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ENVIRONMENTAL FINANCIAL ACCOUNTING

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From a company's perspective, there seem to be two underlying forces driving company interest in various kinds of environmental performance data that might be considered varieties of accounting. The first is a growing demand from company stakeholders, based on an increased interest in environmental issues. Interested stakeholders are not only the consumers, but also industrial customers, financial institutions and others. For this reason, more and more companies are producing environmental reports, but these are often low on data content, which adversely affects company credibility on environmental issues.

Keywords: *Environmental financial accounting, environmental management accounting, environmental issues, international accounting standards*

Introduction in Environmental Accounting

Environmental accounting, a little more than a decade ago, was a rather spasmodic and rare activity. Today, the term relates to a widespread and exceptionally diverse range of activities. Accounting, at the level of an organization, can be broadly defined as the collection and aggregation of information for decision makers, both internal (e.g. managers) and external (investors, regulators, lenders, and the broader public) to the company. There are usually two types of accounting within a company: Financial accounting, which focuses on monetary information and is regulated at the national and international level, by laws, standards and guidelines and is intended for external users and management accounting which deals both with monetary and physical information. Although considered as parallel information flows, there are in practice many interlinks between financial and management accounting systems within an organization.

Information systems such as accounting are particularly strong behavioral drivers within the context of a corporation where profitability is the main daily concern. Thus, in order for environmental concerns to become more of a focus, they need to be included within those accounting systems. Doing so will inform and motivate behavior towards linking sound environmental management with everyday business and decision-making. The understanding by both some environmental and accounting practitioners of the necessity of linking environmental data to accounting systems favoured the birth of *environmental accounting* as a subset of the broader accounting systems.

From a company's perspective, there seem to be two underlying forces driving company interest in various kinds of environmental performance data that might be considered varieties of accounting. The first is a growing demand from company stakeholders, based on an increased interest in environmental issues. Interested stakeholders are not only the consumers, but also industrial customers, financial institutions and others. For this reason, more and more companies are producing environmental reports, but these are often low on data content, which adversely affects company credibility on environmental issues.

The second reason for environmental accounting is for internal information purposes. As information becomes increasingly accessible in modern society, the form the information is imparted in becomes essential. Assembling information relevant to

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environmental issues in a system, where various performance indicators would be readily available, would enable management to better encompass environmental concerns in the decision making process. For data processing, it is requirement that as much information as possible is expressed as quantified data. Another important incentive is the possibility of quantitative expression of objectives in environmental issues, which also implies the possibility of expressing achievements in percent of objectives and goals.

Based on this definition and according to the traditional separation between financial and management accounting, the following split can be made, between:

- Environmental Financial Accounting (EFA), which is aimed at external reporting of environmental and financial benefits in (sometimes verified) corporate environmental reports or published annual reports. EFA is partly governed by accounting standards issued by different professional bodies. For instance, traditional corporate financial statements usually include environmental remediation and liability issues linked to a company's activity.
- Environmental Management Accounting (EMA), which is "a*n accounting approach that considers the financial impacts of environmentally related activity such as the implementation of environmental protection expenditure, costs of legislative compliance and investment. The costs are allocated and tracked to meet the organization's own business needs, mirroring the traditional management accounting techniques*" (UK Environmental Agency, 2006). EMA is aimed at enabling to take corrective management actions to reduce environmental impacts and costs, and is therefore a tool for environmental cost control and management in order to positively correlate economic and environmental performance.

The Importance of Environmental Financial Accounting and Reporting

Environmental financial accounting deals with accounting for and reporting on environmental transactions and events that affect, or are likely to affect, the financial position and the performance of an enterprise. Laws and regulations promoting cleaner environment have led corporations to take actions relating to the environment which are costly and which has resulted in substantial financial consequences for companies, but on the other hand companies have not been pressed enough to report these information to the various stakeholders. This means a large number of interested groups are not getting information relevant to their decision-making needs.

On one hand environmental issues can dramatically impact a company's financial position and its changes for long term success. Today, this new variable should be considered in financial accounting and reporting as well as in modern financial analysis because they substantially influence risk and opportunities of companies and in extreme situations also the continuity of the business. Example of environmentally induced financial impacts on companies are environmental charges, fees, fines, sanctions, site abandonment costs, lower value of polluting production devices, environmental liabilities, etc.

Financial markets react to environmental impacts of a company as soon as the impacts are made material for the company. Financial analysts assess and consider environmentally induced financial risks and opportunities only if they posses reliable and comparable information, as a consequence disclosing environmental data in annual reports may affect the perceptions of an enterprise's earnings and cash flow.

International Accounting Standards and the Environmental Issues

From the functions of accounting, and the users of financial reporting, the role of accounting standards becomes clear. Standards provide a firm basis on which to record, compare and analyze financial position and performance of an enterprise.

International Accounting Standards Board (IASB) has issued standards that are of particular relevance to environmental issues, in particular IAS 36 on Impairment of Assets, IAS 37 on Provisions, contingent liabilities and contingent assets, and, to a lesser extent, IAS 38 on intangible assets. Although the technical parts of the standards do not refer explicitly to environmental issues, there are sufficient examples and illustrations provided elsewhere in the documents enabling to guide through the core areas of environmental liabilities and provisions. For example, Appendix C to IAS 37 contains, among others, examples dealing with: - contaminated land – legislation virtually certain to be enacted, contaminated land – constructive obligation and offshore oilfields – decommissioning costs.

On a number of occasions, it has been suggested that environmental issues may arise on which there is no relevant guidance within the existing set of International Accounting Standards. There is also a view that environmental liabilities and asset impairment are not unique and that the accounting principles set out in the standards are already adequate to deal with the problems that may arise. To some extent, both positions can be justified; the observations that follow consider some of the issues in more detail. The IASB Framework for the preparation and presentation of financial statements draw attention to the need for a narrative discussion about environmental risks, where these exist, and explain that an item of a relatively small amount that may not be material in itself may be significant in its impact on a company's reputation and public image. The main standards that are of particular relevance to environmental are presented below.

IAS 1 - Disclosure of accounting policies

IAS 1 requires that all significant accounting policies should be disclosed in the notes to the financial statements. With the growing significance of environmental issues affecting many businesses, it is possible that reference will be needed to the way in which environmental liabilities and impaired assets have been treated. For enterprises operating in environmentally sensitive sectors, such as the chemical industry, or holding large land banks, the absence of a stated policy may be a cause for criticism.

There are no requirements in IAS 1 that would result in the separate disclosure of environmental costs or liabilities. Environmental costs are rarely disclosed separately, unless they represent an exceptional item, and there is often no reason to treat such costs in a different way from other costs. The recognition of environmental liabilities may require greater clarity in identifying and defining the underlying costs, since they often involve uncertainty as regards their timing and measurement. The disclosure of such information, together with an appropriate explanation, is likely to be expected by users in view of the increasing importance of the environment. Where environmental costs are disclosed, the way in which such costs are identified should also be explained, in order to ensure that comparisons between enterprises do not result in misleading conclusions.

IAS 1 should require the separate disclosure of environmental costs and liabilities where these are material to the enterprise, where the effect of the information on the financial position, performance and changes in financial position of the enterprise could influence the economic decisions of a wide range of users of the financial statements. Where environmental costs are separately disclosed, the accounting policies should state what these costs represent, the accounting treatment adopted and, in the case of environmental costs that are capitalized, whether the amount concerned is derived from an allocation of total costs, or is restricted to those costs that relate "wholly and exclusively" to environmental factors.

IAS 16 - Property, plant and equipment

IAS 16 deals with the recognition and measurement of property, plant and equipment. Property, plant and equipment may be acquired partly or mainly for environmental reasons. In broad terms, as in the case of other items, capitalization is appropriate if the expenditure is expected to result in future economic benefits to the enterprise. IAS 16 permits subsequent expenditure relating to an item of property, plant and equipment to be capitalized only when it is probable that future economic benefits, in excess of the originally assessed standard of performance of the existing asset, will flow to the enterprise. The question therefore arises as to whether capitalization of subsequent expenditure that simply enables existing property, plant, and equipment to continue to produce future economic benefits, rather than increase those benefits, is permitted. It needs to be clarified that even though no increase in future economic benefits is produced, such acquisitions qualify for recognition as assets.

In the case of environmental expenditure, the mitigation of environmental damage and the avoidance of future closure, for example where new laws would otherwise require an enterprise to curtail its operations should be regarded as a form of future benefit. While not directly increasing the future economic benefits of any particular existing item of property, plant and equipment, the acquisition may be necessary to enable the enterprise to obtain future economic benefits from its other assets.

IAS 16 requires that, if the recoverable amount of an item of property, plant and equipment has fallen below the carrying amount, due to impairment, the carrying amount should be written down and the reduction should be recognized as an expense. Assets acquired are only recognized to the extent that the resulting carrying amount involved does not exceed the total amount recoverable from that asset and related assets.

For example, a chemical manufacturer may have to install new chemical handling processes in order to comply with environmental requirements. Related plant enhancements are recognized as an asset to the extent that they are recoverable because, without them, the enterprise is unable to manufacture and sell chemicals. If an enterprise purchases a contaminated asset and the purchase price includes an allowance for the cost of remedial work for which the acquirer has an obligation, it could be argued that, to avoid "double counting", the asset should be included at an unimpaired amount and provision made for the remedial costs.

IAS 16 should provide some guidance on the treatment of environmental expenditure relating to property, plant and equipment but should clarify the criteria for capitalization as regards whether an *increase* in expected economic benefits, rather than *continued* economic benefits, is required.

IAS 36 Impairment of assets

Whilst the general principles of reviewing asset values for possible impairment should apply equally to assets affected by environmental factors, this type of impairment often carries particular uncertainties regarding estimation of the timescale and recoverable amount. IAS 36 lists a number of indications of possible impairment. These include significant changes with an adverse effect on the enterprise that have taken place during the period or will take place in the near future, in the technological, market, economic or legal environment in which the enterprise operates or in the market to which an asset is dedicated. Environmental factors, both internal and external to the enterprise, such as contaminated land, are possible indicators of impairment. IAS 36 does not specifically address the problems involved in measuring the related impact of such environmental factors on asset values. IAS 36 attaches little importance to the relevance of management intent in determining the appropriate accounting treatment. A bias against such factors is difficult to justify in the case of environmental impairment, where an enterprise's plans for repair or abandonment are may be a key consideration. A board decision to become more environmentally friendly, with the regular publication of on enterprise's policy, targets and achievements, is likely to lower the threshold at which an asset would be considered to be impaired. Measurement of an environmentally impaired asset may be affected by:

- delayed disposal of the asset, due to the need to deal with contamination, resulting in clean up costs and increased interest charges;
- uncertainties due to the possibility of improvement in related technology or changes in legislation; and
- risks arising from the stigma effect, deterring potential purchasers and resulting in a more restricted market.

Stigma is an aspect of asset contamination arising from various factors ranging from possible public liability and additional health hazards to fear of the unknown. It might be regarded as the extent to which diminution in value of an asset attributable to the existence of contamination exceeds the costs attributable to: remediation of the asset, the prevention of future contamination, any known penalties or civil liabilities, insurance and future monitoring.

IAS 36 mentions that the recoverable amount of a cash generating unit is sometimes determined after consideration of assets that are not part of the cash generating unit but the standard does not extend this approach to the impact of contaminated land. Whilst the stigma effect might be recognized in practice by applying a further discount to the value of an asset after allowing for all expected remediation costs, the standard should refer to this problem. Where the effect cannot be measured reliably, e.g. where there have been no disposals of comparable contaminated sites, adequate disclosure should nevertheless be made. IAS 36 addresses the problems of measuring impairment of assets due to environmental factors, the difficulties of determining the recoverable amount and the uncertainties as regards the timing involved. Reference should also be made to the stigma effect that environmental impairment may have on potential purchasers.

IAS 37 Provisions, contingent liabilities and contingent assets

The recognition and measurement of provisions and the disclosure of contingent liabilities are the main areas in which environmental issues are likely to have an impact on financial reporting. IAS 37 requires that a provision should be recognized when an enterprise has a present legal or constructive obligation as a result of a past event which can be reliably estimated and it is probable (more likely than not) that an outflow of resources embodying economic benefits will be required to settle the obligation. Clean-up costs and penalties for unlawful environmental damage are mentioned as examples of obligations that would lead to such an outflow of resources, regardless of the future actions of the enterprise.

Environmental issues are likely to give rise to one or more of the following questions: whether there is a present obligation, whether a constructive obligation arises in circumstances where there is no legal obligation, whether a proposed change in the law that has yet to enacted gives rise to an obligation, whether problems of uncertainty, either as regards the timing of clean-up or technology available, prevent the amount of the obligation being measured with sufficient reliability.

Under IAS 37, a constructive obligation is an obligation that derives from an enterprise’s actions, where past practice or a published statement or policy indicates that it will accept responsibility and the enterprise has thus created an expectation that it will discharge that responsibility. In this context, it is also relevant to note that IAS 37 envisages that an obligation may be to the public at large. However, where the enterprise can avoid future environmental expenditure, such as by delaying the fitting of smoke filters, the standard prohibits the recognition of a provision.

An event that does not give rise to an obligation immediately may do so at a later date because of changes in the law. However, the effect of possible new legislation is (only) taken into consideration in measuring an existing obligation when sufficient objective evidence exists that the legislation is virtually certain to be enacted. The standard observes that, in many cases, sufficient objective evidence will not exist until the new legislation is enacted.

The problems of uncertainty, either as regards the timing of clean-up or technology available, prevent the amount of the obligation being measured with sufficient reliability. In such circumstances, IAS 37 requires a contingent liability to be disclosed. Where the effect of the time value of money is material, such as a present obligation that will result in cash outflows some time after the balance sheet date, the provision is discounted to present value. This presupposes that the timing involved and the appropriate discount rate can be determined with sufficient reliability. A related uncertainty concerns the technology that will be available when the clean-up occurs. The standard suggests that the amount of the provision to be recognized should reflect the reasonable expectation of technically qualified, objective observers, taking account of all available evidence as to the technology that will be available at the time of the clean-up.

Where there is an obligation for which provision is made or a contingent liability that is disclosed, the financial statements are required to include a brief description of the nature of the item. In the case of a provision, disclosure includes the expected timing of any expenditure, an indication of the uncertainties involved and the amount of any expected reimbursement. In the case of a contingent liability, the estimated financial effect, uncertainties involved and the possibility of any reimbursement are only required to be disclosed where practicable. Given that many environmental liabilities arise over a long term and are therefore difficult to determine because of uncertainties about future legislation, the extent and timing of clean-up that will be required and the technology available, a provision may not be recognized under the strict criteria in IAS 37 even though it is probable that expenditure will be necessary. In such circumstances, it is important that the existence of a contingent environmental liability should at least be disclosed.

Appendixes to IAS 37 provides some helpful examples to illustrate the application of the standard in various circumstances, including cases of cleaning up contaminated land and the adoption of preventative environmental measures (the fitting of smoke filters). In the case of smoke filters that are not fitted by the effective date of the relevant legislation, it seems counter-intuitive that this is treated as the absence of an obligating event and that provision is only recognized for an obligation to pay fines or penalties. Where legislation has only recently been introduced, estimating the amount of such penalties may be more difficult that predicting the cost of fitting smoke filters. In any case, an enterprise would normally wish to adopt the more positive step of recognizing a provision for fitting smoke filters, particularly if it intends to take such a measure within the foreseeable future. The example could therefore be misleading. It may also suggest that the rules regarding an obligating event need to be reviewed to enable situations such as the failure to fit smoke filters to be treated as the obligating event.

IAS 37 recognizes the difficulties in recognizing and measuring provisions for environmental costs. It is also a matter for concern that adopting a restrictive approach in such cases may have the undesirable effect that a provision for clean up costs is not recognized when it would be prudent to do so. It should also provide more specific guidance to ensure that environmental liabilities that are contingent on an uncertain future event are recognized if it is probable that they will arise and that, where it is not possible to estimate the amount of the liability, its nature and existence are disclosed.

IAS 38 Intangible assets

The development and increasing use of certain intangible assets in the environmental area, such as pollution permits and emission rights, would appear to meet the criteria for recognition as intangible assets, in that they are likely to result in future economic benefits to the enterprise, which would otherwise be unable to operate, and have a cost that can be measured reliably. IAS 38 should clarify whether such items as pollution permits and emission rights, which are increasingly used in the environmental area, would meet the criteria for recognition as intangible assets.

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