local speakers (see regional workshop agendas UNCTAD website for examples).
- Publish a copy of speeches made and provide a list of delegates to facilitate future local networking (see website for Indian workshop agenda/speeches for example and the list of delegates at the Geneva workshop).

- Set targets for the future. i.e. a programme of follow up events.

Further details on designing a workshop are provided in the UNCTAD train the trainers "guidance notes" on the workshop web site. This document was designed to support a training event for trainers of environmental accounting and reporting.

## The Importance of Environmental Accounting and Reporting<sup>3</sup>

Accounting serves several functions in an enterprise. One, financial accounting, is a score keeping and reporting tool; a standardised means for compiling and communicating financial information to external audiences. Another, management accounting, is supplying information that helps managers to plan and control enterprise activities, and to evaluate performance of an enterprise, both profitability performance and environmental performance. This includes complete systems for identifying, monitoring, and reporting corporate environmental impacts, and for integrating those impacts into corporate decisions on product costing, product pricing, capital budgeting, product design, and performance evaluation.

To serve such functions, an audience must be kept clearly in view. Society has entrusted the management of a large portion of its wealth to corporate management. As a result, corporation executives become responsible to numerous internal and external stakeholders. Owners of an enterprise are the immediate audience. Owners' interest is in the status of assets and the performance of an enterprise. Owners seek to protect themselves against environmental liabilities.

Expanding owners' interest into meeting legal environmental obligations brings an extended audience: consumers, competition, courts/legal system, employees, financial institutions, general public, government, interest groups, media, scientific community, and suppliers/ channels. This extended audience has a varied appetite for environmental reporting of enterprise activities (Freeman, 1984).

For example, creditors have a vested interest in more complete and timely disclosure of environmental liabilities to assess credit risks; under US law they share joint potential liabilities for loans secured by contaminated properties, while employees expect safe working conditions. Likewise, the general public may simply be interested in how the enterprise affects the country's economic growth.

Schoemaker and Schoemaker (1995) observes that information about company's potential future environmental liability can be used:

- to encourage defensive and prudent operations and waste reduction;
- to improve manufacturing, waste disposal and shipping practices;
- to negotiate and settle disputes with insurance carriers;

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<sup>3</sup> Research carried out as a part of UNCTAD's continuing project to examine the development of environmental accounting and reporting in TNCs. In particular, to develop that part of the project related to the role of accounting in the pursuit of sustainable development by The Centre for Social and Environmental Accounting Research (CSEAR) based at Glasgow University.

- to influence regulators and public policy makers;
- to determine suitable levels of financial resources;
- to reassess corporate strategy and management practices (think green);
- to articulate a comprehensive risk management program;
- to improve public citizenship;
- to assess hidden risks in takeovers and acquisitions.

From the functions of accounting, and the audience for financial reporting, the role of accounting standards becomes obvious. Standards provide a firm basis on which to record, compare and analyse status and performance of an enterprise. So firm is the basis provided that ambiguity of analysis is minimised. Further, standards provide a separation of 'fact' from opinion and non-qualified facts.

The overall scheme of accounting standards and related procedures has been developed over long periods. This time span reflects change in enterprise, in technology (particularly computerisation and telecommunication) and in government (local, national, international). Accounting standards have met such changes, and have responded with a great shift in meeting reporting requirements of the audiences. Now, with increase in duties of environmental protection and under environmental regulation, financial reporting (recognition and disclosure) poses additional challenges to accounting standards and procedures. The connection between environmental effects and financial results is of concern to the enterprise: what impact on the environment, what control of the impact by the enterprise, and what financial consequences to the enterprise. Making this connection is the challenge to enterprise and the accounting profession, and to the broad audience whose interest is environmental protection.

## History of ISAR

The United Nations Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR) started the move toward meaningful environmental accounting at the enterprise level in 1989. It was concerned by the fact that accountants had remained on the sidelines in the environmental debate and had ignored their role in environmental management. They had failed to see how the conventional accounting model could be applied to environmental questions even when the survival of their firms depended on it. The connection between environmental management and environmental accounting is obvious if one understands the maxim, 'If you can't measure it, you can't manage it.'

ISAR discovered in its first survey that there were no national accounting standards specific to environmental information disclosure. That led the Group to formulate its first guidance for accountants in 1991 in terms of what should be disclosed in financial statements if users were to have a true and fair view of the environmental performance of an enterprise. This started a virtual avalanche of activity. Environmental accounting quickly spread beyond the confines of financial accounting. Other international and national organisations took up the subject such as OECD, the European Commission, the Canadian Institute of Chartered Accountants, the Association of Chartered Certified Accountants, and the Institute of Chartered Accountants of England and Wales to name a few. ISAR approved its

Position Paper on 'Accounting and Financial Reporting for Environmental Costs and Liabilities' in February 1998. Its purpose is to contribute to harmonisation by lessening the chance that national standard-setters would devise radically different accounting treatments for the same environmental problems.

While many corporate leaders subscribe to the concept of sustainable development, they have difficulty in translating it into operational terms for their enterprises. The World Business Council for Sustainable Development coined, therefore, the term 'eco-efficiency'. Eco-efficient behaviour decreases an enterprise's impact on the environment while increasing its profitability. However, eco-efficiency can be measured only through environmental accounting – or by producing accurate information on environmental costs, savings and performance. There is agreement that steps have been taken in the area of environmental accounting and that it was not only useful but would also be increasingly required by legislation, by investors and banks, by the public and by global competition.

## The Scope of ISAR Recommendations

Reflecting the scope of the ISAR position paper section two only deals with environmental costs and liabilities that affect, or are likely to affect, an enterprise's financial position and results of operations and, as such, would be included in its financial statements (that is, an enterprise's 'internal costs'). There seems to be general agreement among those developing standards on environmental accounting and disclosure that the basic concepts presented in various accounting frameworks are equally applicable to environmental costs and liabilities.

The framework for environmental accounting and disclosure is thus being developed in the context of providing information on an entities financial position, performance and changes, aiding users in making economic decisions, and showing the results of the financial stewardship and accountability of management for the resources entrusted to it.

## The Need for Environmental Accounting and Reporting

There are many reasons why environmental issues need to be integrated into corporate accounting.

- Enterprise accounts should reflect firms' attitudes towards the environment and the impact of environmental expenditures, risks and liabilities upon the financial position of an enterprise.
- Investors need information on environmental performance and expenditures to make investment decisions.
- Environmental issues are management issues, managers need to identify and allocate environmental costs so that products are correctly priced and investment decisions are based on true costs and benefits.
- Enterprises may be able to exploit a competitive advantage with customers if they are able to show that goods and services are environmentally preferable.
- Environmental accounting is a key to sustainable development.

Most corporate leaders agree that a main objective for the economy is sustainable development. Sustainability requires companies to strive for eco-efficiency, but they can only measure that by producing accurate information on both environmental costs and revenues and environmental performance.

## **2. ENVIRONMENTAL ACCOUNTING, LIABILITIES AND COSTS IN FINANCIAL STATEMENTS**

**The objective of this section is to introduce participants to the field of environmental accounting and reporting.**

This section includes presentations on:

- the need to account for environmental costs and liabilities
- recognition of environmental costs
- recognition of environmental liabilities
- measurement of environmental liabilities
- disclosure and verification

The section does not cover the recognition and measurement of costs that are external to the entity, such as those that may arise from air and water pollution, that are not currently absorbed by the entity. However, it should be noted that the boundaries of internal costs are not static. Legislation and other measures can impose an obligation on an entity to undertake specific action for which there was previously no such obligation.

The UN ISAR Group, the International Accounting Standards Committee (now Board - IASB) and standards setting bodies in several countries have issued Statements of Objectives, Principles of Accounting and Reporting or Conceptual Framework Statements. The positions issued or being developed on accounting for environmental costs and liabilities are considered to be in accordance with these statements.

The 2002 edition of the manual has been updated to include technical accounting developments that have taken place since the release of the UNCTAD Position Paper in 1998 and additional teaching materials used by trainers during the UNCTAD workshop series. Particular reference is made to International Accounting Standard (IAS) 37 on Provisions, Contingent Liabilities and Contingent Assets.



**It may be questioned whether standards developed in this context are necessarily fully appropriate when the objective is providing information on enterprises environmental stewardship and management accountability. It is proposed that the basic concepts that have been developed for financial accounting and reporting are appropriate but additional disclosure may be desirable.**

Of particular relevance are the definitions of 'liabilities' and 'assets'. The various standards on 'contingencies' are also frequently referred to as a benchmark when considering measurement of and reporting environmental liabilities. Expansion of these definitions to incorporate environmental issues is addressed within the following sections.

## The Need to Account for Environmental Costs and Liabilities

Accounting for the environment has become increasingly relevant to enterprises (whether they be businesses, non-profit organisations or Government enterprises, such as municipalities and crown corporations) because issues of the availability/scarcity of natural resources and pollution of the environment have become the subjects of economic, social and political debate throughout the world. Steps are being taken at the national and international level to protect the environment and to reduce, prevent and mitigate the effects of pollution. As a consequence, there is a trend for enterprises to disclose to the community at large data concerning their environmental policies, environmental management programmes and the impact of environmental performance on their financial performance.

Accounting and reporting for the environment has become increasingly relevant to the stakeholders of an enterprise because how an enterprise's environmental performance affects its financial health is of increasing concern to investors, creditors, governments and the public at large. In particular, disclosure of environmental data can be used to assess an enterprise's financial and environmental risk and that of its stakeholders.

### *What are the benefits of environmental accounting and reporting?*

An enterprise which recognises its environmental responsibilities, and which institutes appropriate and effective systems of environmental management to ensure inter alia both competitiveness and compliance will minimise its exposure to future financial risk/loss arising from environmental incidents. At the same time:

- such an enterprise should be able to secure lower insurance premiums, reflecting the reduced risk
- a favourable environmental risk rating may secure the enterprise better borrowing terms – either when issuing corporate debt or borrowing or when issuing new equity
- pure compliance costs should not result in a market penalty unless, \$ for \$, an enterprise can be demonstrated to be incurring higher compliance costs than

its sector peers (however, in the absence of any requirement to disclose such compliance costs, the market may be forced to rely on proxy measures).

An enterprise which, in addition to recognising and responding to its statutory environmental responsibilities, also determines to be at the leading edge in terms of utilising environmentally friendly technologies or moving towards a more sustainable mode of operations should reap additional benefits such as:

- increased staff/employee commitment
- lower/eliminated 'green' taxes, levies and fines
- lower operating costs and waste disposal costs
- improved corporate profile
- increased market opportunities (including public sector public procurement opportunities).

Research has identified numerous cases where cost savings can be achieved through the exploitation of opportunities to reduce environmental impacts and costs, to recycle what was formerly considered waste, or to access new markets without sacrificing the original base position. It is, however, quite a different thing to suggest that environmentally derived financial benefits will automatically flow through into superior share price performance. Many different factors affect 'the bottom line', among them the level of environmental costs. Analysts and fund managers may rate an enterprise positively in terms of its environmental exposure but may be dissatisfied if an excessive proportion of sales is earned overseas. An enterprise subject to adverse currency movements may also be subject to negative impact on its share price despite superior environmental performance and increased revenues and profits generally.

#### *How can environmental data disclosures be used?*

Environmental data can help to:

- interpret corporate management's ability to manage environmental issues and integrate environmental issues into general long-term strategic issues
- to compare progress between enterprises and over time
- to judge the entity's exposure to risk and that of its potential business partners.

How an enterprise's environmental performance affects its financial health and how financial information relating to such performance can be used to assess environmental risks, and the management of such risks, are often matters of concern to investors and their advisers. Similarly, owners and shareholders of an enterprise are particularly interested in its environmental performance because of the potential impact environmental costs may have on the financial return on their investment in the enterprise. Creditors look for evidence that an organisation is actively and effectively managing its environmental performance and liabilities. Banks in particular, face the possibility of having to take on the responsibility for rectifying environmental damage should a debtor default on a loan for which it has pledged land as security; the amount involved may be significantly greater than that of the original loan. Environmental performance is increasingly considered by those involved in mergers and acquisitions who face

the risk of inheriting others environmental liabilities, in particular the identification of, and provision for, contaminated land.

In the area of accounting, initiatives are being taken to facilitate the collection of data pertaining to an enterprise's environmental costs and liabilities and to increase awareness of the financial implications of environmental issues.

However, a Canadian Institute of Chartered Accountants Task Force on Environmental Costs and Liabilities noted that:

- while environmental liabilities fall under the definition of liabilities (set out in various Statements of Concepts and Objectives), they were generally not being reported; even when reported, there were inconsistencies in measuring the liability and in the type and amount of information that was disclosed
- financial information comparability may suffer from the absence of specific guidance dealing with the accounting for environmental liabilities and costs
- a large number of entities that were required to set up the liability or provisions for site restoration costs avoided doing so on the basis that such costs could not be reasonably determined
- there was confusion about when an environmental cost meets the definition of an asset
- environmental costs are often different from other costs because they may produce future benefits that are not strictly economic.

In order to improve the quality of accounting and reporting for environmental costs and liabilities there is a need to consider how the traditional financial accounting frameworks can be drawn on to produce useful information on environmental transactions and performance. The information provided should be presented in such a manner as not to jeopardise business confidentiality in sensitive areas or the competitive position of the enterprise.

## Recognition of Environmental Costs

The objective of this section is to introduce and elaborate upon recommendations by the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting detailed within the Position Paper 'Accounting and Financial Reporting for Environmental Costs and Liabilities'.

As noted previously this third edition of the manual includes technical updates for the period 1998-2002.

*Define an environmental cost?*

**Environmental costs comprise the costs of steps taken, or required to be taken, to manage the environmental impacts of an enterprise's activity in an environmentally responsible manner, as well as other costs driven by the environmental objectives and requirements of the enterprise.**

An enterprise, which is engaged in an environmental business such as the treatment of waste, could argue for example that all costs incurred by the enterprise should be included as environmental costs. This is clearly not the intention as it would be a contradiction to the definition of environmental costs. Similarly in the case where a group of enterprises contains a separate legal entity, which is involved in, say the environmental protection business, the costs of goods and services provided by this entity to third parties would not qualify as environmental expenditure in the consolidated accounts of the group. However, the costs of goods and services provided by this entity to other enterprises included in the consolidation may qualify as environmental expenditure.

**Environmental costs should be recognised in the period in which they are first identified.**

In some cases an environmental cost may relate to damage that has occurred in a prior period.

*Can you think of any examples of environmental costs?*

For example:

- environmental damage to property prior to acquisition
- an accident or other activities in a prior period which now require clean up
- clean up of property disposed of in a prior period
- costs of disposing or treating hazardous waste created in a prior period.

Accounting standards generally preclude environmental costs from being treated as a prior period adjustment unless there is a change in accounting policy or unless there was a fundamental error. The examples referred to above would therefore generally not qualify as prior period adjustments.

**If environmental costs meet the criteria for recognition as an asset, they should be capitalised.**

**An asset is a resource controlled by an enterprise arising from past events and from which future economic benefits are expected to (directly or indirectly) flow to the enterprise.**

**Environmental assets are environmental costs that are capitalised because they satisfy the criteria for recognition as an asset.**

**They should be amortised to the income statement over the current and appropriate future periods.**

*When should environmental costs be capitalised?*

**Environmental costs should be capitalised if they relate, directly or indirectly, to future economic benefits that will flow to the enterprise through:**

- increasing the capacity or improving the safety or efficiency of

**other assets owned by the enterprise**

- **reducing or preventing environmental contamination likely to occur as a result of future operations**
- **conserving the environment**

Some costs may not directly increase economic benefits to the enterprise but may be necessary if the enterprise is to benefit from its other assets. In most instances environmental costs that are capitalised are related to another capital asset and should be included as an integral part of that asset, and not recognised separately. For example, the removal of asbestos from a building.

It would be inappropriate to recognise asbestos removal as a separate asset as it does not result in a separate future economic benefit. Alternatively, a piece of machinery that removes pollution from the water or atmosphere, has a specific or separate future benefit and therefore should be recognised separately.

**Environmental costs that do not meet the criteria for recognition as an asset should be charged to the income statement immediately.**

Many environmental costs do not result in a future benefit or are not sufficiently closely related to future benefit to enable them to be capitalised.

*Can you think of any examples of environmental costs that may be expensed?*

For example:

- the treatment of waste products
- the clean up costs relating to current operating activities
- the clean up of damage incurred by the reporting enterprise itself in a prior period
- ongoing environmental administration
- environmental audits
- fines and penalties for non-compliance with environmental regulations
- compensation to third parties for environmental damage.

The primary difference between those bodies which have issued guidance on defining environmental costs is whether fines, penalties and compensation to third parties relating to environmental activities or inactions should be included in the definitions of environmental costs/expenditures. Fines, penalties and compensation are different from other types of environmental costs in that they provide no benefit or return to the enterprise – separate disclosure is therefore appropriate.

It is evident that what constitutes an environmental cost is, to some extent, judgmental and it will be up to the individual enterprise to decide what comprises environmental costs in particular circumstances using the guidance provided. It is

suggested that to avoid misleading the user of accounts due to possible overlap with other costs and benefits the enterprise provides a brief description of what constitutes environmental costs.

**Norsk Hydro ASA and Subsidiaries Annual Report 2000**

Notes to the Consolidated Financial Statements

Note 1: Summary of Significant Accounting Policies

*Environmental Expenditures*

Environmental expenditures which increase the life, capacity or result in improved safety or efficiency of a facility are capitalised.

Expenditures that relate to an existing condition caused by past operations are expensed.

**Eastman Kodak Company Annual Report 2000**

Notes to the Financial Statements

Note 1. Significant Accounting Policies

*Environmental Costs*

Environmental expenditures that relate to current operations are expensed or capitalised, as appropriate.

Note 8: Commitments and Contingencies

*Environmental Expenditures* for pollution prevention and waste treatment for continuing operations at various manufacturing facilities were as follows:

<b>(in millions)</b>	<b>2000</b>	<b>1999</b>	<b>1998</b>
Recurring costs for managing hazardous substances and pollution prevention	\$72	\$69	\$75
Capital expenditures to limit or monitor hazardous substances and pollutants	\$36	\$20	\$25

See extensive narrative for details of fines and penalties

**British Gas Plc (UK) Annual Report and Accounts 1998**

Profit and Loss Account

Turnover	£8,601 m
Operating costs	(7,624) m
Exceptional charges: environmental costs	(200) m

Notes to the Accounts

Exceptional charges: environmental costs (p46)

The 1995 results include a further provision of £200m for dealing with the Group's obligations with regard to contaminated old gas manufacturing sites. The bulk of this provision, estimated by the Group's surveyors, relates to costs that are expected to be incurred as a result of the introduction of the Landfill Tax. The further survey work, undertaken during 1995, coupled with the Groups increasing experience of remediation work undertaken to date, has also been taken into account. It should be noted that the survey work programme continues and that exact costs, nature and timing of the remediation work remains uncertain. In the future, changing environmental legislation will impact the final cost of remediation.

## Recovery and Impairment

**When an environmental cost that is recognised as an asset is related to another asset, it should be included as an integral part of that asset and not recognised separately.**

**When an environmental cost is capitalised and included as an integral part of another asset, the combined assets should be tested for impairment and where appropriate written down to its recoverable amount.**

Similarly capitalised costs recognised as separate assets should also be tested for impairment.

Whilst the recognition and measurement of environmental impairment involves the same principles as other forms of impairment the uncertainties may be greater. In particular for example taking account of the stigma effect of environmental pollution on the value of neighbouring properties.

*How would you treat the following costs?*

1. Tanker oil spill
  - a. Clean up waterways and beach front
  - b. Re-enforce tankers hull to reduce risk of future spill
2. Rusty chemical storage tank
  - a. Remove rust that developed during ownership
  - b. Apply rust prevention chemical
3. Air pollution caused by manufacturing activities
  - a. Acquire & install pollution control equipment
  - b. Pay fines for violation of the 'Clean Air Act'
4. Lead pipes in office building contaminate drinking water
  - a. Remove lead pipes & replace with copper pipes
5. Soil contamination caused by pipes operating a waste dump
  - a. Refine soil on dump property
  - b. Install liner
6. Water well contamination caused by chemical leak into wells that will be used for future beer production
  - a. Neutralise water in wells
  - b. Install water filters
7. Underground gasoline storage tanks leak and contaminate company's property
  - a. Refine soil
  - b. Encase tanks to prevent future leaks from contamination of surrounding soil
8. Air in Office Building Contaminated with Asbestos Fibre
  - a. Remove asbestos.

*Note:*

*Answers to the above questions may vary due to differences in interpretation of technical (engineering) solutions. The above exercise can be reproduced using regional examples and/or local issues. For example, question 6 may not be appropriate in some cultures and should be replaced by a more appropriate example.*

## Recognition of Environmental Liabilities

The objective of this section is to examine how to identify, recognise and measure environmental costs and liabilities for disclosure in the financial statements.

The section includes technical updates to the UNCTAD's position to reflect the publication of IAS 37 Provisions, Contingent Liabilities and Contingent Assets. As noted previously while IAS 37 is not an environmental accounting standard it uses environmental issues to illustrate the general treatment of liabilities and provisions in the annual report and accounts.

The recognition of an environmental liability (or a provision for an environmental liability) is considered to be governed by the characteristics and criteria for a liability.

It should be noted that in some countries environmental liabilities are classified as 'provisions'. Provisions need to be distinguished from other liabilities such as trade creditors and accruals. The distinguishing feature is that, in the case of provisions, there is uncertainty over either the timing or amount of the future expenditure. This may be the case for certain but not all environmental liabilities. The term environmental liabilities used here covers both those costs that are certain and those for which there is some uncertainty.

### Define an environmental liability?

**Environmental liabilities are obligations relating to environmental costs that are incurred by an enterprise and that meet the criteria for recognition as a liability.**

**A liability is a present obligation of the enterprise arising from past events, the settlement of which is expected to result in an outflow from the enterprise of resources embodying economic benefits.**

ISAR's definition of a liability noted above is word perfect with IAS 37 however the standard does not define an environmental liability.

An environmental liability would normally be recognised when there is an obligation on the part of the enterprise to incur an environmental cost. ISAR guidelines note that an obligation does not have to be legally enforceable for an environmental liability to be recognised. An enterprise may have a constructive obligation to incur a cost.

One step forward under FRS 12 and IAS 37 is the extension of a enterprise's obligations to include not only by its legal obligations but also its constructive obligations.

### A Legal Obligation

An enterprise may be required by legislation (or contract terms) to clean up contamination. For an illustration see *IAS 37 Appendix Recognition Example 2A: contaminated land legislation virtually certain to be enacted*.



### A Constructive Obligation

An enterprise is obliged to clean up contamination under an obligation constructed by:

- enterprise statements of management policy or intention such as a public announcement
- standard industry practice
- public expectations

Consultative obligations give management little discretion to avoid economic outflows of economic benefits. Reputations would be at stake if enterprises did not live up to their commitments. For example research conducted with the banking sector has shown that some banks in Switzerland and the UK have cleaned up contaminated sites, which have resulted from security taking, beyond legal requirements. One reason provided for this action was to avoid a risk to their reputation of later being associated with the sale of contaminated land.

For an illustration see *IAS 37 Appendix Recognition Example 2B: contaminated land and constructive obligation*

An enterprise should not be precluded from recognising an environmental liability simply because its management at a later date is unable to meet the commitment. If this does occur it should be disclosed in the notes to the financial statements together with reason why the enterprise's management is unable to meet their commitment. In rare situations where it is not possible to estimate an environmental liability this fact, together with the reason, should be disclosed in the notes to the financial statements.

**Where environmental damage relates to the enterprise's own property, or to environmental damage to other property caused by the enterprise's operations or activities for which there is no obligation on the enterprise's part to rectify – (due to the absence of an obligation at the balance sheet date) the extent of the damage should be disclosed in the notes to the financial statements or in a section outside the financial statements.**

**When there is a reasonable possibility that such damage may have to be rectified in some future period a contingent liability may have to be disclosed.**

Owners and shareholders are entitled to know the extent to which there is environmental damage to the enterprise's own property, as well as to the property of others. The introduction of new environmental legislation or the sale of the property to a third party could result in an obligation arising. Where title to the property is held as security on a loan the lender has a right to know if a property is contaminated. It is suggested that an enterprise disclose the extent to which its own property has been damaged environmentally and the extent to which its operations have caused environmental damage to other property which it is under no obligation to rectify.

## Long-Lived Assets

**Costs relating to site restoration or the closure or removal of long-lived assets which the enterprise is under an obligation to incur should be recognised as an environmental liability at the time of identifying the need to undertake the remedial action relating to such site restoration, closure or removal, and not deferred until the activity is completed or the site is closed.**

### Eastman Kodak Company Annual Report 1998

Notes to the financial statements

Note 1: Significant Accounting Policies (p 43)

#### *Environmental Costs*

Remediation costs that relate to an existing condition caused by past operations are accrued when it is probable that these costs will be incurred and can be reasonably estimated.

Note 8: Commitments and Contingencies (p 44)

(in millions US\$)	1998	1997	1996
Site remediation costs	4	2	3

**In the case of long-term decommissioning costs, however, an enterprise may choose to provide for such costs over the life of the related operations.**

### British Petroleum plc (UK) Annual Report and Accounts 1997

Accounting Policies (p. 29)

#### *Decommissioning*

Provision is made for the decommissioning of production facilities in accordance with local conditions and requirements on the basis of costs estimated as at the balance sheet date. The provision is allocated over accounting periods using a unit-of-production method based on estimated proved reserves.

Accounting Policies (p. 29)

#### *Environmental Liabilities*

Liabilities for environmental costs are recognised when environmental assessments or clean-ups are probable and the associated costs can be reasonably estimated. Generally, the timing of these provisions coincides with the commitment to a formal plan of action or, if earlier, on divestment or on closure of inactive sites.

Notes on Accounts

18 Intangible Assets (p. 38)

Net book amount (£ millions)

	Exploration Expenditure
At 31 December 1997	15041
At 31 December 1996	866

26 Other Provisions (p. 42)

Net book amount (£ millions)	Decommissioning	Environmental
At 1 January 1997	1,485	634
Exchange adjustments	14	1
Charged to income	66	(31)
Utilised/deleted	(5)	(39)
At 31 December 1997	15560	565

In some industries it has been acceptable practice to provide for long term decommissioning costs over the life of the related operations, for example, with respect to the decommissioning of drilling platforms or nuclear power plants.

The reason for applying this practice is often pragmatic:

- it may avoid excessive volatility in reported income and financial position brought about by changes in the estimate of such costs
- gradual build-up corresponds better to a suitable matching of income and expenditure. If this exception is followed the enterprise should disclose in the notes to the accounts an accounting policy note which explains this practice as well as the amount of the full provision needed to cover all long term decommissioning costs under the heading of contingent liabilities.

As illustrated in the previous extract in this section it has been common practice in industries with long-lived assets to provide for environmental costs over the life of the related operations.

**Under IAS 37 (effective 1 July 1999) it is no longer possible to spread such costs over the life of the operation (extraction) or deferred costs until the activity is completed or the site is closed. The purpose of this development is to highlight the need to recognise an environmental liability at the time the damage is caused and the need for future restoration is required.**

**The extract below illustrates the resulting change in accounting and reporting by British Petroleum since the release of IAS 37 (and FRS 12).**

British Petroleum plc (UK) Annual Report 2000

Accounting Policies

Decommissioning

Provision for decommissioning is recognized in full at the commencement of oil and natural gas production (in the next part of this section reference is made to BP's measurement of its environmental liabilities).

**Future site restoration costs which relate to damage incurred in prior periods which were necessary to prepare an asset or activity for operation and which are recognised as an environmental liability at the time the related damage is incurred (identified) should be capitalised (and amortised to the income statement over the life of the related operations).**

In many situations environmental damage has to be incurred before an enterprise can commence a particular activity and also throughout the life of that activity. Enterprises are frequently required to undertake restoration once the activity has been completed. Such restoration costs would be accrued when the environmental damage to which they relate is incurred. The amount would also be capitalised and amortised to the income statement over the life of the related operations.

#### **WMC Ltd Annual Report to Shareholders 1998**

Notes to the Financial Statements (p 6)

Note 1. Summary of Accounting Policies

e Fixed and Deferred Assets

##### *Exploration and Evaluation Expenditure*

Exploration and evaluation expenditure is written off as incurred, except when such costs are expected to be recouped through successful development and exploitation, or sale, of an area of interest. In addition exploration assets recognised on acquisition of an entity are carried forward provided that exploration and/or evaluation activities in the area have not yet reached a stage which permits a reasonable assessment of the existence or otherwise of economically recoverable reserves, and active and significant operations in relation to the area are continuing.

The expenditure carried forward when recovery is expected represents an accumulation of direct net exploration and evaluation costs incurred by or on behalf of the Group, together with an appropriate portion of related overhead expenditure, in relation to separate areas of interest for which rights of tenure are current.

If it is established subsequently that economically recoverable reserves exist in a particular area of interest, resulting in a decision to develop a commercial mining operation, then in that year, the accumulated expenditure attributable to that area, to the extent that it does not exceed the recoverable amount for the area concerned, will be transferred to mine development. As such it will subsequently be amortised against production from that area. Any excess of accumulated expenditure over recoverable amounts will be written off against profit and loss.

#### **WMC Ltd Annual Report to Shareholders 1997**

Notes to the Financial Statements

1 Summary of Accounting Policies (p 8)

g. Provisions

##### *Rehabilitation*

Where practicable, rehabilitation is performed progressively and charged to costs as a part of normal activity.

In addition, an assessment is made at each operation of the undiscounted cost at balance date of any future rehabilitation work which will be incurred as a result of currently existing circumstances and a provision is accumulated for this expenditure charged on a proportionate basis to production over the life of the operation or activity concerned, or where the applicable life concerned exceeds twenty years, on a proportionate basis to production on a twenty year basis (Olympic Dam thirty year basis). The estimated cost of rehabilitation is re-assessed on a regular basis. Rehabilitation costs include reclamation costs, dismantling and removal costs, removal of foundations and roads, the clean up of polluted materials, and re-vegetation of areas affected by operations, and monitoring of sites. Any changes in estimates are dealt with on a prospective basis.

22. Current Liabilities – Provisions include 'Rehabilitation' (p 26)

26. Non-current Liabilities – Provisions include 'Rehabilitation' (p 27)

35. Contingent Liabilities – Ascertainable, unsecured (p 41)

As disclosed in the accounting policy Note l(g), an assessment is made at each operation for future rehabilitation work which will be incurred as a result of currently existing circumstances and a provision is accumulated for this expenditure charged on a proportionate basis to production over the lesser of the life of operation or twenty years. At 31 December 1998, WMC had accrued rehabilitation provisions of \$82.5 million (June 1997: \$94.4 million). The Company estimates that, as at 31 December 1998, the total rehabilitation costs that would be incurred upon the disposal or abandonment of its mineral properties would be \$250.4 million (June 1997: \$191.6 million), resulting in a contingent liability of \$167.9 million.

## Recognition of Recoveries

**An expected recovery from a third party should NOT be netted against the environmental liability, but should be separately recorded as an asset UNLESS there is a legal right of set off.**

**Where the amount is netted because there is a right of set off the gross amounts of both environmental liability and the recovery should be disclosed.**

In most cases an enterprise would remain liable for the whole liability in case the third party fails to pay and the enterprise is liable for the full cost.

### George Wimpey plc Annual Report 1997 (p. 40)

20 Other Provisions (£ millions)	Group	Parent
At 31 December 1997	36.1	5.5
Comprising:		
- remedial work and land reinstatement	5.3	1.8
- reversal of interest swaps	3.1	3.1
- rental guarantees	15.9	-
- withdrawal from overseas operations	1.8	-
- other	10.0	0.6
	<hr/> 36.1	<hr/> 5.5

**Expected proceeds from the sale of related property and salvage proceeds should not be netted against an environmental liability.**

For an asset with limited life, salvage and residual values are normally taken into consideration in arriving at amount amortised.

## Measurement of Environmental Liabilities

Liabilities should only be recognised in financial statements if they are probable. The various 'contingencies' standards have been used to guide what is probable.

**When there is difficulty estimating the amount of an environmental liability a reasonable estimate should be provided. Details of how the estimate was arrived at should be disclosed in the notes.**

Not formally recording a liability relating to the probable amount of future costs because it cannot be reasonably estimated is unsatisfactory because there is a danger that judgement might be biased by a desire to omit liabilities in order to present a better picture of financial condition.

An accounting standard that is frequently referred to in the context of environmental liabilities is 'accounting for provisions contingencies' e.g. (IAS 37), primarily because there is often uncertainty over the amount or timing of the event that will be required to settle an enterprise's obligations.

**When measuring a liability, uncertainty may exist regarding the:**

- **extent and type of hazardous substance at a site**
- **range of technologies that can be used for remediation**
- **evolving standards as to what constitutes acceptable liability.**

The estimate may be based on information that provides a 'range of loss', and the 'best estimate' within the range should be provided.

### **Zeneca Annual Report and Accounts 1997**

Accounting Policies (p44)

#### *Environmental Liabilities*

Zeneca is exposed to environmental liabilities relating to its past operations, principally in respect of soil and groundwater remediation costs. Provisions for these costs are made when expenditure on remedial work is probable and the cost can be estimated within a reasonable range of possible outcomes.

Where practical experts should be used to arrive at the estimate, known developments, both technical and in legislation, should be taken into consideration. Any anticipated technological developments that have not been proven should not be taken into account.

Where it is not possible to arrive at a best estimate at least the 'minimum estimate' should be recognised.

**It would be a rare situation when no estimate can be made. In such a case, the fact that no estimate can be provided and the reasons therefore should be disclosed in the notes to the financial statements.**

*Liabilities Not Settled in the Near Term*

A number of approaches have been proposed for measuring liabilities relating to future site restoration, or closure and removal, costs and of other situations where expenditures relating to the settlement of the liability are not expected to be incurred for a considerable period of time.

**For environmental liabilities that will not be settled in the near term ISAR expresses a preference for measuring the liability at the PRESENT VALUE of the estimated future expenditures that will be needed, based on the current cost of performing the required activities and existing legal and other requirements.**

This approach requires additional information about the time value of money and factors that may affect the timing and amount of cashflows.

**Eastman Kodak Company Annual Report 1998**

Note 1. Significant Accounting Policies Environmental Costs

Environmental expenditures that relate to current operations are expensed or capitalised, as appropriate. (p42)

Note 8: Commitments and Contingencies (p43)

The Company expects the above expenditures (recurring and remediation costs and capital expenditures) to increase in the future. However, it is not expected that these costs will have an impact which is materially different from 1998's environmental expenditures on financial position, results of operations, cash flows or competitive position.

ISAR recommend that uncertainty inherent within the approach is minimised as follows.

- Present value discount rate – based on risk-free rate such as government securities
- Advances in technology that are expected to take place in the near term would be taken into account but those of a longer term nature would not be considered
- Expected inflation should be taken into account
- The amount of the environmental liability would be reviewed each year and adjusted for any changes made in the assumptions used in arriving at the estimated future expenditures

- Measurement of new or additional obligation will be based on factors relevant to the period in which that obligation arises.

Advocates of the approach believe that the relevance of this method outweighs the uncertainties when considered against the alternative.

**Measuring the liability at the full CURRENT COST amount is also considered acceptable.**

The proponents of the full Current Cost approach consider it to be inherently more reliable than the Present Value approach because of the absence of uncertainties about future events.

This is also the approach that would normally be used for environmental liabilities that will be settled in the near term.

**IAS 37 requires that, where the effect of discounting is material, the amount of a provision should be the present value of expenditures expected to be required to settle the obligation.**

**IAS 37 does not specify whether the present value is based on Current costs (as preferred by ISAR) or anticipated future costs, although by referring to "expenditures expected to be required" it could be inferred that it would be based on anticipated future costs. The other two positions considered acceptable by ISAR are not permitted under IAS 37. An illustration of changes in recent accounting practice under IAS 37 is shown below.**

Long-Term Decommissioning Costs

**For long-term decommissioning costs providing for the ANTICIPATED FUTURE EXPENDITURE OVER THE LIFE OF THE RELATED OPERATIONS is also considered acceptable. The approach used should be disclosed. Where the provisioning approach is used the estimated amount of the full provision needed to cover the long-term decommissioning costs should also be disclosed (as noted previously acceptable practice in some industries).**

Providing additional depreciation is not an acceptable method of accounting for environmental liabilities.

**Northern Electric plc Accounts 2000**

Notes to the Accounts

Accounting Policies

*Abandonment Costs*

A full provision has been created for future abandonment costs and a related abandonment asset has been established within fixed assets. The estimated costs of abandonment are held at the present value of the expected ultimate obligation, on the assumption that the



facilities will be fully removed where appropriate and are based on the estimates provided by operators. Amortisation of the abandonment asset is carried out on a unit of production basis, calculated field by field using the same reserve quantities as are used for depreciation purposes. It is assumed that certain abandonment costs will be allowable for petroleum revenue tax and corporation tax purposes when incurred.

**The British Petroleum plc (UK) Annual Report and Accounts 1997**

Accounting Policies:

*De-commissioning*

Provision is made for decommissioning of production facilities in accordance with local conditions and requirements on the basis of costs estimated as at the balance sheet date. The provision is allocated over accounting periods using a unit-of-production method based on estimated proved reserves.

**As noted previously under IAS 37 it is no longer possible to spread such costs over the life of the operation (extraction) or deferred costs until the activity is completed or the site is closed. The purpose of this development is to highlight the need to recognise an environmental liability at the time the damage is caused and the need for future restoration is required.**

**With this in mind changes in provisions may be necessary to allow for changes during the time period involved. Provisions should be reviewed and adjusted as necessary at each balance sheet date to reflect current best estimates and discounting. Change due to discounting are to be recognised as "interest expense" and separated from other interest disclosed on the face of the profit and loss account. The extract below illustrates the resulting change in accounting and reporting by British Petroleum. For a further illustration see *IAS 37 Appendix Recognition Example 3 Offshore Oilfield*.**

**British Petroleum plc (UK) Annual Report 2000**

Accounting Policies

*Decommissioning*

Provision for decommissioning is recognized in full at the commencement of oil and natural gas production. The amount recognized is the present value of the estimated future expenditure determined in accordance with local conditions and requirements. A corresponding tangible fixed asset of an amount equivalent to the provision is also created. This is subsequently depreciated as part of the capital costs of the production and transportation facilities. Any change in the present value of the estimated expenditure is reflected as an adjustment to the provision and the fixed asset.

Note 26: Other Provisions

	Decommissioning	Environmental
At 1 January	2,785	917
Exchange adjustments	(133)	(10)
Acquisitions	484	1,222
2000 New provisions	139	228
Unwinding of discount	110	55
Utilized/deleted	(384)	(281)
At 31 December 2000	3,001	2,131

## Disclosure

Environmental accounting as noted above is often a judgmental process.

Disclosure of information relating to environmental costs and liabilities is important for the purpose of CLARIFYING and providing further EXPLANATION of the items included in the balance sheet or the income statement.

Disclosures can be included in the financial statements, including the notes to the financial statements or, in certain cases, in a section of the report outside the financial statements themselves.

A key consideration for disclosure is whether an item of information or an aggregate of such items is material. Considerations of material should include not only the significance of the amount but also the significance of the nature of the item.

### Environmental Cost Disclosures

An argument commonly raised against separate disclosure of environmental costs charged to income in the current period is that it is very difficult to determine the amount involved. In particular, it is difficult to distinguish environmental costs from other costs, such as operating costs and to assemble the information. Ultimately a judgement must be made as to the items that constitute environmental expenses.

#### *Environmental costs- What should be disclosed?*

ISAR recommendations:

- **Types of items identified as environmental costs should be disclosed**
- **Amount of environmental cost charged to income**
  - **distinguishing between operating and non-operating costs, and**
  - **analysed in a manner appropriate to the nature and size of the enterprise and/or types of issues relevant to the enterprise**
- **Amount of environmental costs capitalised during the period disclosed in the notes.**
- **An environmental cost recorded as a:**
  - **Fine or penalty for non-compliance with environmental regulation and/or compensation to third parties as a result of loss or injury caused by past environmental pollution – no benefit or return to the enterprise, or a**
  - **Extraordinary item ... should be separately disclosed.**

### Environmental Liabilities Disclosure

There seems to be support among those that have issued documents on environmental financial accounting that there should be disclosure of the amount of environmental liabilities and valuation methods. Disclosure will assist users of the information in their assessment of the nature, timing and extent of an enterprise's commitment to future financial resources.

*Environmental liabilities- What should be disclosed?*

**Environmental liabilities should be separately disclosed either in the balance sheet or notes to the financial statements.**

**The basis of measurement should be disclosed.**

**For each material class of liabilities:**

- **A brief description of the nature of the liability**
- **A general indication of the timing and terms of their settlement**
- **Any significant uncertainty over the amount of liabilities or timing of settlement and the range of possible outcomes... should be disclosed.**

Where the present value approach has been used, consideration should be given to disclosing all assumptions critical to estimating the future cash outflows including:

- Current cost estimate of settling the liability
- Rate of inflation
- Future cost of settlement
- Discount rate(s)

### Environmental Benefits

A common criticism of those advocating that enterprises undertake a broader and more verifiable environmental disclosure is that enterprises are only ever presented with the Cost Perspective and seldom see (or seek to see) the potential benefits.

There are very few enterprises who have tried to report publicly on the financial benefits of their environmental activities.

### Accounting Policies

There would appear to be general agreement regarding the disclosure of accounting policies relating to environmental costs and liabilities. ISAR, IASC

(now IASB) and the standard setting organisations of most countries have issued general positions or statements of accounting policies and these can be applied to the disclosure of accounting policies relating to environmental liabilities and costs.

**Any accounting policies that specifically relate to environmental liabilities and costs should be disclosed.**

General

To enable the user of the information to assess an enterprise's current and future prospects regarding the impact of environmental performance on the financial position of the enterprise. ISAR propose that the following is disclosed:

**Nature of costs and liabilities**

- **A brief description of any environmental damage**
- **Any laws or regulations forming the basis of remediation**
- **Any reasonably expected change to laws, regulation, technology reflected in amount provided.**
- **Type of issues pertinent to an enterprise and its industry. Formal policy and programmes adopted or there absence noted.**
- **Improvements in key areas made since the policy was introduced or the last five years, whichever is shorter.**
- **Extent to which environmental protection measures have been in response in government legislation and the extent to which government requirements have been achieved.**
- **Any material proceedings under environmental laws.**

It would be advisable to disclose any government incentives, such as grants or tax concessions provided with respect to environmental protection measures.

Other Guidelines on Disclosure

A number of countries such as the UK, Canada and the US call for certain disclosures outside the financial statements such as:

Guidelines	Example
Operating and Financial Review	UK
Management's Discussion and Analysis	Canada & US*
Other filings:	US Securities & Exchange Commission Stock Exchange of Thailand (SET) listing

\*The US has the most extensive non-financial statement requirements relating to disclosure of environmental information. However many SEC requirements relate to the enactment of US environmental legislation.

UK Accounting Standards Board Statement of Best Practice on the Operating and Financial Review, specifically advocates a

*"discussion identifying the principal risks and uncertainties in the main line of business, together with a commentary on the approach on managing these risks and, in qualitative terms, the nature of the potential impact on results".*

One example considered relevant depending upon the nature of business is "environmental protection costs and potential environmental liabilities".

In Canada the Ontario, Quebec and Saskatchewan Provincial Securities Acts require the filing of an Annual Information Form by companies registered with the Securities Commissions of those Provinces which include:

*"the financial and operational effect of environmental protection requirement on the capital expenditure , earnings and competitive position of the issuer for the fiscal current year and any expected impact on future years".*

It should be noted that the ISAR requirements include this requirement.

US Securities and Exchange Commission

Regulations requiring disclosure on environmental matters include:

- description of business
- legal proceedings
- management's Discussion and Analysis.

*Can you think of any local disclosure requirements affecting enterprises in your region? If so, can you give an example of a disclosure?*

**British Petroleum plc (UK) Annual Report and Accounts 1997**

Financial Review (p25)

*Environmental Investment*

Operating and capital expenditure on the prevention, control, abatement or elimination of air, water and solid waste pollution is often not incurred as a separately identifiable transaction. Instead, it forms part of a larger transaction, which includes, for example, normal maintenance expenditure. The figures for environmental operating and capital

expenditures in the table are therefore estimates, based on the definitions and guidelines of the American Petroleum Institute.

Capital expenditure on pollution abatement was at much the same level as in 1996 and similar levels are expected in the foreseeable future. In addition to capital expenditure, the table shows the charges to current profits to create provisions for future environmental remediation. Expenditure against such provisions is normally incurred in subsequent periods and is not included in environmental operating expenditure reported for such periods.

Provisions for environmental remediation are made when a clean-up is probable and the amount reasonably determinable. Generally, their timing coincides with commitment to a formal plan of action or, if earlier, on divestment or on closure of inactive sites.

The extent and cost of future remediation programmes are inherently difficult to estimate. They depend on the scale of any possible contamination, the timing and extent of corrective actions, and also BPs share of the liability. Although the cost of any future compliance could be significant, and may be material to the results of operations in the period in which it is recognised, we do not expect that such costs will have a material effect on BPs financial position or liquidity. We believe our provisions are sufficient for known requirements; and we do not believe that our costs will differ significantly from those of other companies engaged in similar industries or that our competitive position will be adversely affected as a result.

In addition, we make provisions over the useful lives of our oil and gas producing assets and related pipelines to meet the cost of eventual decommissioning. The charge for decommissioning made in 1997 is shown in the table opposite and further details of our environmental and decommissioning provisions appear in Note 26 on the Accounts on page 42.

**The following extract has been added to highlight the changes in accounting and reporting as a result of the development of IAS37/ FRS 12.**

#### **British Petroleum plc (UK) Annual Report 2000**

##### Financial Summary

##### Environmental Expenditure

Operating and capital expenditure on the prevention, control, abatement or elimination of air, water and solid waste pollution is often not incurred as a separately identifiable transaction. Instead, it forms part of a larger transaction which includes, for example, normal maintenance expenditure. The figures for environmental operating and capital expenditure in the table on page 28 are therefore estimates, based on the definitions and guidelines of the American Petroleum Institute.

Environmental operating and capital expenditures were higher in 2000, principally due to the inclusion of ARCO and Burmah Castrol. Similar levels of operating and capital expenditures are expected in the foreseeable future. In addition to operating and capital expenditures, we also create provisions for future environmental remediation. Expenditure against such provisions is normally incurred in subsequent periods and is not included in environmental operating expenditure reported for such periods. Included within special items is a charge of \$170 million relating to environmental liabilities at certain US sites. This charge appears within operating expenditure (\$50 million) and new provisions for environmental remediation (\$120 million).

Provisions for environmental remediation are made when a clean-up is probable and the amount reasonably determinable. Generally, their timing coincides with commitment to a formal plan of action or, if earlier, on divestment or on closure of inactive sites.

The extent and cost of future remediation programmes are inherently difficult to estimate. They depend on the scale of any possible contamination, the timing and extent of corrective actions, and also the group's share of the liability. Although the cost of any future remediation could be significant, and may be material to the result of operations in the period in which it is recognized, we do not expect that such costs will have a material effect on the group's financial position or liquidity. We believe our provisions are sufficient for known requirements; and we do not believe that our costs will differ significantly from those of other companies engaged in similar industries, or that our competitive position will be adversely affected as a result.

In addition, we make provisions over the useful lives of our oil- and gas-producing assets and related pipelines to meet the cost of eventual decommissioning. Provisions for environmental remediation and decommissioning are usually set up on a discounted basis, as required by Financial Reporting Standard No. 12, 'Provisions, Contingent Liabilities and Contingent Assets'. Further details of our environmental and decommissioning provisions appear in Note 26 in the Accounts, on page 48.

## Verification

Reporting of various environmental issues and topics have given rise to a range of professional services, which are often referred to as 'environmental audit' services. However, there are important practical and conceptual differences between those services offered which preparers and users of environmental reports should consider.

Information is verifiable only if there are criteria available against which actual information can be verified objectively.

The ISAR recommendations provide criteria against which the audit of environmental considerations *within financial statements* can be considered.

In addition, the International Federation of Accountants (IFAC) has released an International Audit Practices Statement (IAPS) offering practical guidance on the Consideration of Environmental Matters in the Audit of Financial Statements.

The IAPS concentrates on issues such as:

- consideration of relevant environmental laws and regulations
- obtaining sufficient knowledge of the business in relation to relevant environmental matters
- using the work of environmental experts.

The document has two useful appendices:

1. Questions that the auditor may ask in obtaining knowledge of the business, including an understanding of the enterprise's controls with respect to environmental procedures.
2. Procedures that auditors may perform..

The International Audit Assurance Standards Board (IAASB) (formerly IAPC) is currently reviewing a potential standard for the verification of environmental reports (anticipated 2003).

# 3. ENVIRONMENTAL REPORTING

**The overall objective of this section is to introduce participants to the development, purpose, users and practice of public environmental reporting.**

This section includes presentations on the following:

- What is environmental reporting?
- Which companies are doing it?
- Drivers and benefits

An additional objective is to identify stakeholder groups and their information needs. This section incorporates the following:

- Conventional categorisation of stakeholder groups and their needs.
- Introducing the UNEP/SustainAbility 50 core principles.
- What should be in Corporate Environmental Reports?
- Verification issues.

## What is Environmental Reporting?

Environmental reporting is the term now commonly used to describe the disclosure by an entity of environmentally related data, verified (audited) or not, regarding environmental risks, environmental impacts, policies, strategies, targets, costs, liabilities, or environmental performance to those who have an interest in such information as an aid to enabling / enriching their relationship with the reporting entity) via either:

- the annual report and accounts package
- a stand-alone corporate environmental performance report (CER)
- a site-centred environmental statement
- some other medium (e.g. staff newsletter, video, CD Rom, internet site)

The Environmental Task Force of the European Federation of Accountants (FEE) defines the objective of external environmental reporting in a similar way:

*"the provision of information about the environmental impact and operational performance of an entity that is useful to relevant stakeholders in assessing their relationship with the reporting entity".*

Note the similarity of both definitions to the objectives of financial reporting as explained by the International Accounting Standards Committee (1995):



*"the objective of financial statements is to provide information about the financial position, performance and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions".*

For the purposes of environmental reporting it is customary to drop the emphasis on the needs of users to make 'economic decisions'.

## Corporate Governance, Accountability and Environmental Reporting

Environmental reporting could be described either as a branch of the corporate governance tree, or as one aspect of the so-called 'triple bottom line' – whereby data on financial results, environmental performance and social impact are brought together in what might be termed a 'sustainability report'.

## Historical Development of Environmental Reporting

Historically, corporate public reporting has developed as follows:

- |  |                   |
|--|-------------------|
| 1. Financial accounting and reporting          | From the 1850's   |
| 2. Financial aspects of corporate governance   | From early 1990's |
| 3. Environmental reporting                     | From early 1990's |
| 4. Social and ethical accounting and reporting | From late 1990's. |

1 + 3 + 4 = sustainability reporting or 'the triple bottom line'

**Keywords:** accountability, transparency.

## Public Sector or Private Sector?

The majority of environmental reporting examples are found in the private sector. But there is no hard and fast rule. Despite the wave of privatisation sweeping the world, in many countries environmentally sensitive industries still remain within the public sector. Examples of public sector reporting are provided below.

## The Growth in Corporate Environmental Reporting

There has been a remarkable growth in the number of entities issuing environmental performance reports.

1990: No more than 10 or 12 of voluntary public reporting world-wide

1998: Estimated 2,000 + companies internationally

Countries: At least the following: Argentina, Australia, Austria, Belgium, Brazil, Canada, the Czech Republic, Colombia, Denmark, Finland, France, Germany, Hong Kong, Hungary, Ireland, Italy, Japan, Korea, the Netherlands, New Zealand, Nigeria, Norway, Russia, South Africa, Sweden, Switzerland, United Kingdom, USA.

### 1999 PIRC UK FTSE 350 Survey Results

- 70% of companies in FTSE 350 report in some form on the environment (up from 65% in 1998).
- 62 companies in the FT 350 produced separate environmental reports (up from 60 in 1998).

Note: the UK Government is trying to increase environmental reporting to the point where all 7,000 UK companies with over 250 employees produce an environmental performance report. Denmark and the Netherlands already have environmental reporting requirements on the statute books for specified groups of large/heavily polluting companies.

### Best Practice Examples

Included below are names of some organisations that have issued environmental reports. The public sector is not always susceptible to precise definition and so includes examples from the health and education sectors as well as some 'not for profits' examples.

<b>The Private Sector</b>	<b>The 'Public' Sector</b>
<ul style="list-style-type: none"> <li>• Anglian Water; BP Amoco; BT; The Body Shop International; British Airways; National Power; NatWest Bank; Shell (UK); United Utilities</li> <li>• Novo Nordisk (Denmark)</li> <li>• Neste (Finland)</li> <li>• Kirin Brewery, Sony ; Toyota (Japan)</li> <li>• China Light &amp; Power (Hong Kong)</li> <li>• Baxter Healthcare; General Motors; Procter &amp; gamble; Sun Company (USA)</li> <li>• Northern Telecom Ltd (Canada)</li> <li>• Kvaerner ; ASG; SAS; Volvo (Sweden)</li> <li>• Bayer; Lufthansa; VW (Germany)</li> <li>• South African Breweries (S Africa)</li> <li>• Dow Europe</li> <li>• Aracruz Celulose S.A. (Brazil)</li> </ul>	<ul style="list-style-type: none"> <li>• New York State Pension Fund for the Fire Services</li> <li>• DSB / Banelstyrelsen (Denmark's national railway company)</li> <li>• Eskom (South Africa)</li> <li>• Dutch hospital group AZU</li> <li>• London Borough of Sutton (Local authority)</li> <li>• Liverpool John Moores University (education sector)</li> <li>• The Corporation of London</li> <li>• The Environment Council (NGO)</li> <li>• The New Economics Foundation (social report)</li> <li>• Department of Environment, Transport &amp; Regions (Gov Dept UK)</li> </ul>

### A Sectoral Analysis

An analysis of environmental reporting internationally (KPMG 1999) shows how the various industrial and service sectors represented in the Global 250 companies are performing in terms of public reporting, as well as the top 100 companies in each of 11 countries.

	<b>The global 250</b>	<b>1100 in 11 countries</b>
Pharmaceuticals	100% (4)	50% (30)
Mining	100% (1)	47% (15)
Forestry pulp and paper	100% (1)	55% (22)

Chemicals & synthetics	88% (8)	59% (64)
Transport	80% (5)	33% (51)
Automotive	69% (16)	38% (34)
Electronics & computers	67% (24)	30% (69)
Oil & gas	63% (19)	53% (53)
Metals, engineering & other manufacturing	50% (10)	17% (105)
Utilities	40% (10)	55% (55)
Finance, insurance & securities	15% (74)	8% (127)
Food & beverages	20% (10)	22% (104)
Communications & media	20% (15)	16% (62)
Trade & retail	17% (42)	7% (161)
Other services	0% (9)	4% (91)
Construction & building materials	0% (4)	18% (57)
	35% (88)	24% (267)

## Key Measurement and Environmental Reporting Drivers

Companies report a number of factors which drive them into the reporting process:

- international standards / mandatory requirements (US, Denmark, Netherlands, Thailand)
- competitive advantage / best in class
- environmental management systems base
- supply chain pressures
- credit & investment conditionality
- other stakeholder concerns
- peer group pressure

## The Costs and Benefits of Environmental Reporting

<b>The costs of reporting are mostly direct</b>	<b>The costs of not reporting are mostly indirect</b>
<ul style="list-style-type: none"> <li>• installing the appropriate environmental management systems</li> <li>• employing specialist staff / internal auditors</li> <li>• appointing external verifiers</li> <li>• publication / distribution costs / web site design costs</li> <li>• there is also a potential 'reporting risk' cost</li> </ul>	<ul style="list-style-type: none"> <li>• poor environmental profile <i>vis a vis</i> competitors</li> <li>• potential loss of markets / investors</li> <li>• loss / foregoing of other benefits referred to on next slide</li> </ul>

The benefits of environmental reporting vary from company to company. Environmental reporting:

- provides strong focal point for internal EMS development and managerial buy-in
- enhances employee / workforce morale
- includes the setting and publishing of performance standards which drives continuous improvement
- establishes environmental issues as a key policy / strategy element
- enables companies to re-assure investors / lenders as to environmental risk and corporate environmental engagement
- enables good environmental performers to differentiate themselves from the also-rans
- may minimise risk of regulatory intervention
- may create local community opportunities
- may provide improved access to supply chain (including public procurement opportunities)
- may provide quality public relations / profiling opportunities
- supports the audit / reporting culture which will make a company more receptive to new developments – e.g. social and ethical reporting

## Different Approaches to Environmental Reporting

Different methodological approaches to environmental reporting have evolved, mainly because of local cultural / regulatory differences.

### **Compliance based reporting**

Reporting the level of compliance with external regulations and consent limits is a common feature of the environmental reports of heavily regulated utilities (water, electricity).

### **TRI (Toxic Release Inventory) based reporting**

Many US companies are required by law to publish lists (detailed in physical quantities) of emissions of specific toxic substances.

### **Impact based performance reporting**

Most private sector companies that are not subject to specific consent requirements identify their key environment impacts and base their reporting around target setting and performance (over time) in achieving those targets.

### **The Eco-balance approach**

Some companies (including many from Germany) construct a formal 'eco-balance' (= resource inputs vs. product and non-product output) from which they then derive performance indicators.

### **The environmental burden approach (ICI)**

ICI (the UK chemicals manufacturer) has developed an externally focused reporting approach which quantifies the company's impact on 6 or 8 environmental quality measures.

### **Greenhouse Gas Indicator**

Converting energy use from all sources into a measure of CO<sub>2</sub> emissions (and other greenhouse gases) which can be expressed per unit of (say) turnover. Developed by UNEP in conjunction with NPI and Imperial College London.

### **Triple bottom line / sustainability reporting**

Sustainability reporting involves combining environmental reporting with the reporting of both financial and social / ethical / community performance measures.

In practice many companies combine one or more of the above approaches (e.g. TRI plus impact based; impact based plus environmental burden; etc.).

## **What is Normally Found in an Environmental Report?**

UNEP, working with the UK consultancy SustainAbility, have developed a core set of 50 issues which merit separate disclosure in environmental reports. The main sub-headings within which the disclosures can be grouped are:

- I. Organisational overview, management policies and systems: core issues
- II. Input/output inventory (take, make, waste) (Okobilanz)
- III. Finance
- IV. Stakeholder relationships and partnership
- V. Sustainable development
- VI. Report design.

<b>I. Organisational Overview, Management Policies and Systems: Core Issues</b>	<b>Further Development</b>
0. Introduction / overview / report contents / highlights section	Use of graphics / business process pictogram / core EPIs
1. Senior management commitment statement	The 'CEO agenda' including at minimum (i) environmental performance improvement commitment (ii) risk exposure and (ii) sustainability intentions
2. Management responsibility and accountability	Board and group structure. Evidence of integration into the business process
3. Corporate context / general site / company information	Overview of products / services / staff / finances / geography etc.
4. Formal corporate environmental (HS&E/ sustainability) policy statement	Adherence to other charters (ICC, CEPHIC, Responsible Care, CERES etc.)
5. Environmental management systems	EMS certification details and plans (EMAS / ISO 14001). Global application of environmental (etc.) policies. Training issues / procedural manuals etc.; description of measures implemented
6. Environmental auditing	Internal and external auditing procedures, audit cycles and results; attitude towards third party verification

7. Consideration of significant environmental aspects.	Criteria for deciding what are the significant aspects or impacts. Discussion of industry related issues.
8. Scope / purpose of the report	E/H/S/Social/Sustainability? – extent of group / site / business segment coverage
9. Goals and targets	(i) realisation of objectives over reporting period (ii) new goals for .... foreseeable future
10. Legal compliance	Laws to be complied with; compliance record; complaints (upheld); instances of non-compliance; fines / penalties incurred;
11. Research and development	Corporate attitude – expenditure details
12. Awards	Details
13. Verification	Scope of engagement; statement from external party; reference to unsolved problems
14. Reporting & accounting policies	Timing / regularity of reports? continuity of report structure; data evaluation methods; comparability over time and within sector.
<b>II. Input/Output Inventory (Take, Make, Waste) (Oko-bilanz)</b>	
<b>Inputs</b>	
15. Organisation (or site) specific information on material and energy flows	Absolute physical data on materials use; energy consumption; water consumption
Process management	Details / EPIs
16. Eco-efficiency / clean technology	H&S statistics & EPIs
17. Health & safety	Statistics
18. Accident & emergency response	Contingency planning details
19. Risk management & EIAs	Financial liability and causation details / contingent or actual liability?
20. Land contamination & remediation	State of the environment / sustainability indicators
21. Stewardship of local habitats & eco-systems	Data/EPIs, waste minimisation & management plans
<b>Outputs</b>	
22. Waste/residual products	Data / EPIs , environmental effects
23. Air emissions	Data / EPIs, ditto
24. Water effluents	Data / EPIs, ditto
25. Noise & odours	Data / EPIs, ditto
26. Transportation	Data / EPIs, ditto
<b>Products</b>	
27. Life-cycle design	Treatment of significant aspects of product life cycle
28. Environmental impacts	Policy towards environmental impact assessments
29. Product stewardship	Presentation of significant aspects of product development
30. Packaging	Packaging issues; strategies; absolutes; EPIs
31. Any other significant factors	Single figure composite performance index
<b>III. Finance</b>	
<b>Further Development</b>	
32. Explicit linkage through to financial statements	Annual report and accounts contain clear environmental performance / financial message
33. Environmental / social / community spending	Environmental and / or social costs / investments / charitable contributions etc.
34. Environmental liabilities and provisions	Details of contaminated land; de-commissioning costs; discount rates etc.
35. Financially quantified benefits	Recycling revenues; cost savings; new market opportunities

36. Market solutions, instruments and opportunities	Government economic penalties and incentives; impact of green taxes
37. Environmental cost accounting	> disclosure of conventional internal accounting mechanisms  > disclosure and discussion of experiments with cost internalisation and sustainability accounting
38. Future costs/investment needs business opportunities & risks	Future technological / legislative changes; evaluation of market situation and potential
<b>IV. Stakeholder Relationships and Partnership</b>	<b>Further Development</b>
39. Employees	Disclosure of stakeholder directed initiatives (and consequent response)  Different reports issued  Design of EPIs driven by stakeholder interests.
40. Politicians, legislators & regulators	
41. Local communities	
42. Investors	
43. Suppliers & contractors	
44. Customers & consumers	
45. Environment groups	
46. Science & education	
47. Other	
<b>V. Sustainable Development</b>	<b>Further Development</b>
48. Technology co-operation	Corporate attitude towards sustainable development / quality of the environment type indicators
49. Global environment	
50. Global development standards	
51. Global operating standards	
52. Visions, scenarios, future trends	
<b>VI. Report Design</b>	<b>Further Development</b>
53. Report design	<ul style="list-style-type: none"> <li>• Layout &amp; appearance; clarity – easy to follow presentation &amp; structure</li> <li>• Visual design: attractiveness; picture quality; graphics etc.; typeface</li> <li>• Comprehensibility of information; information value of headings; style; quick overview of content</li> </ul>

### Optional Syndicate Exercise 1

Please review (briefly) the points highlighted on the left hand column in the above table (points 0–53) and identify any environment related issues which you believe:

- a. are missing from the list (and which ought to be included) or
- b. are included in the list but are – in your view – politically or practically 'undeliverable'.

This section of the manual covers the objective – to identify stakeholder groups and their information needs.

## Who are the Customers for Environmental Reporting?

In financial reporting the shareholders (present and future) are assumed to be primary consumers financial performance information – and the existence and importance of other customers (stakeholders), while admitted, is often played down – especially by the standard setters. The definitions of environmental reporting provided above included the following:

*'the provision of information about the environmental impact and operational performance of an entity that is useful to relevant stakeholders in assessing their relationship with the reporting entity'.*

Who might these 'relevant stakeholders' be? Conventional environmental reporting practice can be argued to focus on the interests of all (or some) of the following.

- Shareholders / potential owners
- Internal line managers
- Employees
- Competitors
- Lenders and insurers
- Financial advisers and analysts
- Journalists / media
- Suppliers and customers
- Neighbours, local communities
- Local and regulatory authorities (& national government)
- Environmental organisations / NGOs

### Optional Syndicate Exercise 2

Review the above list of potential stakeholders.

Decide:

- (a) which of them are the most important (or relevant) from your national context and
- (b) what – in very general terms – their environmental information needs might be (e.g. a potential bidder might be most concerned to see that there were no unrecorded environmental liabilities in the financial statements).



## Tailoring Environmental Reports to User Needs

Experience seems to suggest that there is no single correct way of publishing or communicating environmental performance data. Environmental reporters have experimented with many different approaches including:

- separate sections in the annual report and accounts package
- hard copy stand alone environmental performance reports
- community directed site reports
- employee newsletters (corporate intranet)
- abbreviated / simplified reports
- customers directed reports
- corporate videos
- CD Roms with back-up information
- corporate web sites.

### Identifying Stakeholder Expectations - The UNEP / SustainAbility 'Engaging Stakeholders' Project

UNEP and the UK based consultancy firm SustainAbility are pursuing a lengthy research programme under the general title 'Engaging Stakeholders'. 'Engaging Stakeholders Vol 2 - the case studies' - contains a series of 12 case study discussions with stakeholder groups.

### Good Corporate Stakeholder Consultation Experiments

- BP
- Glaxo Wellcome
- IBM

### Obtaining Feedback

It is good practice to obtain feedback from readers of the report so as to tailor it ever more closely to their needs. Feedback can be obtained through the use of feedback forms, e-mail channels (both with and without web-sites), focus groups, etc.

### Identifying Key Sector Specific Reporting Issues

Every industry sector has a set of 'key environmental issues' facing it. One indicator of quality when reviewing public environmental reporting is how well a company addresses those issues.

### **Retail banks**

1. What steps have you taken to minimise the direct environmental impacts of the bank's activities? (Energy conservation, waste paper recycling etc.)
2. Lending policy: (a) Has the bank signed the UN Statement on banking and the Environment? (b) Do you have procedures to avoid lending to business causing significant environmental damage?

### **Distributors**

1. What measures do you take to reduce energy use and in particular energy used for transport?
2. Do you ask your suppliers for details of their environmental policies for production of their products prior to marketing and distribution?

### **Engineering**

1. Are environmental factors taken into account early in planning new products to reduce environmental impacts throughout their lifetimes (production, use, re-use and disposal)?
2. Have you set targets for waste minimisation, particularly for hazardous waste?

### **Health care**

1. What procedures do you have to dispose of clinical and / or other hazardous wastes?
2. Do you operate any targets, schemes or procedures to ensure that energy usage is reduced?
3. (Nursing homes only). What initiatives do you take to enhance the quality of life for residents?

### **Household goods**

1. What is your policy on selection of raw materials and environmental performance of suppliers?
2. In what ways is your packaging designed to facilitate recycling, re-use or recovery?

### **Leisure and hotels**

1. How do you ensure that new developments / investments have no adverse effect on the (local) environment? Are there different procedures for developing countries?
2. Do you have targets / schemes to reduce energy, water use and minimise waste to landfill at your operational and office sites?

### **Retailers, general**

1. Have you any initiatives to reduce energy use in (a) retail premises and (b) your distribution fleet?
2. What measures have you taken to reduce packaging waste and set up facilities for recycling in anticipation of the incoming packaging legislation?
3. When sourcing from developing countries (or from companies with facilities in such areas) what specifications do you have for overseas workers conditions? How do you ensure these are adhered to?

### **Pharmaceuticals**

1. What targets have you set to reduce emissions of hazardous waste? What procedures govern waste disposal?
2. Do you produce a regular report on your emissions to air, water and wastes or do you intend to in the future?
3. What is your policy on animal testing? What steps have you taken to reduce animal testing?

### Optional Syndicate Group Exercise 3

#### **Identification of key industry/sector specific reporting issues**

In syndicate groups consider the key environmental issues facing the following industry sectors that you believe should be highlighted in the public environmental reports issued by companies within that particular sector:

- Agriculture and fisheries
- Airlines, transportation, shipping
- Building and construction
- Chemicals
- Forestry, paper and pulp
- Oil, gas and other extractive industries (e.g. mining).
- Textiles

#### Verification Related Issues

The objective of independent third party verification is to add credibility to the published report. The 1999 KPMG International Survey showed that only 18% of environmental reports were verified by an independent third party (up from 15% in 1996). As the research findings shown below demonstrate, the objective of adding credibility is not always being achieved.

<b>The IRRC Study</b>	
'Environmental Reporting and Third Party Statements'	None of the stakeholder groups participating in the study believed that recent third party statements added much, if any, incremental value to corporate environmental reports published in 1994.
Investor Responsibility Research Centre 1996	The conclusion of the participants was that without agreed standards of reporting, the third party statements are 'meaningless'.
Conclusions	In order to add substantively to the credibility of environmental reports at least three new attestation elements must be incorporated into 3rd party attestation statements: (i) a statement that all major risks are included in the report (ii) recommendations on performance improvements (iii) a prioritisation of outstanding environmental challenges facing the company.
<b>The FEE Study</b>	
'FEE Research Paper on Expert Statements in Environmental Reports' Federation des Experts Comptables Europeen 1996	In the absence of generally accepted guidelines on how to perform an audit of an environmental report or how to report, the (expert) statement should include a description of the scope of the audit/audit objectives. A description of the nature of the audit procedures performed should be given to support the level of assurance that can be given.
Conclusions on expert statements generally	The conclusions in the expert statement

	must be carefully stated, particularly if the scope of the engagement is limited. Experts should reconsider their use of 'true and fair' and similar phrases which may result in unreasonable expectations.
<b>The SustainAbility / UNEP Study</b>	
'Engaging Stakeholders - 2 The Case Studies' SustainAbility / UNEP 1996	Increasing requirement for environmental reports to be independently verified - particularly in countries where environmental reporting legislation is being introduced or where stock exchange listing requirements are starting to embrace environmental issues and disclosures.

Appropriate verification standards and practices are slowly beginning to emerge. The International Audit Assurance Standards Board (IAASB) (formerly International Auditing Practices Committee IAPC) and the Environmental Task Force of the European Federation of Accountants (FEE) are both working on this topic.

FEE issued a series of discussion papers between Autumn 1999 and 2000 on "Providing Assurance on Environmental Reports" and more recently have extended their interests to "Providing Assurance on Sustainability Reports (see appendix 2 for a list of their publications). As noted in section 2 the IAASB are currently reviewing a potential standard for the verification of environmental reports (anticipated 2003).

The example shown below (BP HSE Facts 1997 report) is typical of verification statements issued by Big 5 accounting firms.

<p><b>Ernst &amp; Young Report</b></p> <p><b>To: The Board of Directors of the British Petroleum Company plc.</b></p> <p>We have carried out a review of <i>HSE Facts 1997</i>, the preparation of which is the sole responsibility of the directors. Our objective was to form an independent view on the information reported, and the processes by which the data was collected and collated.</p> <p><b>Basis of our Review</b></p> <p>In accordance with your instructions, our review comprised the following steps:</p> <ol style="list-style-type: none"> <li>1. A review of the processes by which HSE data was collected and collated through discussions with management and review of the HSE data systems at: head office; the exploration regional office at Stavanger, Norway; Grangemouth oil refinery in Scotland; and Lima chemicals manufacturing site in Ohio, USA.</li> <li>2. Discussions with a selection of HSE executives throughout BP and a review of documents including Board minutes and Ethics and Environment Assurance Committee minutes for 1997, to ensure that all significant HSE incidents reported at group level in 1997 have been considered for inclusion in <i>HSE Facts</i>.</li> <li>3. A review of documents, both internal and publicly available, to ensure that statements made in <i>HSE Facts 1997</i> are consistent with underlying information.</li> </ol> <p><b>Conclusions</b></p> <p>Over the six years we have been carrying out this review, we have seen increasing evidence of BP's commitment to HSE at all levels of the company, as well as greater attention to consistency of data measurement and estimation.</p>
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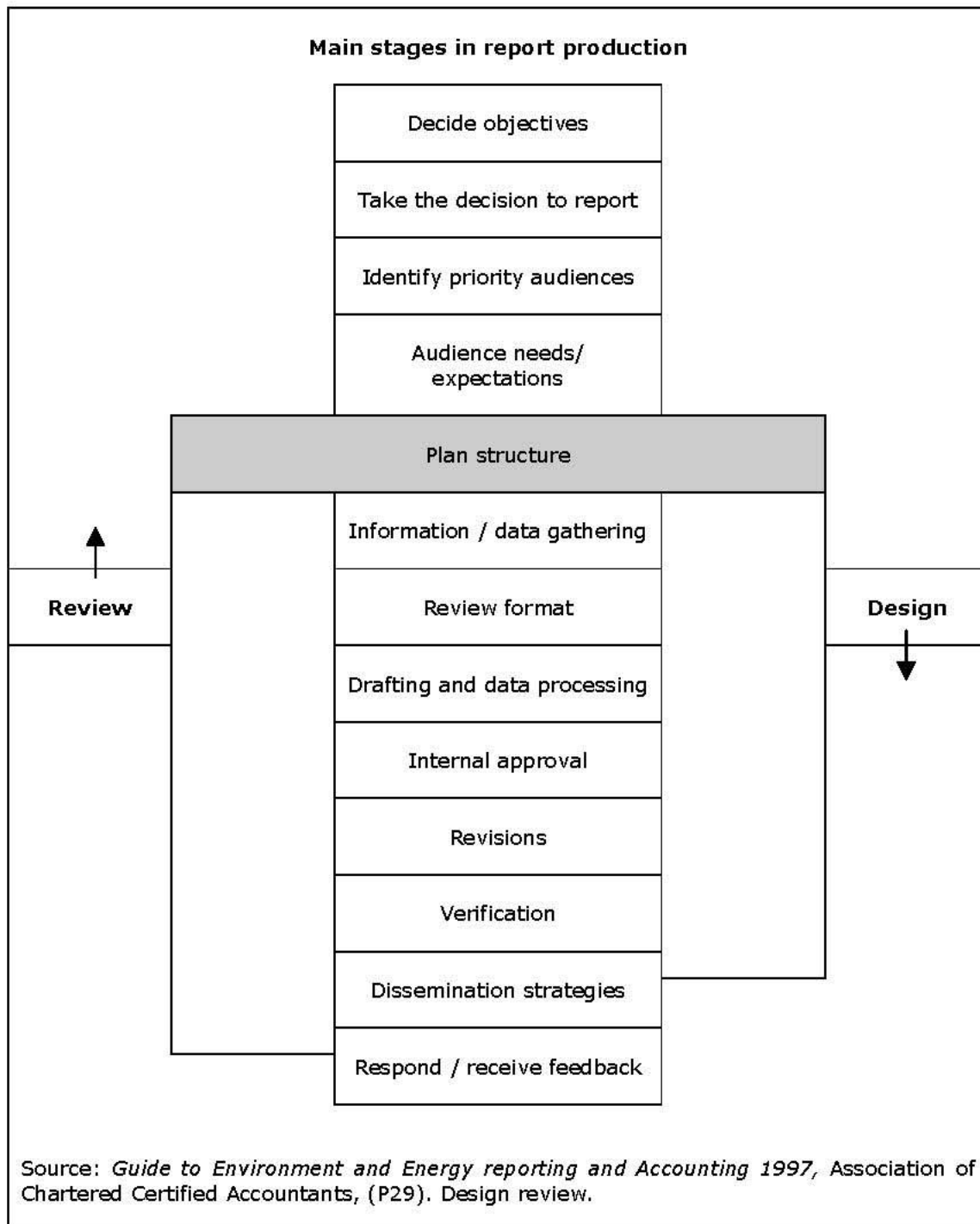
On the basis of the review described above, we have formed the following views of HSE Facts 1997.

- The reported data has been properly collated at head office from the data provided by BP's operations.
- The BP sites visited this year and last year each employed a systematic approach to HSE data collection. We have not yet reviewed data collection processes applied at Mobil sites. However, with the publication of group reporting guidelines in 1997, BP is aiming to harmonise data collection across all sites. We have recommended to management areas for improvement in data collection and collation procedures.
- We are not aware of any significant HSE incidents which were not considered for inclusion in HSE Facts.
- The information appearing in HSE Facts is consistent with supporting evidence obtained during our review.

Ernst & Young  
London  
8 April 1998

Note: This statement was prepared taking into account the guidelines of the European Federation of Accountants (FEE) Research Paper on Expert Statements in Environmental Reports.

## Conclusion 1: Getting Started



## Conclusion 2: Other Issues

### Mandatory vs. Voluntary Reporting – The Arguments

- De-regulation or better regulation?
- Cost / benefit assessments
- Welcome experimentation in a new and expanding area vs. urgent need for comparability
- Denmark and the Netherlands: mandatory environmental reporting regimes
- USA, Norway, Thailand: mandatory disclosures re financial regulators
- UK: voluntary at present but threat of a 'big stick' for all companies over 250 employees.

### Sustainable Development and Environmental Reporting

Increasing recognition of the 'triple bottom line' – incorporating:

- Economic performance
- Environmental performance
- Social / ethical performance.

Tomorrow's Company must be 'inclusive' – i.e. 'triple bottom line' focussed as well as being innovative and adaptable. An increasing number of large 'blue-chip' companies going BEYOND the environmental – Shell, BP, Body Shop, Scottish Power, GrandMet, (now Diageo) EB Eddy, Monsanto, Novo Nordisk, BT

### Environmental Reporting and the Financial Community

Issues:

- Is it just liability that matters?
- Relevance of purely environmental data?
- How is it used (if at all)?
- Should more eco-financial indicators be developed? If so which?
- Is increased annual report disclosure required? If so what needs to be disclosed?
- Can good environmental performance be linked to good financial performance.

# **4. STANDARDISED ENVIRONMENTAL PERFORMANCE INDICATORS**

## Introduction

A company's environmental performance is important to the financial markets because improved environmental performance generally leads to higher, more sustainable, financial values. Many stakeholders in general and the financial community in particular need standardised environmental performance indicators (EPIs) that link the financial and environmental performance and thus, support the quality of decision making of company directors, investors and financial analysts. The use of EPIs could increase the effectiveness and efficiency of resource allocation and therefore increases income and welfare.

A number of guidelines for measuring and disclosing environmental performance exist or are under development. Yet, due to lack of standardisation of environmental information, many environmental indicators are of limited benefit. They are of limited benefit for a number of reasons. First, there is no agreement on which indicators to use. Even within the same company, the indicators and information disclosed can change from year to year.

Second, there is no agreed method on how these indicators are to be constructed. Third, the estimation of the relevant environmental and financial indicators is not always based on the same group of companies and/or products. The result is indicators which vary from year to year and may or may not include the same subsidiaries or branches or products. The result is data which cannot be compared.

If EPIs were standardised the value of information to users could be increased. Basic research and discussions reveal that it is possible to design a standardisation process and that many stakeholders are clearly in favour of it. Standardisation of EPIs requires standardised financial data (which exist) and standardised ecological data.

ISAR proposes a standardisation method for five generic EPIs for monitoring progress in resolving five global environmental problems and linking them to financial value. The five indicators measure the five following environmental problems:

- Depletion of Non-Renewable Energy Resources
- Depletion of Fresh Water Resources
- Global Warming
- Depletion of Ozone Layer
- Waste Disposal.



## Performance Indicators in General

### Concepts of Indicators

There are two types of indicators.

- **Absolute indicators** (one-item indicators): Indicators which consist of one item (such as profits or earnings per period or energy used per period).
- **Relative (normalised) indicators** (two-item indicators). Indicators which consist of two items (such as profit or earnings as a percent of sales per period or solid waste per unit of production per period).

The usefulness of one-item indicators is limited. They only indicate that something is or is not (e.g. profit = yes, loss = no). When disclosed over time, they indicate the progress achieved.

The problem of absolute (one-item) indicators is that it is impossible to assess whether the absolute figure is good or bad. Whether profits of USD 10 million. is a good performance or not can only be assessed by comparing profit with another indicator (e.g. sales).

Relative (two-items) indicators are more useful and meaningful because:

- performance is made relative or it is 'normalised'
- the performance of a company can be compared with the performance of another company.

Therefore, the conclusion can be drawn that indicators are most useful and meaningful to users if they are:

- disclosed over time
- consist of two-items, and
- are comparable with indicators of other entities.

### Experience of Financial Performance Indicators

The experience gained in the context of using financial performance indicators for investment decisions reveals that 'two-items' indicators are applied. Important indicators for financial analysts and investors when deciding between possible investment opportunities include:

- Earnings Per Share (EPS)
- Price/Earnings-ratio (P/E) and
- Dividend (yield per share price)

all of which are two-items indicators.

The most relevant method of analysing a company's performance is to measure it over time and compare it with that of other companies in the same industry (benchmarking).

One characteristic of relative (two-item) indicators for financial markets is that both items are calculated using the same system as defined by the financial accounting and reporting regulations. Therefore, both are standardised within the same framework and thus, ratios become useful and meaningful to users and they are reliable because their construction is set out in a legal generally accepted framework.

### Definitions of Environmental Performance Indicators

Bartolomeo describes EPIs as:

*"... quantitative and qualitative information that allow the evaluation, from an environmental point of view, of company effectiveness and efficiency in the consumption of resources. EPIs consist of process, system and eco-financial indicators"* (Bartolomeo 1995).

According to the Tellus Institute, environmental performance indicators:

*"... provide a metric by which environmental performance may be tracked. Standardised EPIs allow a comparison of a company's current performance with its earlier performance, with other firms in the same sector, or with industry overall.*

*quantify resource use and environmental impacts.*

*serve to bridge the gap between environmental stewardship and the bottom line"* (White/Zinkl 1997a).

The International Organisation for Standardisation ISO 14031.5 defines environmental performance indicators as follows:

*"Specific expression that is used to provide information about environmental performance"* (ISO 1996).

Analogous to the objectives of the International Accounting Standards Committee (IASC framework 1983) it can be said that the objective of EPIs is to provide information about the environmental performance and changes in the environmental performance of an enterprise that is useful to a wide range of users in making economic and environmental decisions. This information is only useful to users if it is comparable, reliable and understandable.

Companies can pursue different environmental strategies. Investors increasingly seek out companies that pursue environmental strategies that reduce the damage caused to the environment while increasing or at least not decreasing, shareholder value. Company directors and investors need to be able to assess the outcome of various strategies. They need indicators that measure the eco-efficiency of different companies, in different industries and markets.

## Need for EPIs Measuring Eco-efficiency

### Eco-efficiency

*Eco-efficiency is defined as the ratio between an environmental and a financial performance indicator. The aim of environmentally sound management is to increase eco-efficiency by reducing the environmental impact while increasing the value added of a company. (Schaltegger/ Sturm 1989).*

The World Business Council for Sustainable Development (WBCSD) describes how eco-efficiency is achieved:

*"Eco-efficiency is reached by the delivery of competitively priced goods and services that satisfy human needs and improves the quality of life, while progressively reducing ecological impacts and resource intensity throughout the life cycle..."*

The WBCSD goes one step further by including a clear target level: An eco efficient state is reached when economic activities are at a level

*"...at least in line with the earth's estimated carrying capacity" (WBCSD 1996).*

The problem with this concept is that there are no agreed rules or standards for calculating the ecological items either within the same industry or across industries. Most importantly, there are no rules for consolidating ecological data for the entire enterprise so that such indicators can be used together with the enterprise's financial performance indicators.

Eco-efficient companies use less resources, and they cause fewer emissions to soil, water and air in producing the same output as their competitors. This higher productivity leads to an increase in the operating margin due to lower costs. Moreover, in many cases, it leads to higher sales due to an enhanced value of the products to the customer or due to an improved public image. In addition, the risks of environmental liability decreases resulting in a lower discount factor (the price for taking risks) and lower (contingent) liabilities. Wise environmental investment programs also focus on a reduction of working capital. A lower use of resources leads to lower stocks of materials and energy. Focusing on integrated solutions and avoiding end of the pipe investments can decrease incremental investments in fixed assets.

Investors use industry benchmarks to assess the environmental performance of a particular company. EPIs are often used as benchmarks. Benchmarking compares the performance of a particular company with that of the best performing company in the group using the same indicator be it financial, environmental or a composite. EPIs that measure eco-efficiency consist of two different items one of them being measured in physical units (e.g. energy used, water used, global warming emissions, ozone depleting emissions, solid or liquid waste) and the other in financial units. Among the financial items that could be used are e.g: value added (sales minus costs of goods and services purchased); sales; operating profit (EBIT); net income (net profit after tax). ISAR clearly favours value added (see below).

ISAR is proposing a set of five generic EPIs. These EPIs link environmental and financial performance. However, this does not mean that other EPIs are

inappropriate. Depending on the objective of the user other EPIs can be used. There exists a range of possible generic and industry-specific EPIs.

For example, one could use an EPI linking physical input with physical output. Generic indicators should always be seen in conjunction with other possible indicators in general and in particular with industry specific EPIs that take the specific problems and challenges of that industry into account. Moreover, some companies should go beyond the generic EPIs and try to define EPIs for local and regional environmental problems. Industry specific EPIs already exist for many industries or are being identified by industry associations.

## Relevance of EPIs to Financial Value: The Link between Shareholder Value and Environmental Performance

EPIs linking the environmental and financial performance can be used to forecast the impact of environmental issues on the future financial performance. Such EPIs will allow better investment decisions. It can be said that an above average environmental performance by a company means that, in all probability, this firm has a higher and more sustainable margin. In addition, the pressure on future investments will decrease compared to competitors with a worse performance. Lower future investments and higher margins are important value drivers, substantially influencing future free cash flows, and thus positively contributing to shareholder value.

Eco-efficiency is relevant to the financial valuation of a company because it induces:

- higher margins
- lower incremental investments in current and fixed assets
- lower discount factors
- lower tax burden.

As a consequence it leads to higher free cash flows and subsequently generates financial corporate value.

Moreover, eco-efficiency leads to lower liabilities and therefore further increasing the free cash flows available to shareholders. This is the logic behind the shareholder value approach to environmental management.

### Shareholder Value Approach

*The shareholder value approach allows for the financial quantification of a business strategy (Rappaport 1986).*

The basic logic behind the financial quantification of a business strategy is that every strategy leads to specific plans and actions. These include an investment programme or an increase in recurring costs for environment and safety. These measures lead to future cash outflows. Yet, plans also lead to future cash inflows e.g. from sales or avoided cash outflows. The difference between in flows and out flows is called 'free cash flows'. They represent the financial value of the strategy.

The free cash flow of a period is calculated as follows:

Earnings before Interests and Taxes (EBIT)

+ Depreciation on Fixed Assets  
- Taxes on Operating Profit  
= Cash Flow from Operations  
+/- Incremental Working Capital  
+/- Investments in Fixed Assets  
  
= Free Cash Flow

The total of all future free cash flows leads to the corporate value. In order to add free cash flows from different periods, the annual free cash flows are discounted by a discount factor. The shareholder value approach additionally deducts total debt from the corporate value and thus arrives at the shareholder value which is the dynamic value of the shareholders' equity. It is proven that there exists a high correlation between the stock market valuation and the financial value of a business strategy (based on future free cash flows). Thus, discounted free cash flows are a valuable indicator for the valuation of a company on stock markets and for owners of unlisted companies. Moreover, it is a future oriented approach which emphasises the importance of a real long-term view. It is repeatedly asserted that financial markets focus on the short-term performance. The shareholder value approach shows that approximately 80% of the financial value of a company stem from long-term free cash flows. The dividend valuation model can demonstrate the same. The expected dividends of the next five years only account for approximately 20% of a company's share price.

#### Case for Generic EPIs and for Industry Specific EPIs

Given the desire to link financial and environmental performance through the concept of eco-efficiency, there is a need to first select the environmental components of the eco-efficient indicators. Generic indicators are not necessarily more important than industry or sector-specific indicators but they merely have wider applicability. Thus, the generic indicators should be seen in conjunction with industry specific EPIs that take the diversity of specific sectors into account. Every enterprise should try to construct both generic and specific EPIs. Generic indicators are indicators that can be applied:

- worldwide
- by all enterprises
- across all sectors

Standardised generic EPIs would fulfil the following criteria:

- address worldwide environmental problems, [worldwide means global and common for all countries/regions]
- link an environmental problem that is relevant for all industries at the macro level to activities of enterprises at the micro level, [macro-micro link means a link of an environmental problem (e.g. global warming) at the macro economic level to enterprise activities (e.g. use of energy) at the micro economic level]

- have a direct impact on both the environmental and financial performance.

In other words the environmental indicator should be of worldwide concern, be related directly to the company's production processes, products or services and have a positive or negative impact on free cash flows of the enterprise.

Generic EPIs are best developed by a process which includes both preparers and users and which is marked by political and technical consensus. In this context, political and technical acceptance are of importance. First, there should be a political consensus or acceptance that the EPIs reflect a significant environmental problem. Second, there must be a consensus on the technique or agreement that includes on the procedure used to calculate the indicator.

ISAR proposes five generic EPIs which link environmental to financial performance. As mentioned earlier a number of experts see the concept of eco-efficiency as establishing a link or at least measuring environmental performance relative to the economic activity of the enterprise. This is particularly important when one wants to compare the environmental performance between enterprises.

Eco-efficient indicators consist of a combination of two independent indicators. Thus, standardising an eco-efficient indicator requires the standardisation of two single variables (environmental and financial).

$$\text{Eco-efficiency} = \frac{\text{environmental performance indicator}}{\text{financial performance indicator}}$$

This ratio measures the environmental impact per unit of value such as per dollar of sales or per dollar of value-added.

Reaching a firm definition eco-efficient indicators requires selecting and defining the environmental and the financial indicators. The following section describes how environmental indicators can be selected and defined.

### *Selecting and Defining the Environmental Problem*

The ideal way to reach politically and technically accepted generic EPIs is to base the indicators on international agreements as far as possible. The basic idea behind this proposal is that all stakeholders (e.g. governments, industrial associations, financial community, NGOs), directly or indirectly, influence the development of international agreements. This also means that the underlying environmental issues have been accepted as being significant problems, which requires a solution.

Generic indicators can thus be designed for issues/problems which have already been debated and for which there is an international agreement or consensus. Currently, the following four agreements seek to remedy universally recognised environmental problems:

- Agenda 21 covering economic and social development that is consistent with the needs of future generations.
- Montreal Protocol covering ozone-depleting substances
- Kyoto Protocol covering global warming gas emissions (yet to be ratified by national parliaments)

- Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal.

### Agenda 21

Agenda 21 is the most comprehensive agreement to date, which was adopted by more than 178 governments at the United Nations Conference on Environment and Development (UNCED) known as Earth Summit [held in Rio de Janeiro, Brazil, from 3 to 14 June 1992].

Of the issues contained in Agenda 21 there are three that lend themselves to generic indicators. These are:

- protection of the atmosphere (chapter 9)
- protection of the quality and supply of freshwater resources (chapter 18)
- environmentally sound management of solid wastes (incl. Hazardous waste) and sewage related issues (chapter 21).

The other issues that were looked at do not fulfil the requirements for generic EPIs. They were found to be industry specific (e.g. number 22: radioactive waste). They cannot be directly linked to a company's production processes, products, or services (e.g. number 15: biological diversity). While they dealt with global problems, the impacts depended heavily on local environmental conditions (e.g. number 12: desertification) or on a regional or country specific definition of the problem (e.g.: number 16: environmentally sound management of biotechnology).

### Selecting the Financial Performance Indicator

Two different approaches are currently being used to define the denominator of the environmental performance indicator. The denominator is either in physical or financial terms. That is, the activity or performance is given in units of physical activity (i.e. production in tons) or in units of value (i.e. sales in units of currency).

### Value Added

Looking at the different industries and enterprises, it is almost impossible to standardise (as a reference item) a common physical unit of activity or output such as 'tons of production', 'volume of production' or 'amount of service units sold'. Even if it were possible to aggregate the units these indicators will not take into account the concept of eco-efficiency which adds value by minimising resource use and environmental impacts.

EPIs linking environmental and financial performance should use a financial variable as the denominator (e.g. energy used in kWh per unit of value added). Thus, eco-efficiency indicators consist of two variables. The first is measured in physical units and the other in value units. The variables that could be used are:

1. Value added (sales minus costs of goods and services purchased)

2. Sales
3. Operating profit
4. Net income (net profit after tax).

Value added (sales minus costs for purchased goods and services) appears to be the most appropriate choice because it covers only that part of the life cycle where the respective enterprise transforms the economic inputs into products and services while using environmental resources and producing emissions and waste. A more precise correlation between resource use, environmental impact caused and economic output is contained in value added and not in sales or operating profit. This is because enterprises account in their books only for resources, emissions and waste stemming from their own production. The enterprise's environmental and financial performance relates only to that part of the production process the enterprise actually controls. The resources used, the emissions caused and the waste produced by their suppliers are not counted. Only value added can isolate the enterprise's exact contribution to the product or service. For example, the recently introduced 'guidelines for enterprise reporting on greenhouse gas emissions', launched by the United Kingdom and based on the UNEP publication 'Creating a standard CO2 indicator' recognises this and advises enterprises accordingly. It states that 'you need to set boundaries for your report to ensure that as a minimum that all the significant activities your enterprise controls are within the scope of your environmental and greenhouse gas reporting, just as they should be within the scope of your financial reporting'. This position is being adopted by other governments which are developing similar reporting protocols.

On the other hand, the use of sales and operating profits could lead to misleading indicators. Sales and operating profits add up in the whole life cycle of a product or service up to the point where the last enterprise transfers it to the customer. The following example illustrates different results obtained when using sales or value added.

#### *Sales or Value Added*

Three enterprises (A, B and C) sell the same kind of goods, windows and doors. All enterprises sell 20 windows for \$25 each and 50 doors for \$10 each giving, total sales of \$1,000 (50 per cent doors and 50 per cent windows). The in-house use (input) of energy of the enterprises ranges from 600 kWh p.a. to 1,000 kWh p.a.

Enterprise A produces only doors. The windows are purchased from a supplier. This means that A outsources 50 per cent of its production (\$500 in costs for purchased windows compared to sales of \$1,000). Enterprise B outsources 25 per cent (\$250 in costs for purchased windows compared to sales of \$1,000) and Enterprise C produces all windows and doors in-house (no cost of purchased goods compared to sales of \$1,000).

The effect of outsourcing is that part of the sales (in this case windows) is not produced in-house. As a consequence no energy has to be used for the production of the purchased goods. In the following section the enterprises are compared and commented upon based on an EPI using sales and value added as reference items.



### Sales as Reference Item

<b>EPIs using sales as a denominator.</b>			
<b>Variables</b>	<b>Enterprise A</b>	<b>Enterprise B</b>	<b>Enterprise C</b>
Energy used kWh p.a.	600	850	1,100
Sales in \$ p. a.	1,000	1,000	1,000
EPI: Energy used in kWh p.a./ sales in \$ p.a.	0.6	0.85	1.10

#### Ranking

1. Enterprise A: 0.60
2. Enterprise B: 0.85
3. Enterprise C: 1.10

Using the EPI 'energy used per unit of sales', Enterprise A appears to be the most eco-efficient but this is because it is outsourcing some of its production. If we use value-added, a different ranking will appear.

### Value Added as Reference Item

The second example uses value added as the reference item. In order to do this the profit and loss accounts are reviewed and the items comprising 'purchased goods and services' are deducted from gross sales to arrive at value added. All of the figures required are published as part of the statutory financial statements and are readily available. No additional figures are required to be collected or external research undertaken in order to calculate value added.

<b>EPIs using Value Added as a Reference Item.</b>			
<b>Variables</b>	<b>Enterprise A</b>	<b>Enterprise B</b>	<b>Enterprise C</b>
Energy used kWh p.a.	600	850	1,100
Sales in \$ p. a.	1,000	1,000	1,000
Cost of purchased goods & services in \$ p.a	-500	-250	0
Value Added in \$ p.a.	500	750	1,000
EPI: Energy used in kWh p.a./ value added in \$ p.a.	1.2	1.13	1.10

Enterprise A has produced in-house 50 doors for \$10 each and purchased 20 windows for \$25 each. This means that the value added is \$500. This figure must be compared to the energy used by enterprise A. For its in-house production (value added), enterprise A has used 600 kWh. The EPI energy used/value added is 1.2. The energy used by their suppliers for producing the 25 windows is not accounted for in the books of enterprise A but in the books of their suppliers.

Enterprise B has produced in-house 50 doors for \$10 each and 10 windows for \$25 each and purchased 10 windows for \$20 each, for a value added of \$750. This means that its EPI, energy used per unit of value added, is 1.13. Enterprise C produces 100 per cent in-house or 50 doors and 20 windows using 1,100 kWh. Its value added is \$1,000. Its EPI, energy used per unit of value added, is 1.10.

The enterprises are ranked as follows in terms of their eco-efficiency:

#### Ranking

1. Enterprise C: 1.10 (best performer)
2. Enterprise B: 1.13
3. Enterprise A: 1.20

It will be recalled that in the case of sales as a reference item, the enterprises have the reverse ranking. If value added is chosen, enterprise A ranks lowest and enterprise C is the best performer. Value added reduces some of the distortions in the indicator caused by outsourcing which the enterprise might do to improve its environmental performance. Enterprise directors are responsible for their in-house production and they can directly influence it by appropriate measures. Value added is directly linked with in-house production: the more in-house production, the higher the value added. By using as an EPI energy used per unit of value added two enterprises can reliably be compared. The focus on value added does not mean that life cycle analysis of the entire supply-consumption-disposal chain is not important. However, cost-efficient measures have not yet been developed to detect full impacts over the life of a product. Therefore, for the purpose of constructing useful and meaningful eco-efficiency indicators it is necessary to draw boundaries and for this, value-added is more precise than sales.

#### Outsourcing

Many enterprises contract out major parts of their operations, such as freight transport (in the United Kingdom this accounts for 7 per cent of national emissions), which may produce substantial environmental impacts and which are integral to their business. There are also other reasons for outsourcing. Enterprises can take advantage of economies of scale available, or avoid the investment needed for costly research and development programmes. When activities are outsourced, enterprises often exercise considerable control and influence over these activities, although they do not have to account for resources used, the emissions caused and the waste produced by the supplier.

In the example above where sales are used there is no indication of the extent of outsourcing and no reliable conclusion can be reached about in-house eco-efficiency. Where value added is used, the improvement achieved via outsourcing is reduced and a more reliable conclusion is reached about eco-efficiency of the entity being analysed.

Using value-added the eco-efficiency indicator is in line with one of the most important principles of financial accounting-the matching principle. That is, an enterprise should report what is within its control, i.e. what it actually does rather than what is outside its control. Value-added reduces the distortions from outsourcing, but it does not completely eliminate the chance that those enterprises which outsource their activities might have better EPIs as will be demonstrated in the next example.

However, outsourcing can also impact on financial ratio analysis where outsourcing can improve financial ratios by reducing low-margin activities. This, however, does not invalidate the usefulness of the financial ratios but requires increased disclosure if they are to be used intelligently. Therefore, when one is comparing enterprise data one wants details on outsourcing.

### Outsourcing and the Link Between Financial and Environmental Performance

Investors use consolidated group accounts in order to assess the financial performance of enterprises and therefore have a reasonable expectation that environmental reporting will include all the significant activities that are within the control of an enterprise. The indicators proposed in this report are generic indicators which allow comparison among different enterprises and across different industries. They are not by themselves capable of delivering a comprehensive analysis of the environmental and financial performance of an enterprise or of being able to be used to benchmark particular enterprises or industries. Apparent differences in performance may be due to differences in operating circumstances or enterprise structure as well as differences in the level of contracted out or bought in services. This set of generic EPIs do serve as a suitable starting point for qualitative analysis. A qualitative description of a group with additional information in the notes is important to users who want to reliably compare two groups (see UNCTAD 1994). This includes management discussions where analysts have to address the question of outsourcing and life cycle issues. Based on the received answers the analyst will be better placed to appropriately interpret the quantitative indicators and the ranking between different enterprises.

The following example (see table below) describes four outsourcing scenarios that could be adopted by an enterprise. It is assumed that a group EPI 'energy used per unit of value added' is one (10,000kWh/10,000\$). The group EPI of one results from four different segments with different EU scores. There are segments with high energy use and high value added activities (A, EPI = 1), segments with low energy use and low value added activities (B, EPI 1), segments with high energy use and low value added activities (C, EPI = 4) and segments with low energy use and high value added activities (D, EPI = 0.25).

<b>Outsourcing Scenarios</b>					
	Segment A	Segment B	Segment C	Segment D	Total Group
Energy used p.a.	4,000	1,000	4,000	1,000	10,000
Value added p.a.	4,000	1,000	1,000	4,000	10,000
EPI (energy used per cent of value added)	1	1	4	0.25	1

The management has the following four options for outsourcing and each will have a different impact on the group performance:

1. Outsourcing of activities with high environmental impact /high value added (segment A) would result in 6,000 units of energy compared to a value added of 6,000 which also equals one.
2. Outsourcing of activities with low environmental impact added/low value added (segment B). This would not affect the consolidated group EPI. The consolidated EPI would be 9,000 units of energy compared to a value added of 9,000 which also equals one.
3. Outsourcing of activities with high environmental impact /low value added (segment C). This would affect the consolidated group EPI. The consolidated EPI would now be 6,000 units of energy compared to a value added of 9,000 which equals 0.67.
4. Outsourcing of activities with low environmental impact added/ high value added (segment D). This would affect the consolidated group EPI. The

consolidated EPI would now be 9,000 units of energy compared to a value added of 6,000 which equals 1.5.

Thus, scenarios one and two would not affect the EPIs whereas three and four can lead to distortions. To avoid the wrong interpretation of EPIs users should discuss the possible effects of different outsourcing options with the enterprises.

Environmentalists rather than financial analysts are concerned about outsourcing. They fear that outsourcing will be used to artificially improve environmental performance. It has to be noted that outsourcing is not merely an environmental issue. Enterprises also outsource low margin activities. Analysts do not reject the financial indicators just because an enterprise is heavily outsourcing. Rather, analysts use the financial indicators as a starting point for the qualitative analysis. It has to be viewed in relation to outsourcing which is additional information. The management of an enterprise achieving an operating profit margin of 25 per cent or more has to be asked about the profitability of their suppliers and customers. Michael Porter has demonstrated that the distribution of power along a value chain (from supplier to enterprise to customer) decides which enterprise on the value chain can achieve the highest margin. Yet, he has also demonstrated that, under a long-term perspective, the success of each enterprise remains linked to the value chain of the respective industry. This also means that outsourcing of highly polluting activities remains detrimental to both the polluting and the outsourcing enterprise. Sooner or later, the environmental problems related to such an activity will fall back on the outsourcing enterprise because the enterprise is still involved in the life cycle through its suppliers.

**Outsourcing and the Feasibility Of Life Cycle Analysis for Investors**

Life cycle analysis would require a substantial amount of data that would need to be collected from myriad suppliers and customers along the full value chain. The cost of such data collection would be extremely high. It might be of low quality. The boundaries of life cycle analysis are not yet universally agreed and the standardisation of data to be aggregated has not yet been considered. At the current time, the costs far outweigh the benefits and for these reasons the value added approach, capturing those activities within the control of the enterprise, is recommended.

Based on the five universally recognised environmental problems and their corresponding EPIs and combining them with the most suitable financial indicator, the following five eco-efficiency indicators are recommended for linking an enterprise's environmental performance with its financial performance.

<b>Proposed Set of EPIs</b>	
<b>Environmental Problem</b>	<b>Environmental Performance Indicators</b>
Depletion of non-renewable energy resources	primary fossil energy use/value added
Depletion of fresh water resources	water use/value added
Global warming	global warming emissions/value added
Depletion of the ozone layer	ozone depleting emissions/value added
Disposal of solid and liquid waste	solid and liquid waste/value added

Three of the five selected problems can also be financially assessed.

Proposed Set of EPIs	
Environmental Problem	Environmental Performance Indicators Financially Assessed
Depletion of non-renewable energy resources	energy costs/value added
Depletion of fresh water resources	water costs/value added
Disposal of solid and liquid waste	solid and liquid waste costs/value added

These EPIs forecast the impact of environmental issues on future financial performance. It can be said that an above average environmental performance of an enterprise means that, in all probability, this enterprise has a higher and more sustainable operating margin. All EPIs relate to an important environmental problem which results in production costs (such as energy costs, water costs, waste costs). Therefore, there is a direct link to the profit-margin. In addition, the pressure on future investments is lower (compared to competitors with a worse performance). Lower future investments and higher margins are important value drivers, substantially influencing future free cash flows, and thus positively contributing to shareholder value.

## Current Practice

### Novartis: 1998 Health, Safety and Environment Report

Resources (p.24):

*"Apart from raw materials, the most important resources used by Novartis are energy and water.... During 1998 energy and water consumption rose due to increasing production (expressed in metric tons). Compared to a production increase of 8.5%, energy consumption increased 3.5%, while water use increased by less than 1%. This reflects an overall improvement in eco-efficiency".*

Novartis Group	1997	1998	? 1997/1998
Water consumption (Mio. cubic meter)	123	124	+ 1%
Energy consumption (Mio. GJ)	22.6	23.4	+3.5%
Production in metric tons	1'600'000	1'740'000	+ 8.5%

Novartis: 3 Divisions	Healthcare 1998	Agribusiness 1998	Consumer Health 1998
Water consumption (Mio. cubic meter)	67.5	37.0	10.4
Total 3 divisions=	114.9		
% of Total 1998 (114.9 = 100%)	59%	32%	9%
Energy consumption (Mio. GJ)	11.4	7.19	4.11
Total 3 divisions=	22.7		
% of Total 1998 (23.4 = 100%)	50%	32%	18%
Production in metric tons	122'000	1'000'000	611'000

Total 3 divisions= 1'733'000			
% of Total 1998 (1'733'000= 100%)	7%	58%	35%
(GJ = Gigajoules)			
(G = grams)			

<b>Airlines: SAS, Environmental Report 1997</b>			
Emissions per ATK in g	British Airways	KLM	SAS
CO2	800	670	897
Nox	3.1	2.4	3.3
HC	0.26	-	0.46
H2O	294	219	352
(ATK = available ton kilometres)			

<b>Sulzer: Environmental Report 1997/1998, 1998/1999</b>						
Environmental Performance Indicators (p.8)						
Energy Consumption	1993	1994	1995	1996	1997	1998
kWh/employee	20'800	20'100	21'800	18'600	21'500	21'800
kWh/ CHF value added	234'000	234'000	265'000	225'000	230'000	232'000

CO2-Emissions	1993	1994	1995	1996	1997	1998
tonnes/employee	5.6	5.2	4.5	5.1	6.3	6.5
kg /CHF value added	63'100	60'000	55'000	61'000	67'000	70'000

Water Consumption	1993	1994	1995	1996	1997	1998
m3/employee	68	74	60	56	63	59
litres/CHF value added	720'000	858'000	727'000	679'000	668'000	633'000

Waste + Recycled Materials	1993	1994	1995	1996	1997	1998
kg/ employee	1390	1510	1380	910	1180	1140
kg/CHF value added	15'700	17'500	16'800	11'000	12'500	12'000

## Other Initiatives to Develop EPIs

As stated in the introduction of this report there are at least three other major initiatives involving the development of EPIs either at the international level, the NGO level or the business association level. The activities of the following key actors which have major initiatives in this area, are highlighted.

- The International Organisation for Standardisation (ISO)
- The Global Reporting Initiative (GRI)
- The World Business Council for Sustainable Development (WBCSD).

### Global Reporting Initiative

The most comprehensive project is the NGO led Global Reporting Initiative (GRI). The GRI was established in 1997 to develop a framework (or guideline) for enterprise-level reporting on sustainable development including environmental, social and economic aspects.

The framework will serve as:

- An internal vehicle for checking consistency of sustainability policy with performance
- A logical structure for applying sustainability concepts to enterprise operations
- A framework for dialogue between internal and external stakeholders

The GRI is convened by CERES (Coalition for Environmentally Responsible Economies) and incorporates the active participation of corporations, non-governmental organisations (NGOs), consultants, accountancy organisations, business associations, universities, and other stakeholders from around the world.

The GRI Sustainability Reporting Guidelines comprise three sections.

1. The preamble describes the rationale, value, applicability, general reporting principles of the Guideline.
2. The Guidelines are divided into nine parts: CEO statement; key indicators; profile of reporting entity; policies, organisation and management systems; stakeholder relationships; management performance; operational performance; product performance; and sustainability overview.
3. The Appendices provide additional explanation and illustrations pertaining to various parts of the Guidelines.

These guidelines aim to provide guidance to enterprises preparing sustainability reports. The guidelines do not provide guidance for data collection, information and reporting systems. Nor do they give guidance on the methods to be used for calculating the indicators. The generic indicators identified by GRI correspond to those identified in this report and WBCSD. This report should be viewed a 'complementary' to GRI in that it fills in a methodological gap.

Among the indicators recommended by GRI are:

- Total energy use
- Total electricity use
- Total fuel use
- Other energy use
- Total materials use other than fuel
- Total water use
- Non-product output (NPO) defined as waste
- Quantity to NPO to land by material type

- Emissions to air by type
- Discharges to water by type

The guidelines are applicable to any size and any type of enterprise that chooses to prepare a sustainability report. The Guidelines are not specific to any industry or business sector. That is, they are designed to incorporate information common to most enterprises regardless of business sector.

### International Organisation of Standardisation (ISO)

The ISO has 133 member bodies which set technical standards for manufacturing and good processing in their countries. It has developed ISO 14000 which is a series of international, voluntary environmental management standards. Developed under ISO Technical Committee 207, the 14000 series of standards address the following aspects of environmental management, Environmental Auditing & Related Investigations, Environmental Labels and Declarations, Environmental Performance Evaluation, Life Cycle Assessment and terms and definitions.

ISO (TC 207 subcommittee 4) published ISO 14031.5: on Environmental Management – Environmental Performance Evaluation in 1999. It emphasises the management process in terms of environmental performance evaluation (EPE). ISO defines EPE as:

*"...a management process which can provide an organisation with reliable and verifiable information on an ongoing basis to determine if its performance is meeting the criteria set by its management. The information generated by EPE may also assist an organisation to:*

- *achieve continual improvement of its environmental performance;*
- *report and communicate its environmental performance;*
- *identify opportunities for prevention of pollution;*
- *increase efficiency and effectiveness and*
- *identify strategic business opportunities" (ISO 1996).*

The standard prescribes the process for evaluating if an enterprise has adopted an environmental management system. It is important to note that working group TC 207 has also identified environmental indicators which could be used for international environmental management purposes. They were not intended to communicate performance to external stakeholders.

It is important to note for environmental management systems (EMS) in general and ISO in particular, that EMS-standards are process, not performance standards (Sturm 1997). In other words, these standards do not tell organisations what environmental performance they must achieve (besides compliance with environmental regulations).

*"Instead, the standards describe a system that will help an organisation to achieve its own objectives and targets. The assumption is that better environmental management will lead indirectly to a better environmental performance" (Tibor/Feldmann 1996).*



In paragraph 4.1.2, Selecting Indicators', the working draft states:

*"Indicators help to condense relevant environmental data into compact and useful information about management's efforts, the organisation's environmental performance, or the condition of the environment. An organisation should select and develop a sufficient number of relevant and understandable indicators to evaluate its environmental performance" (ISO 1996).*

ISO/WD 14031.5 lists environmental loads, quantitative information on emissions, discharges, climate change and others. The WD lists many types of environmental indicators.

- Absolute: (e.g. total tons of SO<sub>2</sub> emitted per year)
- Relative: information scaled to, or relative to another parameter such as production (e.g. tons of SO<sub>2</sub> emitted per tone of primary product)
- Indexed: various indices constructed for either absolute or relative information, such as baseline year at 100%; or, weighting of equivalents to consolidate data (e.g. total green house gases emitted expressed as carbon dioxide equivalents)
- Qualitative: data that cannot be quantified by scientific measures, but is placed on a value scale decided by the organisation
- Financial: costs or benefits associated with environmental performance (e.g. waste handling costs, environmental performance improvement investments per ton of release reduction, reduced costs of purchased materials resulting from recycling or reuse).

### WBSCD

The WBSCD is a coalition of some 150 transnational corporations united by a shared commitment to the environment and to the principles of economic growth and sustainable development. One essential consequence of this commitment is that most enterprises strive towards sustainability by increasing their eco-efficiency. The progress achieved is, in many cases, communicated by annual environmental reports. Sometimes, these reports are known as 'eco-efficiency reports'.

The WBSCD has developed a set of eco-efficiency indicators to help measure progress toward economic and environmental sustainability in business. According to WBSCD eco-efficiency indicators primarily serve as a decision-making tool for internal management to evaluate performance, set targets and initiate improvement measures. EPIs are also an important tool for communicating to internal and external stakeholders. The objective of eco-efficiency is to maximise value while minimising resource use and adverse environmental impacts. In order to calculate eco-efficiency, the WBSCD uses the follow equation:

$$\text{Eco-efficiency} = \frac{\text{Product or service value}}{\text{Environmental influence}}$$

So far WBSCD has identified the following core indicators to be tested in a pilot application:

#### *Product/Service value*

- Mass or number of products or services produced or sold
- Net sales

#### *Product/Service Creation Environmental Influence*

- Energy consumption
- Materials consumption
- Net water consumption
- Greenhouse gas emissions
- Ozone depleting substance emissions.

As in the case of GRI these are largely consistent with what is recommended in this report. WBCSD is developing core indicators, which are internationally agreed upon. Although these generic indicators are valid for virtually all businesses, they are not of equal value or importance for a given enterprise nor are they necessarily comparable between different businesses. WBCSD recommends that ISO 14031 Environmental Performance Evaluation be used to guide the selection of relevant supplemental indicators for a specific enterprise or sector. (WBCSD, Executive Brief, August 1999)

## Conclusions

Given the initiatives of all the above mentioned organisations, it can be said that there is much support for standardising EPIs for external communications.

A substantial number of industrial associations and companies in particular have created EPIs. These EPIs are published periodically in environmental reports. Companies regard their development as being among the most important issues for the next five years (also see findings of UNEP Consultative Meeting with Industry & Trade Associations in Paris on October 1997). As a consequence, many groups use or would like to have EPIs. All, however, suffer from the lack of standardisation of EPIs and therefore, should support a standardisation of EPIs. Moreover, the knowledge of how to standardise is well established (ISO and IASC). It is less complicated than it appears.

For a recent update on this section see: Sturm, A. Mueller, K., and S. Upasena 2002; *Eco-efficiency Indicators: Conceptual Framework and Guidelines - A Manual for Preparers and Users*. UNCTAD, Geneva.

# **BACKGROUND MATERIAL**

**The objective of this section is to provide participants in the workshops with background material that will assist in putting the training manual in context with other initiatives.**

## Contents of the Resources Section:

(Please note: the UNCTAD position paper 'Accounting and financial reporting for environmental costs and liabilities' (adopted February 1998) is available separately).

In addition to provide assistance for those businesses that are getting started in Environmental Accounting and Reporting.

Glossary of Terms	A list of the terms used in the training manual as well as common acronyms likely to be encountered.
Publications	Useful publications available to explore the three key themes in greater depth, if appropriate.
Web Site Addresses	Catalogued by country and correct as at September 1998. A number of links and addresses do change and whilst every effort has been made to ensure their accuracy no warranty is held out that the addresses quoted are still current.
Review Group List	The peer group review is an important aspect of the production of the manual. The group has been selected on the basis of their geographical and business mix as well as their knowledge and understanding of the subject.
Details of the Trainers	Short biographies of the trainers responsible for the delivery of the initial workshops.

# **APPENDIX 1:**

## **GLOSSARY OF TERMS**

<b>Term</b>	<b>Definition</b>
AA 1000	AccountAbility 1000 – a process standard for social accounting, auditing and reporting issued in 1999 by the UK-based Institute of Social and Ethical AccountAbility (ISEA).
ACBE	The UK Government’s Advisory Committee on Business and the Environment.
ACCA	The Association of Chartered Certified Accountants
Benchmarking	Comparison process of indicators with determined reference or target values (usually within a sector) conducted within or across companies as a tool for deriving improvement measures and goals.
BiE	Business in the Environment (UK NGO)
CERES	Coalition for Environmentally Responsible Economies (US NGO) Founder member of the Global Reporting Initiative – see below.
CICA	Canadian Institute of Chartered Accountants
Company comparison	A company comparison compares the indicators of a company, a process or an individual department with those of other companies processes or departments.
EAAF	European Accounting Advisory Forum
EFFAS	European Federation of Financial Analysts’ Societies
EMAS Regulation	Regulation allowing voluntary participation by industrial companies within the European Union in an Eco-Management and Audit Scheme. After a successful external evaluation the company receives an official statement of participation.
Environment	Broadly, the conditions and systems that support life on earth including water, air and earth and flora and fauna.
Environmental audit	An investigation of processes and procedures of a company or site with respect to its compliance with applicable laws and regulations and impacts on environmental conditions.
Environmental due diligence (appraisal)	The collection and assessment of data relative to environmental conditions or impacts prior to a transaction, to identify and quantify environment related financial, legal and reputational risks.
Environmental impact assessment	An assessment of the resultant impacts on the natural or human environment of a

	proposed project or development usually performed by an environmental consultant.
Environmental management system	The combination of arrangements for assessing, monitoring and recording a company's environmental impact.
Environmental reporting (1)	A business's periodic compilation and publication of voluntary environmental reports or environmental statements
Environmental reporting (2)	'The provision of information about the environmental impact and operational performance of an entity that is useful to relevant stakeholders in assessing their relationship with the reporting entity'. (FEE environmental working party)
Environmental statement	An 'environmental statement' is part of the EMAS Regulation and must be prepared by sites after the first environmental review as well as after each subsequent audit. It serves the purpose of informing the public on the business's activities and the environmental impacts involved.
EPA	The US Environmental Protection Agency
EPI	Environmental Performance Indicator
FASB	Financial Accounting Standards Board
FEE	The European Federation of Accountants (environment working party)
GAAP	Generally Accepted Accounting Principles
GRI	Global Reporting Initiative
HSE	Health Safety and the Environment.
IASC	International Accounting Standards Committee.
ICAEW	Institute of Chartered Accountants in England and Wales
ISAR	(United Nations Intergovernmental Working Group of Experts on) International Standards of Accounting and Reporting.
ISO 14001	International specification and guideline for using environmental management systems (since 1996).  Based on ISO 14001, any type of organisation can have their environmental management system certified.
ISO 14031	Internationally applicable guideline (developed within the broader ISO 14000 framework) for environmental performance evaluation using environmental performance indicators. The standard is of informative character and cannot be used as a basis for certification.
Natural resources	The aspects of nature that have value either left in situ or exploited. Traditionally, the

	actual and potential forms of wealth supplied by nature such as coal, oil, water power, arable land, timber or fishing stock etc.
SA 8000	Social AccountAbility 8000 – an accreditation / certification standard developed by the US-based Council on Economic Priorities (CEP).
Sustainable development	The concept of meeting the needs of the present generation while not compromising the ability of future generations to meet their own needs. Achievement of sustainable development includes consideration of environmental, social and ethical issues.
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
WBCSD	World Business Council for Sustainable Development

# **APPENDIX 2:**

## **PUBLICATIONS**

### General

BiE (Business in the Environment) and Extel Financial, 1994. *City Analysts and the Environment: a survey of environmental attitudes in the City of London.*

BiE and AEA Technology, 1996. *The Index of Corporate Environmental Engagement: a survey of the FTSE 100 companies.*

Bonifant, Benjamin C., Mathew B. Arnold, and Long, Frederick. J., 1995. 'Gaining Competitive Advantage Through Environmental Investments', *Business Horizons*, July/August, pp.37-47.

Eyring, G., 1992. *Green Products by Design: Choice for a Cleaner Environment*, Office of Technology Assessment, Washington D.C.

Fiksel, Joseph, 1993/1994. 'Quality Metrics in Design for Environment', *Total Quality Environmental Management*, Winter, pp.181-192.

Lifset, Reid J., 1993. 'Take It Back: Extended Producer Responsibility as a Form of Incentive-Based Environmental Policy', *Journal of Resource Management and Technology*, 21, 4, pp.163-173.

Schoemaker, Paul J. and Schoemaker, Joyce A., 1995. *Estimating Environmental Liability: Quantifying the Unknown.*

SETAC Foundation for Environmental Education, 1991. *SETAC Product LCA Advisory Group Mission Statement*, Pensacola, FL

### Environmental Accounting

Background Document:

ISAR, 1998 *Accounting and Reporting for Environmental Liabilities and Costs within the Existing Financial Reporting Framework*. Prepared by David Moore, CICA. Published UNCTAD: Geneva.

Further reading:

ACCA/UNEP, 2002 *Accounting: industry as a partner for sustainable development*. World Summit on Sustainable Development Report. UNEP.

BT (British Telecommunications). 1996. *Environmental Accounting in Industry: a practical review.*

Chadick, B., Rouse, R.W. and Surma, J., 1993. 'Perspective on Environmental Accounting', *The CPA Journal*, January, 1824.

EPA (Environmental Protection Agency - USA), 1995. *An Introduction to Environmental Accounting as a Business Tool: key concepts and terms* (also ACCA, 1996 reprint)

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- European Commission, 2001 *Recommendation on the recognition, measurement and disclosure of environmental issues in the annual accounts*. EC. (2001/453/EC)
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- Gray, R., and J. Bebbington, 2001 *Accounting for the Environment* (2<sup>nd</sup> edition). Sage, London.
- Gray, R. and D. Collison 2001 *The Professional Accounting Bodies and the Provision of Education and Training in relation to Environmental Issues*. ICAS, Scotland.
- IFAC 2001 *Exposure draft 21 Provisions, Contingent Liabilities and Contingent Assets*. IFAC Public Sector Committee.
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- Siegel, A., 1992. *Environmental Costs: Accounting and Disclosure*. Price Waterhouse.
- UN Division on Sustainable Development. 2001 *Improving Government's Role in Promoting Environmental Management Accounting*. Environmental Management Workbook 1-3. UNDSO.

### Environmental Reporting

Background document:

UNCTAD, 1998 *Integrating Environmental and Financial Performance in External Corporate Reporting*. Prepared by Roger Adams, ACCA. UNCTAD: Geneva.

Further reading:

ACBE (UK Government's Advisory Committee on Business and the Environment), 1997. *Environmental Reporting: An Approach to Good Practice*.

ACCA (Association of Chartered Certified Accountants)

- (1) ACCA, 2000. *ACCA UK ERA 1999 Report of the Judges*, ACCA, London.
- (2) Bebbington, J. and Thomson, I., 1996. *Business conceptions of sustainability and the implications for accountancy*, ACCA Research Report 48, CAET, London.
- (3) Beattie, V. and Jones, M., 1992. *The Communication of Information Using Graphs in Corporate Annual Reports*, ACCA Research Report 31, CAET, London.

Canadian Institute of Chartered Accountants. *Reporting on Environmental Performance*.



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Company Reporting Ltd., 1996. *Corporate Environmental Reporting in the UK*.

Ditz, J.D., and Ranganathan, J., 1997. *Measuring Up: Towards a Common Framework for Tracking Corporate Environmental Performance*, World Resources Institute.

ECAFF (EC Accounting Advisory Forum), 1994. 'Environmental Issues in Financial Reporting', DG XV. 6004/94.

FEE ( European Federation of Accountants)

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(2) FEE 2000 *Towards a generally accepted framework for environmental reporting*. July.

ICI Plc., 1997. *Environmental Burden: the ICI approach*, ICI..130

INEM (International Network for Environmental Management), 1996. *Case Studies in Environmental Management*, Germany.

IRRC (Investor Responsibility Research Center)

(1) IRRC, 1996. *Environmental Reporting and Third Party Statements*, IRRC.

(2) IRRC, 1996. *Corporate Environmental Profiles Directory*, Executive Summary, IRRC.

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NPI (National Provident Institution), 1996. *Global Care Best in Class*, May 1996, unpublished.

Swiss Bankers Association, 1997. *Draft discussion paper regarding the voluntary disclosure of environmental information.*

100 Group of Finance Directors, 1992. *Statement of Good Practice: Environmental Reporting in Annual Reports*, Hundred Group, London.

### Environmental Performance Indicators

Background document:

Sturm, A. Mueller, K., and S. Upasena 2002 *Eco-efficiency Indicators: Conceptual Framework and Guidelines – A Manual for Preparers and Users*. UNCTAD, Geneva.

Further reading:

James, P. and Bennett, M., 1998. *Environmental performance indicators*, ACCA Research Report, forthcoming.

Ditz, D., Ranganathan, J. and Banks, R.D., 1995. *Green Ledgers*, World Resources Institute.

EFFAS (European Federation of Financial Analysts' Societies), 1996. *Eco-Efficiency and financial analysis: the financial analyst's views*, EFFAS.

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Toms, J.S., 1996. *Enlightenment vs Self Interest: Financial Performance Differentials of 'ethically' Managed Companies*, University of Nottingham Discussion paper 1996.IX.

Bartolomeo, Matteo., 1995. *Environmental Performance Indicators in Industry*, FEEM Working Paper 41.95, FEEM.

### Risk Rating

CSFI (Centre for the Study of Financial Innovation)

(1) Lascelles, David., 1993. *Rating Environmental Risk*, CSFI.

(2) CSFI, 1995. *An Environmental Risk Rating for Scottish Nuclear*, CSFI.

Diltz, J.D., 1995. 'Does social screening affect portfolio performance?', *The Journal of Investing*, Spring, pp.64–69.

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WBCSD (World Business Council for Sustainable Development), 1997. *Environmental performance and shareholder value*, WBCSD.

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# **APPENDIX 3:**

## **WEBSITES ON ACCOUNTING**

The Global Reporting Initiative (GRI)  
<http://www.globalreporting.org>

The International Federation of Accountants  
<http://www.ifac.org>

International Accounting Standards Committee  
<http://www.iasc.org.uk>

The International Accounting NetWork  
<http://www.csu.edu.au/onet>  
[http://www.csu.edu.au/onet/accounting\\_services/assns/index.html#top](http://www.csu.edu.au/onet/accounting_services/assns/index.html#top)

International Standards Organisation (ISO)  
<http://www.iso.ch/>

United Nations Conference on Trade and Development (UNCTAD): inter-governmental working group of experts on international standards of accounting and reporting  
<http://www.unctad.org/en/enhome.htm>

United Nations Environment Programme (UNEP)  
<http://www.unep.org>

World Business Council for Sustainable Development (WBCSD)  
<http://www.wbcsd.ch>

### *Australia Asia and the Pacific*

Australian Society of CPAs  
<http://www.cpaonline.com.au>

Institute of Chartered Accountants in Australia  
<http://www.icaa.org.au>

The Institute of Cost and Works Accountants of India  
<http://www.surfindia.com/icwai/homepage.htm>

Confederation of Asian and Pacific Accountants (CAPA)  
<http://www.jaring.my/capa>

Hong Kong Society of Accountants (HKSA)  
<http://www.hksa.org.hk>

International Federation of Accountants (IFAC)  
<http://www.ifac.org>

Indonesia Institute of Accountants  
<http://www.akuntan.org>

The Japanese Institute of Certified Public Accountants

<http://www.iicpa.or.id>

Malaysian Institute of Accountants  
<http://www.mia.org.my>

The Malaysian Association of Certified Public Accountants  
<http://www.jaring.my/macpa>

Institute Of Chartered Accountants Of New Zealand  
<http://io.knowledge-basket.co.nz/nzsa>

The Institute of Chartered Accountants of Pakistan  
<http://www.icap.org.pk>

Institute of Cost and Management Accountants of Pakistan  
<http://www.icmap.com.pk>

Institute of Certified Public Accountants of Singapore  
<http://www.accountants.org.sg>

The Institute of Chartered Accountants of Sri Lanka  
<http://www.icasrilanka.com>

Federation Of Certified Public Accountants Associations of Chinese Taiwan  
<http://www.nfcmaa.org.tw>

The Institute of Certified Accountants and Auditors of Thailand  
<http://www.icaat.or.th>

### British Isles

Chartered Institute of Management Accountants (CIMA)  
<http://www.cima.org.uk>

Institute of Chartered Accountants in Ireland  
<http://www.icaei.ie>

The Association of Chartered Certified Accountants (ACCA)  
<http://www.accaglobal.com>

Institute of Chartered Accountants in England and Wales (ICAEW)  
<http://www.icaew.co.uk>

### Canada

Certified General Accountants' Association of Canada  
<http://www.cga-canada.org>

The Canada Institute Of Chartered Accountants  
<http://www.cica.ca>

Ordre de Comptables Agréés de Québec/Institute of Chartered Accountants of Quebec  
<http://www.ocaq.qc.ca>

Society of Management Accountants of Canada  
<http://www.cma-canada.org>

CMA (Maritime Provinces and Bermuda)  
<http://www.purdyswharf.com/CMA>

### Europe

European Accounting Association  
<http://www.birmingham.ac.uk/EAA>

Ordre des Experts Comptables – France  
<http://www.experts-comptables.com>

### USA

American Institute of Certified Public Accountants (AICPA)  
<http://www.aicpa.org>  
<http://www.rutgers.edu/Accounting/raw/aicpa/home.htm>

Association of College and University Auditors (USA)  
<http://www.acua.org>

Pennsylvania Institute of Certified Public Accountants. 137  
<http://www.picpa.com>

### Regulators

Australian Stock Exchange (ASX)  
<http://www.asx.com.au>

US Securities Exchange Commission (SEC)  
<http://www.sec.gov>

Financial Accounting Standards Board  
<http://www.rutgers.edu/Accounting/raw/fasb>

### Academic Accounting Associations

American Accounting Association  
[http://www.csu.edu.au/anet/accounting\\_services/assns/aaa/aaa\\_sections.html](http://www.csu.edu.au/anet/accounting_services/assns/aaa/aaa_sections.html)

Accounting Association of Australia and New Zealand 1997 AAANZ Annual Conference  
<http://www.ecom.unimelb.edu.au/accwww/aaanz>

European Accounting Association  
<http://www.bham.ac.uk/business/eacong.html>

### Accounting & Business Schools

## ***Australia.***

Flinders School of Commerce  
<http://www.law.flinders.edu.au>

Macquarie University Graduate School of Management  
<http://www.gsm.mq.edu.au>

School of Accounting, University of New South Wales  
<http://pacioli.ace.unsw.edu.au>

Uni of Qld Commerce Dept  
<http://www.commerce.uq.edu.au>

## ***China & Hong Kong***

Chinese University of Hong Kong School of Accountancy  
<http://www.cuhk.hk/acy>

## ***United Kingdom***

The University of Birmingham  
[http://www.bham.ac.uk/business/home\\_page.html](http://www.bham.ac.uk/business/home_page.html)

Centre for Social and Environmental Accounting Research  
<http://www.gla.ac.uk/departments/accountancy>  
(the Site contains many useful resources, including bibliographies, reading lists, and a collection of links to other web resources, including on-line corporate social disclosure)

## ***USA***

Dept. of Accounting & MIS at Ohio State University.  
<http://www.cob.ohio-state.edu/dept/acctmis/acctmis.html>

Cal. State U. – Stanislaus (Steve Filling's page).<sup>139</sup>  
<http://panoptic.csustan.edu>

## ***Accounting, Financial and Consulting Firms***

Directory of CPA Firms  
<http://www.cpa-firms.com>

Coopers and Lybrand (AUS)  
<http://www.colybrand.com.au>

Ernst & Young (USA)  
<http://www.ey.com>

Deloitte Touche Tohmatsu (AUS)  
<http://www.deloitte.com.au>

Accounting Firms in Australia  
<http://www.proserve.com.au>

J P Morgan – a financial services firm  
<http://www.jpmorgan.com>

### Education (Accounting)

Great Ideas In Teaching Accounting

<http://www.swcollege.com/vircomm/gita/gita.html>

### Other Jumpstations

The Week's Accounting Top Five sites ASCPA link page

<http://www.hbpp.com/topfive/topfive.html>

Institute of Management and Administration (a very comprehensive set of links)

<http://www.ioma.com/index.html>

### Legislation On-line

Commonwealth Consolidated Legislation including:

- The Corporations Law
- Administrative Appeals Tribunal cases
- Commonwealth Consolidated Regulations
- Federal Court cases.

[http://www.austlii.edu.au/au/legis/cth/consol\\_act](http://www.austlii.edu.au/au/legis/cth/consol_act)

The Wharton Journal at The University of Pennsylvania

<http://journal.wharton.upenn.edu>



# **APPENDIX 4:**

## **REVIEW BODY FOR ENVIRONMENTAL ACCOUNTING**

### **WORKSHOP MANUAL**

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Arab Society of Certified Accountants  
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Prof. L.G. Nelson Carvalho

FIPECAFI  
USP FEA / USP (Bloco FEA/3)  
Av- Prof, Luciano Guaibiaorto, 908  
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Vice President – Environmental affairs  
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Ms. Isaura Maria Frondizi

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Mr. Richard Cooper

Head of Group Environmental Risks  
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Mr. Fred Drienuizen

Moret Ernst & Young  
Rotterdam  
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Prawit Ninsuvannakul

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Pyathai Road, Bangkok 10500  
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Matteo Bartolomeo  
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Italy

Randolph Anderson  
World Bank  
Washington DC  
USA

Ms Deborah Vorhies  
International Finance Corporation  
Washington D.C  
USA

Geoff Lane  
Principal Associate  
PricewaterhouseCoopers  
1 Embankment Place  
London

Zubaidur Rahman  
Millennium Consulting Co. Ltd  
20 Kamal Ataturk Avenue  
Banani, Dhaka, 1213 Bangladesh

# **APPENDIX 5:**

## **BIOGRAPHIES OF TRAINERS DELIVERING THE WORKSHOP MATERIAL**

**Roger Adams** is the Head of Technical Services and Research at the Association of Chartered Certified Accountants and over recent years has been at the centre of the discussions concerning environmental reporting. He is a member of the ISAR working group that produced the Position Paper used for this workshop. He was the initiator and is the manager of the UK ACCA awards scheme which has been a catalyst to promote more comprehensive environmental reporting and is now in its very successful eighth year. Before joining ACCA he was a lecturer in financial accounting, auditing and finance a position he held for twelve years. He has published an extensive range of works related to technical publications and textbooks in auditing and accounting. In addition, he has conducted training courses in auditing and accounting in a number of overseas locations.

**Dr Andrea Coulson** is a lecturer at the Department of Accounting and Finance at the University of Strathclyde. She was a research fellow at Durham University, Business School. A winner of the Economic and Social Research Council Global Environmental Change Programme Fellowship Award. She has been lecturer in finance and in environmental accounting at Durham University. As an environmental researcher with TNI Environmental services, she looked at the establishment of environmental policies and identification of environmental performance measurement criteria. Dr. Coulson has worked at Price Waterhouse & Co. as corporate financial auditor. She has held a number of academic related positions such as Course Tutor in the business environment, aimed at providing corporate case studies and delivering courses; and Programme Co-ordinator aimed at providing knowledge and skills to undertake environmental reviews. Dr. Coulson has conducted and published several conference papers and books chapters on finance and the environment.

**Kaspar Mueller** is a founder member and has been a partner of Ellipson Ltd. since 1990. He holds a Masters degree in economics from the University of Basel, Switzerland. His first environmental work dates back to the mid-1980s, when he developed a concept for environmentally sound investment. He previously worked as a financial analyst and head of corporate finance department at a Swiss Private Bank (1980 – 1989). Mr. Mueller worked for the Bear Stearns, Corporate Finance in New York in 1986. He is co-chairman of the Commission on Financial Accounting of EFFAS (European Federation of Financial Analysts' Societies). He is a member of the board of the Swiss Association of Financial Analysis and Investment Management and the Accounting Standard Setting Committee of Switzerland (SWISS – GAAP/FER). Presently Mr. Mueller is developing concepts and methodologies that support the development and implementation of sustainable strategies for the private and public sector.

**Dr Andreas Sturm** is a Partner at Ellipson Ltd. He holds a Master Degree (lic.oec.HSG) in Business Administration at the University of St. Gallen, Switzerland in 1987 and Doctorate at the "Management Institute" at the University of Basel, Switzerland. Where he looked at "Environmental decisions, Environmental management accounting versus life-cycle-analysis, the necessity criteria, concepts in companies. He is specialised in eco-controlling, environmental management system design and implementation and value based management. He was project manager of a research project on "Eco-Controlling for companies" Dr. Sturm lectures on Eco-Management at the University of Basel,

Switzerland and at the Asian Institute of Technology School of Management (SOM), Thailand.

**Mr. Constantine Bartel** is an Economic Affairs Officer at the United Nations Conference on Trade and Development, to maximise the trade, investment and development opportunities of developing countries in a globalising world. Prior to this, he worked for the Environment and economics unit of UNEP in Nairobi and Geneva on environmental policy and capacity building for environmental impact assessment in developing countries and countries with economies in transition. Mr. Bartel has been involved in the UNEP financial institutions initiative and has worked with the world conservation organization (IUCN) on biodiversity business. He was a tutor at the Third World Center of the University of Nijmegen in the Netherlands and a teaching assistant at the masters programmes of the International College of Agriculture in Deventer the Netherlands. Under a USAID Regional programme, Mr. Bartel worked for the Costa Rican Investment Office, CINDE/CENPRO on Investment promotion strategies in the agro-business sector in Costa Rica. Mr. Bartel holds a master's degree in Economics and a degree in International Trade from the University of Nijmegen and the College of Agriculture respectively.

# **APPENDIX 6:**

## *Demonstrating the links between financial accountability, environmental accountability and sustainability reporting: an overview*

**Roger Adams, Technical and Research Director, Association of Chartered Certified Accountants, UK**

When people talk about the last 50 years of the 20th century, there is a tendency to focus on technological advancements at the expense of advances in other areas. One such "other" area which may be little commented upon at present, but which in the future will be seen as revolutionary, is the change that has occurred in attitudes towards **corporate accountability**. This short introductory presentation sets out to highlight - and try to explain - some of the major changes that have occurred over that period.

### Overview

#### **The company (circa 1950)**

Fifty years ago, accountability had a very limited range - shareholders, prospective shareholders and revenue service: and the only language spoken was strictly the financial one. There were no accounting or auditing standards for most of the world.

#### **Greater financial accountability (1970 - 2000)**

International accounting and auditing standards are a feature of the last 25 years - driven by the internationalisation and convergence of international capital markets. "IASC 2000" is the end result of this convergence.

#### **External: corporate governance issues (1990 - 2000)**

The theory of corporate governance goes back much further than 1990, but the public reporting of CG issues - in particular Board level accountability and transparency probably starts with the UK Cadbury Committee report on the financial aspects of corporate governance (1991).

#### **Environmental legal compliance (late 1980's - 2000)**

The world's first environmental management standard (EMS) was Britain's BS 7750 (1992), now ISO 14001 (1998). Environmental legislation at the national level has been growing rapidly as have regional compliance requirements and certification schemes (e.g. the European Union's 1995 EMAS scheme). Environmental concerns relating to issues such as global warming and the ozone layer began coming to greater public (and more importantly political) prominence around this time.

#### **Wider environmental accountability (1990 - 2000)**

The advent of certified EMS's such as ISO 14000 and EMAS coincided with the start of corporate environmental performance reporting. In 1990, only 7 companies in the UK issued stand-alone public environmental reports - and pretty poor affairs they were too, most of them. Ten years on about 50% of large UK

companies issue such reports on an annual basis and the standard is becoming increasingly sophisticated.

### **Cost and eco-efficiency issues - environmental performance indicators (1995 - 2000)**

EMS's and environmental reports grew increasingly sophisticated as the decade wore on and great importance began to be paid to Environmental Performance Indicators (EPI's). These indicators focus particularly on cost and resource efficiency. Organisations such as UNCTAD, the World Business Council for Sustainable Development (WBCSD), the United Nations Environment Programme (UNEP) and the European Federation of Financial Analysts Societies (EFFAS) have been particularly important in developing these quantifiable measures of environmental accountability.

### **Internal benchmarking , the balanced scorecard (1995 - 2000)**

Throughout the 1990's there have been calls for companies to adopt a broader perspective to strategy and risk. The so-called Balanced Score Card is one such approach, as is self-appraisal under the methods advocated by organisations such as the European Quality Foundation. Probably only in the last 5 or so years has the take-up of such wide-ranging internal self-assessment methodologies become both widespread and a feature of public reporting.

### **Social and ethical accountability: the rise of reputational risk**

Risk - and its effective management - has become a major reporting issue for the 1990's. Risk may flow from conventional financial sources - hedging operations for example - but may also flow from less obvious sources such as:

Monsanto - GMO's; Shell - Nigeria/Brent Spar; Nike - child labour; Texaco - sexism; Perrier - contaminated water

Reputational risk is the term being applied to potential losses flowing from these non-financial sources. Reputational risk has assumed a high profile because many companies - especially hi-tech companies - are increasingly dependent upon a largely intangible set of assets to support their stock price.

### **The triple bottom line: financial/economic; social and environmental reporting (1995 - 2000)**

Balanced score card type methods tend to refer back to quality management systems (ISO 9000) or environmental management systems (ISO 14000) reliability.

Fuller acceptance of the notion of "corporate social accountability", based as it is upon the guiding principle of "transparency", has been the key feature of the mid - late 1990's. The "triple bottom line approach" suggests that companies acknowledge their broader impacts and seek to report publicly on their triple bottom line performance: economic, social and environmental.

### **Sustainability reporting (based on the sustainability reporting guidelines of the Global Reporting Initiative - GRI)**

Sustainability reporting goes beyond simple acknowledgement of the 3 elements of the triple bottom line and tries to integrate the three issues within the broader context of sustainable development.

GRI Global Sustainability Reporting Initiative was created late in 1997. Sustainability reporting guidelines were first issued for comment and pilot testing in March 1999 ([www.globalreporting.org](http://www.globalreporting.org)) and have subsequently been updated in 2002.

It is estimated that by the end of 2001 some 100 large multinational companies have voluntarily published GRI/ triple bottom line/ sustainability reports.

Demonstrating the link between financial accountability, environmental accountability and sustainability reporting

<b>10.</b> <b>Sustainability reporting</b> <b>(based on the sustainability reporting guidelines of the Global Reporting Initiative - GRI)</b>		
<b>9.</b> <b>Triple bottom line reporting: financial/economic; environmental; social - greater focus on risk (from all quarters)</b>		
<b>8.</b> <b>Social and ethical accountability: reputational risk (AA 1000, SA 8000, etc.)</b>	<b>1.</b> <b>The company</b>	<b>2.</b> <b>Financial accountability: financial statements (provisions, liabilities, risks, etc.) and financial audit</b>
<b>7. Internal: the balanced scorecard and other quality management initiatives</b>		<b>3. External: corporate governance issues</b>
<b>6.</b> <b>Cost and eco-efficiency issues: EMS's, EPI's and environmental cost accounting</b>	<b>5.</b> <b>Environmental accountability: environmental reporting and independent verification</b>	<b>4.</b> <b>Environmental (legal) compliance: environmental management systems (EMSs)</b>