

ENVIRONMENTAL ACCOUNTING



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Abstract

Since a few years ago, the society is increasing the role of environment inside the businesses. This is the effect, among other facts, of the damage that the society has been done along the time to the environment. That is why people are more concerned about not damaging it and decreasing the damage caused.

It has to be said that companies are not the only responsible who destroy the environment, but they are one of the biggest ones. Because of that, businesses are more and more interested in taking into account the environment issue.

The aim of this project is to show up the most important aspects of the environmental accounting and it is going to be shown the differences between USA and EU environmental laws, the differences in the practice (some real cases) and, lastly, how industries act in environmental audits.

ENVIRONMENTAL ACCOUNTING

INTRODUCTION

In businesses there are lots of factors that affect both their external and internal aspects. Environment is one of the factors that has increased during the last decades. People, both external and internal users, are more and more concerned about the damage that companies made and are making to the environment. Because of that, environmental accounting has become into a more and more popular aspect in the enterprises' accounting.

The principal aim of this project is to make a revision of the most important environmental accounting's aspects. Those are what environmental accounting is and what environmental costs are which are covered in the first chapter of this paper.

This project specifically focuses on the differences between United States' environmental law and European Union's environmental law. To begin with this subject, firstly it is needed an explanation of the different type of treatments that companies can use to deal with environmental costs. After that, the specifically environmental law is presented, first of the United States and lastly of the European Union. Those aspects are explained along the second chapter of the project.

To continue with a deeper revision of environmental matters, the following chapter covers the subject of the different organisations/programs that USA and EU have which have focused on environment. In addition to make differences clearer, it appears some fragments of two companies' environmental reports highlighting those differences and some similarities. It is covered in the third chapter.

To finish this project's body I cannot avoid to mention the concept of environmental audits. So in the fourth chapter that subject is explained and it is exposed, in depth, which the functions are of the previous organisations/programs related to these audits.

Finally, in the last chapter some conclusions are shown up.

The main objectives of this project are varied. The first one is to present and clarify the environmental accounting's basics concepts to be able to understand the following explanations. Secondly, another objective is to make a review of the applicable environmental law in the United States and in the European Union to know the range of action that companies have. Another one is to explain how strictly environmental agencies and organisations of the United States and the European Union work and their functions. Then, to highlight the differences between those agencies and organisations, both theoretically and using real examples to make the previous

explanations clearer. Finally, the last objective is to make clear environmental audit's concept as well as its process and the competences that those agencies and organisations have related to this subject.

CHAPTER 1 ENVIRONMENTAL ACCOUNTING

1. Definition

Environmental accounting, it is known also as "green accounting", could be defined as the information about the damage caused into the environment that is linked to the company's activity/ies. It could be explained also, as (Christophe 1992, pag 98) "a system of efficient information about the grade of damage of the natural elements linked to the business' activity, used to decrease that damage and inform people who is in and out of the company".

It has been a dearth of environmental accounting laws to show companies how to deal with this subject. This dearth has been caused, among other things, by the lack of interest from the accounting institutions to make them. It has become interesting recently because the society is concerned. Although the common sense could make us think that the most reasonable way to conduct this type of costs is to connect them with the products whose production process caused them, without a correct and formal way, like strength laws, to face this problem, there were shown up different ways to do it.

Some companies do not take into account this part of the accounting, others think of it as a cost, others as an asset and, finally, others as a contingency. This classification depends on how the businesses think about the environmental actions that they carry out.

2. Environmental Costs. Definition and classification

Here, it is needed to identify what an environmental cost is. Environmental costs are "the individual result from the activities that affect the environmental quality" (Scavone, G, 2000). So, we could think about these costs like the expenses needed to take care of the Earth or to prevent its damaged. That is true, but environmental costs include more. The most known classification is the one that distinguish environmental costs in four groups: prevention, evaluation, control and failure.

- Prevention costs are the ones oriented to preclude environmental damages which, in a long-term, will be higher than these ones. They are implanted to anticipate the possible environmental costs that could appear during the

business' activity. For example: adapting their processes with "end-of-pipe" technology or using cleaner technologies.

- Evaluation costs are oriented to measure the areas of the production process which cause more environmental damages. For example environmental audits.
- Control costs are referred to contain dangerous substances. For example, warehouses to contain nuclear or chemical remains.
- Failure costs are those ones needed to face up the damages caused on environment by the production process. For example, to pay fines.

The United Nations Division for Sustainable Development published in 2001 "*Environmental Management Accounting Procedures and Principles*" where, among other things, they defined what environmental costs are, their types and categories, and how can companies treat them.

Their classification is based on the historical knowledge of the environmental costs and it tries to make the search easier for the companies.

The first group includes those costs that from the beginning had been treated and they are still being handled, which are waste disposal and emission treatment costs. This is related with the traditional environmental costs' definition "compromising all treatment, disposal and clean-up costs of existing waste and emissions" (United Nations, Environmental Management Accounting Procedures and Principles, 2001) (1, figure 1)

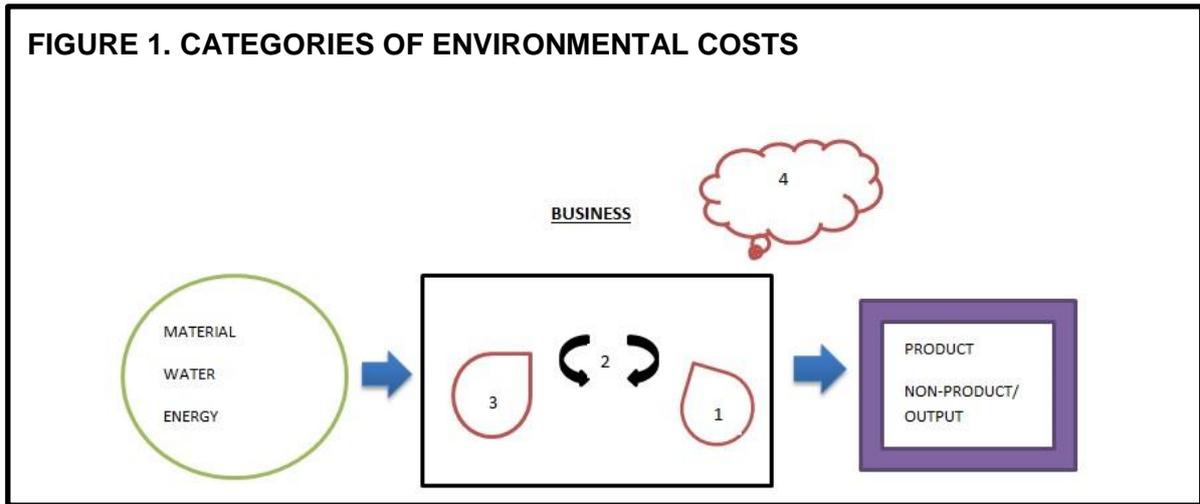
The second one adds labour and external services for getting a better environmental costs' management. This group is known as prevention and environmental management. This group focuses on the annual costs for prevention of waste and emissions. (2, figure 1)

The third group adds the wasted material purchase value. Here, all the wasted material is evaluated with its material purchase value or material consumed value. (3, figure 1)

Finally, it is added the production costs of non-product output. (3, figure 1)

Besides that, there are other costs which are external from the company. They could affect the environmental costs of the business but they are not under its control. (4, figure 1)

FIGURE 1. CATEGORIES OF ENVIRONMENTAL COSTS



Source: Adapted from “Environmental Management Accounting Procedures and Principles”, United Nations, 2001.

CHAPTER 2 ENVIRONMENTAL ACCOUNTING LAW

At this point, it has to be shown the different existing laws about environmental matters in the United States and in the European Union. Firstly, it is going to be explained how environmental costs have to be treated depending on how companies identify them.

1. Different treatments for environmental costs

Basically, around the world (including USA and EU), it is known three types of treatment for the environmental costs. Treat them as assets, as expense or as contingencies (liabilities). Their classification will depend on how companies manage them. Each group counts them in a different way and reflects them in a different annual account. Those three groups are not incompatible; one company could have some costs of every type.

Environmental costs treated as assets. It has to be noted that this way of treatment is the most difficult one to put in practice. Here, there are included different types of environmental costs. Costs that companies incur in different equipment to mitigate the production process' effect on the environment can be counted as major acquisition costs. That type of costs, usually, is related to assets with a long useful life, so they will be becoming expense with their depreciation method. Another type of cost is the one that the business incurs in it after the purchase moment but it adds to the asset a better function or it will cause more revenues. Some examples could be: filters for removing polluted particles from the air sent out from an industry, or measures related to treat water, etc. Also, some environmental costs managed as I+D costs could be activated

too. The most important point to classify an environmental cost as an asset is that it has to be able to cause revenues, itself or in concordance with other costs, to the company. This group will be presented on de Balance Sheet of the company. The company is able to add notes in the Financial Report explaining its future environmental plans.

Environmental costs treated as expenses. It is the most prudent treatment. This option establishes the environmental costs as normal expenses of the exercise they are linked to. To manage them as expenses means that they are going to be account in that exercise. For example, some type of procedure that a company needs to carry out for cleaning their wastes thrown in the water or the cost of an external professional to elaborate an environmental report. As known, this group will be presented in The Profit and Loss Account.

Environmental costs treated as contingencies. At this point it is necessary to define specific concepts: liability, provision and contingency. For doing this, it is going to use the definition offered by the PGC's conceptual framework (PGC, 2007)

- Liability: actual obligations caused by past events and for its cancellation a company will have to outflow of economic resources which can produce benefits or economic incomes in the future. Here, there are included provisions (PGC, 2007, pag.15)
- Provision: liabilities, which obeying the definition and registered criteria of this framework, are probable and undetermined about its quantity or the date. Provisions could be determined by a legal disposal, contractual or by an implied or implicit obligation. (PGC, 2007, pag.36)
- Contingency: liabilities different from provisions that have to be mentioned in the Notes. (PGC, 2007, pag36) A contingency is an obligation but instead of probable is just possible. So companies will recognize a liability as a contingency when its occurrence depends on uncertain future events, or when it has not been accounted because it is not certain that for cancelling it companies will have to outflow economic resources, or when it cannot be reliably quantified.

In this way those costs treated as contingencies are understood not as real costs, instead, they are understood as possible future costs. They will be treating them as normal expense only if they can be efficiently estimated and efficiently evaluated its possibility to occur. If it is not possible, the company will have to present them in the Notes. An example of environmental contingency could be, fines for any type of

accident caused by the company that, at the closing moment, it is remanding for trial. This group will affect both Balance Sheet and Profit and Loss Account, and it also will have some notes in the Financial Report.

Once the treatments are explained, it is time to show the existing law, firstly, in USA and secondly in EU.

2. Environmental accounting law in the United States

USA's companies present their financial statements according to the Generally Accepted Accounting Principles (GAAP). In there, there are explained the accounting standards and principles needed to elaborate the financial statements.

There is a form, Form 10-K that companies need to fill. There, businesses have to add the company's annual report, prepared under SEC (Securities and Exchanged Commission) rules. It also includes non-financial information such as company history, organisational structure, and lines of business, risk factors and industry conditions. The Form 10-K has in it some environmental items that companies have to include. These are, Item 101, 103 and 303.

Item 101. Description of business: *“Appropriate disclosure also shall be made as to the material effects that compliance with Federal, State and local provisions which have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, may have upon the capital expenditures, earnings and competitive position of the registrant and its subsidiaries. The registrant shall disclose any material estimated capital expenditures for environmental control facilities for the remainder of its current fiscal year and its succeeding fiscal year and for such further periods as the registrant may deem materials.”* (17 CFR 229.101 (c) (xii)) And also it mentions, *“Costs and effects of compliance with environmental laws (federal, state and local).”*(17 CFR 229.101 (i) (xi))

Item 103. Legal Proceedings: *“Notwithstanding the foregoing, an administrative or judicial proceeding (...) arising under any Federal, State or local provisions that have been enacted or adopted regulating the discharge of materials into the environment or primary for the purpose of protecting the environment shall not be deemed “ordinary routine litigation incidental to the business””* Those provisions have to be presented only if it is important qualitatively for the company, if it is important monetarily, or if the government is involved and it is important qualitatively and monetarily.

Item 303. Management discussion and analysis: here, the company should relate about the financial condition giving information about the environmental contingencies.

This form, which was established by SEC, only shows up what companies have to include in their annual accounts but it has not explained how to do it. The American organism in charge of this matter is the Financial Accounting Standards Board (FASB). As pointed out on its web site, FASB's mission is to *“establish and improve standards of financial accounting and reporting that foster financial reporting by nongovernmental entities that provides decision-useful information to investors and other users of financial reports.”*

FASB has been elaborating different environmental standards and publishing interpretations to clarify those standards. Those standards related to environmental matters are: FAS 5 (1975), FAS 143 (2001), FAS 157 (2006) and FAS 141-R (2007). It has to be said that since, approximately, 2006 this organism is working in accordance with the International Accounting Standards Board (IASB) to get, in the future, that all the companies around the world could prepare and present their annual accounts under the same standards and, through this way, the information could be totally equal in the whole world. But, nowadays it is still not that concordance. That is why below it is going to be explained the environmental FASB standards and further the IFRS standards corresponding to EU.

As mention before, the first environmental standard established by FASB was FAS 5: Accounting for contingencies (1975). As it appears on the FASB's website the abstract of this standard is *“This Statement establishes standards of financial accounting and reporting for loss contingencies. An estimated loss from a loss contingency shall be accrued by a charge to income if two conditions are met: (a) information available prior to issuance of the financial statements indicates that it is probable that an asset had been impaired or a liability had been incurred at the date of the financial statements, and (b) the amount of loss can be reasonably estimated.”* That is known as the accounting principle of the income and expense's correlation. It continues with *“Accruals for general or unspecified business risks (“reserves for general contingencies”) are no longer permitted. Accounting for gain contingencies under Accounting Research Bulletin No. 50, Contingencies, remains unchanged; they are recognized when realized.”* This standard establish that companies only have to add that loss of contingency if it is probable and it can be effectively estimated; if not, they only have to explain them on the notes. That is the prudence principle.

Related to this standard, some interpretations and other additional publications have been made to make FAS 5 clearly. Those are: FASB Interpretation (FIN) N° 14 (1976), SEC Staff Accounting Bulletin (SAB) N° 92 (1996), Statement of Position (SOP) 96-1 by the American Institute of Certified Public Accountants (AICPA) (1996), and two standards (E2173-01, E2137-01) by the American Society for Testing and Materials (ASTM) (2001)

FIN 14 sets up the amount that companies have to calculate of the contingencies' loss if it is possible only one range of possibility that it was not clear in the FAS 5. It estimated that the best amount is the minimum one on that range.

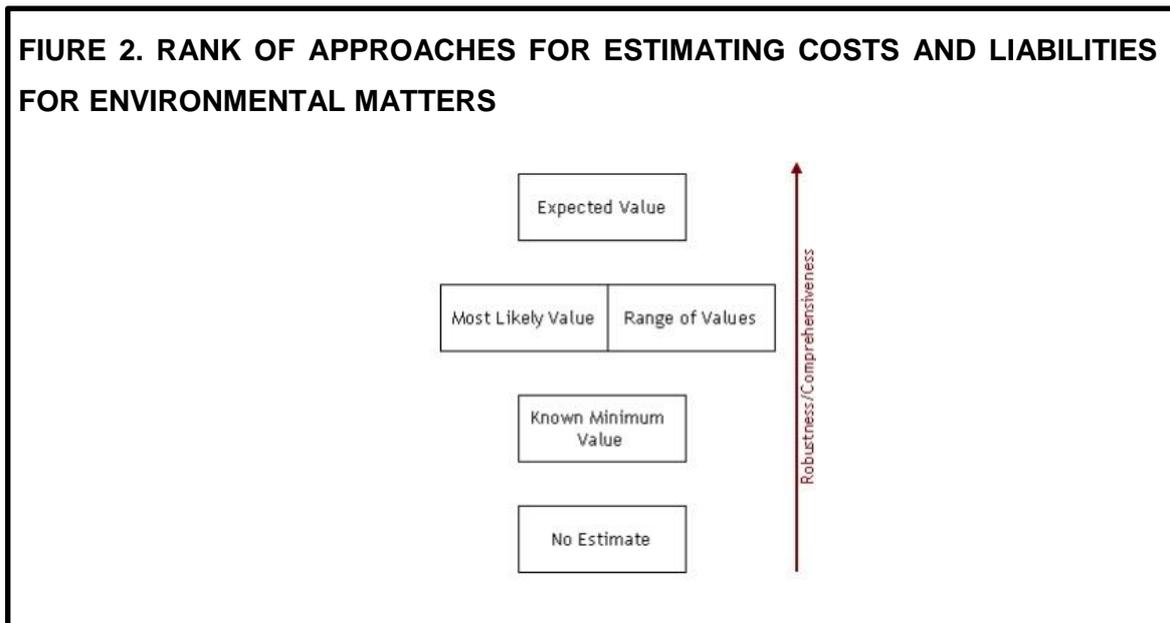
SAB 92 tried to make clear the main criteria of the FAS 5 about how an environmental liability has to be considered. It determined that "*management may not delay recognition of a contingent liability until only a single amount can be reasonably estimated*" It can be reasonably estimated when it is based on "*currently available facts, existing technology, and presently enacted laws and regulations, and should take into consideration the likely effects of inflation and other societal and economic factors.*"

SOP 96-1 was created at the same time as the SAB 92 and it also added information to clarify companies how to calculate and estimate the environmental liabilities. It explains that during the research investigation, companies should count all the costs related to it and, after that, businesses can estimate the total of those costs. But this additional publication did not give enough information of how to recognize those costs.

E2137-01 this standard adds cost estimation methods. They use, above all, expected value estimation methodologies. Those methods are based on the more information companies have, the more accurate will be the estimation of environmental costs, as it can be shown in figure 2.

E2173-01 helps companies which have to present aggregated accounts, because in the FAS 5 (and FIN 14) was not mention anything about this matter. So it sets up that "*disclosure should be made when an entity believes its environmental liability for an individual circumstance or its environmental liability in aggregate is material.*"

FIGURE 2. RANK OF APPROACHES FOR ESTIMATING COSTS AND LIABILITIES FOR ENVIRONMENTAL MATTERS



Source: American Society for Testing and Materials. 2001. *Standard Guide for Estimating Monetary Costs and Liabilities for Environmental Matters*

Another standard about environmental matters was FAS 143: Accounting for Asset Retirement Obligations (2001). Where is explained how to act when companies need to retire an intangible long-lived asset and how to act front their retirement costs. It establishes that, if a rational fair value can be estimated, companies have to present it in the period when it occurs. On the other hand, the retirement costs can be capitalized during the asset's life. It also points out that those assets retirements are counted as liabilities and the method used to discount those liabilities is the credit-adjusted risk-free interest rate. The risk-free interest rate is based on United States Treasury bills, notes and bonds because it is assumed that the government will never default on its debts obligations. The method credit- adjusted risk-free interest rate consists in adding to that risk-free rate or treasury rate some amount of additional interest rate basis points to reflect the possibility that companies can default. Determining this additional interest rate depends on different factors related to market data, such us the pricing of corporate debt.

However, that standard does not clarify the timing for recognition those liabilities, so an interpretation was made: FIN 47.

In that interpretation, FASB clarify that *“the term conditional asset retirement refers to a legal obligation to perform an asset retirement activity in which the timing and (or) method of settlement are conditional on a future event that may or may not be within the control of the entity; and when an entity has sufficient information to reasonably*

estimate the fair value of an asset retirement obligation". In FAS 143 is said that *"timing and method of settlement are conditional"* but the obligation itself cannot be conditional. So, in FIN 47 they make clear that the retirement costs that companies have to incur in to conserve or sell the asset cannot be postpone indefinitely. So costs have to be recognized when the asset is owned. In addition in this interpretation, FASB explains when it is considered that a company has sufficient information to estimate the fair value. They identify that there is enough information when the fair value is added to the acquisition price, exists a market for those assets and the company has sufficient information to employ the present value method. This last one is explained in deep pointing out that sufficient information is when settlement date and method are been established by others and (or) when there is information to help the company estimating the settlement date or a range of dates, the settlement method or a list of potential methods, and (or) the probabilities related to both concepts.

In FIN 47, lastly, FASB explains that if a company cannot estimate effectively the fair value of the liability, it has to describe on notes that obligation and why it could not estimate that aspect.

Other standard made by FASB was FAS 157: Fair Value Measurements (2006). This standard was made for clarifying the fair value concept, not only related to environmental obligations, also for the rest of obligations. It establishes three levels where companies can be on, depending on the amount of information that they have for estimating the fair value. In the *first level*, there are the companies which their assets/obligations have an active market where market prices can be observed. In the *second level*, there are the companies that their assets/obligations have an active market but there is no market price observed. However there are inputs available to observe. Lastly, in the *third level*, there are the companies which their assets/obligations have not an active market, but they have historic information to make assumptions to estimate which would be the market value if a market existed.

Finally, the last standard related to environmental aspects was made in 2007, FAS 141-R: Business Combinations. That standard clarifies that when a company acquires another one all assets and liabilities, including contingent assets and liabilities such as environmental ones, have to be calculated using their fair value. In contrast with the FAS 5, which says that the recognition depends on the criteria of probable and reasonable estimation, FAS 141-R fixes that the recognition at fair value or not depends on the nature of contingency (contractual or non-contractual). If there is a contractual contingency, it has to be estimated at fair value. If there is a non-

contractual contingency and it is more likely to occur than not, it has to be estimated at fair value. If not, and if the fair value's estimation is not possible, the company has not to recognize it (it will have to present it and explain it on the notes).

FIGURE 3. RECOGNITION OF CONTINGENCIES UNDER FAS 141-R

CONTINGENCY'S NATURE	RECOGNITION
CONTRACTUAL	ALL AT FAIR VALUE
NON-CONTRACTUAL	MORE LIKELY TO OCCUR THAN NOT → FAIR VALUE OTHERS → NOT RECOGNIZE (EXPLANATION ON NOTES)

Source: own elaboration.

It has to be mentioned the United states Environmental Protection Agency (EPA). This organization was born in 1970 and its mission was, and it is still being, to “*protect human health and the environment*”, as they exhibit in their web site. This agency, after the government creates a new environmental law, writes regulations to make easier the law's implementation. Basically, EPA tries to help companies to adjust themselves to the environmental laws. In the next chapter it is going to deepen on this organization.

3. Environmental accounting law in the European Union

Nowadays, accounting in EU is controlled by International Accounting Standards Board (IASB). It is a non-profit organization which approves International Financial Reporting Standards (IFRS) to get its objective of comparability in the accounting scheme. It tries to make the laws in every country converge with the international ones.

Some decades ago, the countries in the European Union had very different accounting laws. That fact caused the impossibility to be able to compare companies from different countries, because the information in their reports was not equivalent. So, the IASB (previously International Accounting Standards Committee, IASC) published international laws, which were not, and still are not, obligatory to implement.

Here it is going to be explained the most important international standards related to environmental issues. There are lots of standards talking about environment, but here it is going to focus on the most important ones.

Some standards are focused only in environmental scheme, such as IFRS 6, Exploration for and Evaluation of Mineral Resources; IFRIC 5, Rights to Interests Arising from Decommissioning, Restoration and Environmental Rehabilitation Funds. Other Standards centered their issue in aspects that are related to environmental issues, such as IAS 38, Intangible Assets. It deals with emissions rights, among other things. IAS 37 Provisions, Contingent Liabilities and Contingent Assets. This standard can be easily related to environmental concepts.

To sum up, following the international standards, a company should recognize an intangible asset for example when it has right to emit pollutant (according to the IAS 38); it should reflect a deferred income (liability) when those rights are estimated in an amount less than its fair value (it should reflect only the difference); or, it has to present a provision when the business starts polluting (according to IAS 37).

Bellow it is going to be summarized all the standards that deal with just environmental facts and those which can be linked to environmental matters.

IAS 41: Agriculture. It deals with a specific sector which is closer to environment. *"The objective of IAS 41 is to establish standards of accounting for agricultural activity – the management of the biological transformation of biological assets (living plants and animals) into agricultural produce (harvested product of the entity's biological assets)"*

IFRS 6: Exploration for and Evaluation of Mineral Resources. *"IFRS 6 requires disclosure of information that identifies and explains the amounts recognized in its financial statements arising from the exploration for and evaluation of mineral resources, including: (...)the amounts of assets, liabilities, income and expense and operating and investing cash flows arising from the exploration for and evaluation of mineral resources."*

IFRIC 3: Emission Rights. It is related with the Kyoto Agreement. *"Rights (allowances) are intangible assets that should be recognized in the financial statements in accordance with IAS 38 Intangible Assets. When allowances are issued to a participant by government (or government agency) for less than their fair value, the difference between the amount paid (if any) and their fair value is a government grant that is accounted for in accordance IAS 20 Accounting for Government Grants and Disclosure of Government Assistance. As a participant produces emissions, it recognizes a provision for its obligation to deliver allowances in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets. This provision is normally measured at the market value of the allowances needed to settle it."*

IAS 20: Accounting for Government Grants and Disclosure of Government Assistant. “A government grant is recognised only when there is reasonable assurance that (a) the entity will comply with any conditions attached to the grant and (b) the grant will be received. [IAS 20.7]” It also adds that “A grant relating to assets may be presented in one of two ways: [IAS 20.24] as deferred income, or by deducting the grant from the asset's carrying amount.”

IFRIC 5: Rights to Interests Arising from Decommissioning, Restoration and Environmental Rehabilitation Funds. If a company has a decommission obligation it has to follow “IAS 27 Consolidated and Separate Financial Statements, SIC 12 Consolidation - Special Purpose Entities, IAS 28 Investments in Associates, and IAS 31 Interests in Joint Ventures, to determine whether decommissioning funds should be consolidated, proportionately consolidated or accounted for under the equity method.”. If the fund is not consolidated, the company has to recognize the obligation as a liability and “its rights to receive reimbursement from the fund as a reimbursement under IAS 37.” When the business has a potential obligation, it has to follow IAS 37 and recognize a provision when that obligation is made probable.

IFRS 8: Operating Segments. “IFRS 8 Operating Segments requires particular classes of entities (essentially those with publicly traded securities) to disclose information about their operating segments, products and services, the geographical areas in which they operate, and their major customers.”

IAS 37: Provisions, Contingent Liabilities and Contingent Assets. “Provisions for one-off events (restructuring, environmental clean-up, settlement of a lawsuit) are measured at the most likely amount. [IAS 37.40]”

IAS 8: Accounting Policies, Changes in Accounting Estimates and Errors. “IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors is applied in selecting and applying accounting policies, accounting for changes in estimates and reflecting corrections of prior period errors.” Generally, those changes in accounting policies or correcting errors affect prospective periods. This standard explains how to manage them.

IAS 1: Presentation of Financial Statements. Companies that operate closer to environment, have to present an environmental report.

IFRS 1: First-time Adoption of International Financial Reporting Standards. Environmental assets, liabilities and provisions have to be presented at their fair value

In the European Union, the agency that has a similar role as EPA is the Eco-Management and Audit Scheme (EMAS). This environmental management tool was created by the European Commission in 1993 and it became available for joining it in a voluntary way in 1995, although it was restricted to industrial activities. It was in 1996 when the international environmental management system standard was recognized as a step towards achieving EMAS. In 2001 it was improved in different ways, such as becoming available to all the activity sectors. EMAS' objective is to *"Improve its environmental and financial performance and communicate its environmental achievements to stakeholders and society in general"* as said in their web site. It is a gadget available to all the companies located in EU, so it is voluntary. Those companies could be private, public, big, or small... of any type. As in EPA, this organization is going to be more explained later.

CHAPTER 3 ENVIRONMENTAL AGENCIES IN USA AND EU

As mention before, in this chapter it is going to be explained in deep what organisations about environment are, how they work, which are their most important functions and two examples of environmental reports, in addition to the theoretical information.

1. United States Environmental Protection Agency (EPA)

EPA was formed in 1970 and since then it has been working for achieving a cleaner and healthier environment to American people. As said in the previous chapter its mission is to *"protect human health and the environment"*.

To get its mission, EPA works in different ways. It develops and enforces regulations. When the Congress publishes a law related to the environment, EPA publishes, also, a regulation about that law to make it clearer to the companies and to help them implementing it. It gives grants, too. Approximately half of its budget goes to help environmental projects, studies... It studies environmental issues. EPA has different laboratories throughout the country where they develop researches concerning the environment, including studies to identify environmental problems or to try to get a solution for them. It sponsors partnerships. That means EPA does not work alone. It works with businesses, other organisations and governments to protect the environment. Another important action is to teach people about the environment. EPA has specific web sites for students and educators about environment. In there it is explained the issues related to environment and that it is everybody's responsibility. Also it raises some everyday actions that can help. Finally, EPA also publishes

information about what activities they have carried out and which ones they are carrying out at the moment.

On its web site it is published the strategic plan, the budget it has to do it and the results it is getting. It also shows previous plans, budgets and results. By establishing a plan, developing and managing the budget and publishing and analysing the results, EPA gets done its mission. The Strategic Plan *“identifies the measurable environmental and human health outcomes the public can expect over the next four years and describes how they intend to achieve those results.”* Nowadays, the plan has 5 goals stipulated in its web site:

- Addressing Climate Change and Improving Air Quality.
- Protecting America’s waters.
- Cleaning up Communities and Advancing Sustainable development.
- Ensuring the Safety of Chemicals and Preventing Pollution.
- Protecting Human Health and the Environment by the Enforcing Laws and Assuring Compliance.

EPA’s Agency Financial Report (AFR) about the year is public. In this report it is presented the financial statements, the audited financial statements, it is explained where the budget has been spent on and the results got, among other things. It is not only AFR the only one that is public, three more reports can be downloaded from its web site: Conference Spending Report, that presents information about the conferences and about the expenses spent on this matter; Annual Performance Report (APR), it details the results got and a comparison with the targets established at the beginning of the plan; and Financial and Program Performance Highlights, where EPA presents without details the most important results from the AFR and APR.

EPA presents on its web site a table where the total budget appears. That table shows the previous years, as it can be observed in figure 4.

In addition, it can be consulted the current budget of the fiscal year (October 1, 2015 to September 30, 2016), detailed the increase from the previous year and the destination of each amount as shown in the following figure, figure 5.

FIGURE 4. EPA'S BUDGET

EPA's Budget and Spending

View EPA expenditures on USA.Spending.Gov.

Fiscal Year	Enacted Budget	Workforce
FY 2015	\$8,139,887,000	TBD
FY 2014	\$8,200,000,000	15,408
FY 2013	\$7,901,104,000	15,913
FY 2012	\$8,449,385,000	17,106
FY 2011	\$8,682,117,000	17,359
FY 2010	\$10,297,864,000	17,278
FY 2009	\$7,643,674,000	17,049
FY 2008	\$7,472,324,000	16,916
FY 2007	\$7,725,130,000	17,072
FY 2006	\$7,617,416,000	17,355
FY 2005	\$8,023,483,000	17,495
FY 2004	\$8,365,420,000	17,611
FY 2003	\$8,078,703,000	17,741
FY 2002	\$8,078,813,000	17,590

Source: EPA's web site

FIGURE 5. CURRENT FISCAL YEAR'S BUDGET

Funding level increases for each goal outlined in EPA's Strategic Plan FY 2014–2018

Funding Level Increases Above FY 2015 Enacted Budget	EPA Goals
+ \$120 million	Goal 1: To protect and improve air quality for all Americans and reduce greenhouse gas emissions and develop adaptation strategies to address climate change.
+ \$70 million	Goal 2: To protect and restore America's waters to ensure that drinking water is safe and sustainably managed and that aquatic ecosystems sustain fish, plants, wildlife, and other biota, as well as economic, recreational, and subsistence activities.
+ \$178 million	Goal 3: To clean up communities, advance sustainable development, and protect disproportionately impacted low-income and minority communities from the releases of harmful substances.
+ \$47 million	Goal 4: To ensure the safety of chemicals in our environment, reduce the risk, and prevent pollution at the source.
+ \$66 million	Goal 5: To protect human health and the environment through vigorous and targeted civil and criminal enforcement and use Next Generation Compliance strategies and tools to improve compliance with environmental laws.

Source: EPA's web site

Although EPA manages lots of issues related to environment it has to be noticed that some matters cannot be handled through this organization and companies should go to other federal, tribal, state or local agencies to deal with them.

EPA's topics are various, air, cross-cutting issues (topics that cut across various environmental laws, regulations and programs, such as climate change, children's health...), emergencies, land and cleanup, pesticides, toxic substances, waste and water. To make this explanation deeper, it is going to focus on air topic.

About air topic EPA establishes limits about the quantity of air pollution that companies can produce. Also it makes studies about the level of air pollution around America and it has to review them periodically to examine if they are achieved or not. There is a Clean Air Act (CAA) drawn up by the government which lets EPA to establish limits for that pollution. Federal governments can make another regulations about this issue but they cannot stipulate limits under the EPA's ones.

EPA has not power in the pollution made indoor, but it offers its help for controlling and advising companies to deal with this matter. Inside air topic, EPA deals with lots of issues. This report is going to focus on the *Common air pollution*, specifically Carbon Monoxide, Ozone, Lead, Nitrogen Dioxides, Particle Pollution and Sulfur Dioxide. Here, EPA has not only to establish limits of pollution; moreover it has to detail which areas get that limit and which do not. Under the CAA, EPA is responsible to set standards for the topic said above. Those standards in turn are classified in primary and secondary standards. The primary ones are related to human health's protection. The secondary standards refer to the public welfare's protection. So EPA creates a table, presented below (figure 6), for the six common topics establishing their primary and secondary standards and their implementation.

Focusing on Ozone topic, the pollution is not made throughout a direct emission into the air. It is made combining oxides of nitrogen (NOx) and volatile organic compounds (VOC) with sunlight. The major sources of these emissions are: industrial facilities, electric utilities, motor vehicle emissions, gasoline vapors and chemical solvents. The populations that can be more affected from breathing these compounds are children, old people and people of all ages who have lung diseases. It also affects vegetation and ecosystems.

Referred to regulations, the first one was published in 1997- National Ambient Air Quality Standards for ground-level ozone. After that first regulation, EPA tried to improve that law requiring states to decrease those emissions and achieving the standards settled. Last year, in 2014, EPA put forward a new proposal for decreasing the standards around America for this topic (*EPA's Proposal to Update the Air Quality Standards for Ground-Level Ozone*).

Under the CAA, each state has to develop a plan in which they must present how they are going to achieve the standards established by the EPA. That plan, firstly, has to be approved by the citizens and after that, by EPA. For developing those plans, EPA helps state, federal or local environment agencies with a tool kit as a guide to form that plan.

FIGURE 6. COMMON AIR POLLUTION'S PRIMARY AND SECONDARY STANDARDS

Pollutant [final rule cite]	Primary/ Secondary	Averaging Time	Level	Form	
Carbon Monoxide [76 FR 54294, Aug 31, 2011]	primary	8-hour	9 ppm	Not to be exceeded more than once per year	
		1-hour	35 ppm		
Lead [73 FR 66964, Nov 12, 2008]	primary and secondary	Rolling 3 month average	0.15 µg/m ³ (1)	Not to be exceeded	
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]	primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	primary and secondary	Annual	53 ppb (2)	Annual Mean	
Ozone [73 FR 16436, Mar 27, 2008]	primary and secondary	8-hour	0.075 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years	
Particle Pollution Dec 14, 2012	PM _{2.5}	primary	12 µg/m ³	annual mean, averaged over 3 years	
		secondary	15 µg/m ³	annual mean, averaged over 3 years	
	PM ₁₀	primary and secondary	24-hour	35 µg/m ³	98th percentile, averaged over 3 years
		primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]	primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	

as of October 2011

Source: EPA's web site.

2. European Union Eco-Management and Audit Scheme (EMAS)

EMAS is a management tool formed by the European Union for companies and organizations to “*evaluate, report and improve their environmental performance*”. The key elements of EMAS are: performance, its prior objective is to improve the environmental performance of organizations; credibility, this includes the organizations' procedures to improve their environmental performances and the information presented by them to the internal and external users; and transparency, publishing information about itself and the environmental reports from the organizations. Also EMAS publishes studies related to environment issues. An important difference between EPA is that in EMAS companies and other organizations can join in it to be helped about environmental issues. By contrast, EPA helps companies and other organizations publishing regulations to make clearer environmental laws and it works with agencies around the United States which are the ones that finally help companies and organizations.

As it is said in its web site, the companies and other organizations registered in EMAS are favored with the benefits that follow:

- Enhanced environmental and financial performance.
- Enhanced risk and opportunity management.
- Enhanced credibility, transparency and reputation.
- Enhanced employee empowerment and motivation.

To implement EMAS procedures, the companies and organizations must follow some steps. Those are:

- They have to conduct an environmental review taking into account all the environmental aspects related to the company's activities.
- They have to adopt an environmental policy and commit to follow it and all the applicable environmental regulation.
- They need to establish an environmental management system effectively, according to the two steps mentioned above.
- After that, they have to incur in an environmental audit.
- They have to publish an environmental report with all the information related to this issue.
- Finally, the EMAS' body has to verify all the steps mentioned above and approve them. Only this way, the company or organization is registered into EMAS' documents and is able to use the EMAS' logo.



Source: EMAS' web site.

Here it can be found another difference with EPA. EMAS' body verifies the environmental reports of the companies and organizations joint to it and, if it is all

correct, EMAS gives authorisation to put the logo on the report, as a sign of credibility and reliability.

The way throughout EMAS helps monetarily companies and organizations are via funding or via grants. Referred to funding, the European Union has a budget destined to two projects: *LIFE and The Eco-Innovation and Competitiveness and Innovation Framework Program*.

In contrast with the EPA, EMA is not publishing regulations about laws promulgated by the corresponding authority. EMA is a tool that companies, which are inscribed in it, use to improve in the environmental aspect and to get its benefits mention above. So EMA has no regulations published but it is supporting with other organizations and the European Union Commission programs related to environment.

As EPA, EMAS policies are referred to diverse topics: action programs, air, chemicals, circular economy, environmental assessment, green public procurement, industry, international issues, land, marine and coasts, nature and biodiversity, noise, soil, sustainable development, urban environment, waste and water.

Focused on the air topic, the European Commission has been working on it since 1970 to improve the air quality. In 2013 the EU made a revision of all the regulations that have been published about air issue and it adopted a *Clean Air Policy Package* with new objectives, new standards of air pollution for the six main pollutants and a new proposal to reduce emissions of the medium-sized combustion installations.

The new Clean Air Policy Package has three important components, as published in EMAS' web site:

- A new Clean Air Programme for Europe: *“with measures to ensure that existing targets are met in the short term, and new air quality objectives for the period up to 2030. The package also includes support measures to help cut air pollution, with a focus on improving air quality in cities, supporting research and innovation, and promoting international cooperation”*
- A revised National Emission Ceilings Directive: *“with stricter national emission ceilings for the six main pollutants”* Those are: Ozone (O₃), Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), Ammonia (NH₃), Volatile organic compounds (VOC) and Methane (CH₄).
- A proposal for a new Directive to reduce pollution from medium-sized combustion installations: *“such as energy plants for street blocks or large buildings, and small industry installations”*

As in EPA, in EMAS it can be found a specific topic inside the air pollution about Ozone. An innovation in this section is that the European Commission, nowadays, is publishing annual reports analyzing the summer ozone situation across Europe.

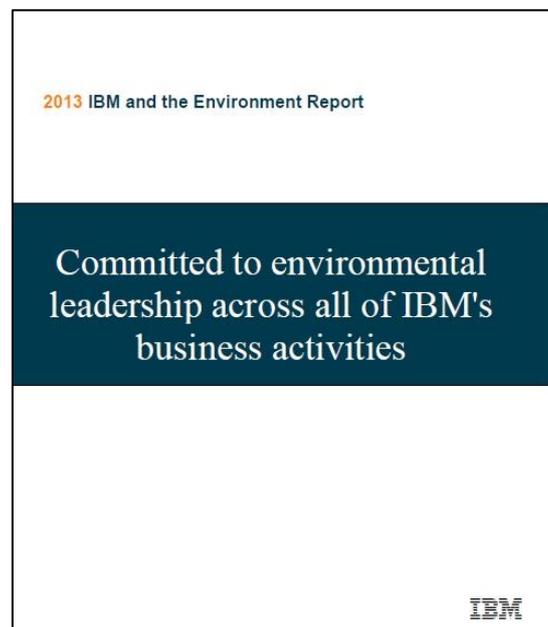
3. Environmental reports: Kärsh Group (UE) – IBM (USA)

First of all, an important difference said above, it is the presence of the EMAS logo on the cover of the environmental report of Kärsh Company (figure 8).

Other important difference is that Kärsh's report talks about EMAS' policies and how this company fits with them. However, on IBM's report EPA has no chapter (figure 9 and 10). This does not mean that it is not mention at all. Inside the report, EPA is mention related to some matters which IBM fits (in figure 11 and 12 it can be shown EPA's mention in two different policies).

In the Kärsh's report, there is a page where EMA is explained and it is shown its validation of that report (figure 13).

FIGURE 8. ENVIRONMENTAL REPORTS' COVERS



Source: Environmental reports from Kärsh and IBM

FIGURE 9. TABLE OF CONTENTS OF KÄRSH'S ENVIRONMENTAL REPORT

CONTENT	
Letter from our CEO	3
About EMAS	4
Environmental year summary	5
Kährs - History	6
Kährs' responsibility	7
Kährs environmental work	8
Environmental aspects	9
Significant environmental aspects	10
Ecological balance 2013 & targets	11
Water	11
Material efficiency	12
Responsible forestry	14
Waste & Recycling	16
Transport	17
Energy	18
Noise	20
Emissions	21
Risks	22
Internal and external revisions	22
Local conditions Nybro, Blomstermåla	23
About Kährs Group	24
Certificates	27
Certifications & registrations	28
Definitions	30
Contact	31

Source: Kärsh's environmental report.

FIGURE 10. NO PRESENCE OF EPA IN THE TABLE OF CONTENTS OF IBM'S ENVIRONMENTAL REPORT.

TABLE OF CONTENTS:			
A Commitment to Environmental Leadership	3	Process Stewardship	43
		Environmentally Preferable Substances and Materials	43
		Nanotechnology	45
Global Governance and Management System	4	Pollution Prevention	47
Global Environmental Management System	4	Hazardous Waste	47
Stakeholder Engagement	6	Nonhazardous Waste	49
Voluntary Partnerships and Initiatives	7	Management of Chemical Releases	51
Environmental Investment and Return	9		
Energy Conservation & Climate Protection	12	Water Conservation	54
Climate Change	12		
A Six-Part Strategy	12	Solutions for Environmental Sustainability	56
Conserving Energy	13		
Renewable Energy	20	Environmental Requirements in the Supply Chain	66
Operational CO ₂ Emissions Management	23	Remediation	71
PFC Emissions Management	24		
Overall CO ₂ Emissions Inventory	24	Audits and Compliance	72
Transportation and Logistics Initiatives	26	Accidental Releases	72
Energy and Climate Protection in the Supply Chain	27	Fines and Penalties	73
Product Stewardship	29	Awards and Recognition	74
Framework	29		
Process Efficiency for Dynamic Requirements	29	Summary of IBM's Environmental Performance	78
Product Stewardship Goals and Performance	31		
Product Energy Efficiency	33	IBM Environmental Policy	81
Product Recycling and Reuse	38		
Product Packaging	39		
Product Safety	42		

Source: IBM's environmental report

FIGURE 11. EPA'S MENTION IN IBM'S ENVIRONMENTAL REPORT RELATED TO TRANSPORTATION AND LOGISTICS INITIATIVES

Efficiency of logistics

IBM is reducing the CO₂ emissions associated with transporting our products through the efficient design of our packaging, working with suppliers on their packaging designs and optimizing logistics. IBM has been an active participant of the US EPA's SmartWay Transport Partnership since 2006. SmartWay is a voluntary initiative to improve fuel efficiency and reduce GHG emissions associated with logistics operations.

Source: IBM's environmental report

FIGURE 12. EPA'S MENTION IN IBM'S ENVIRONMENTAL REPORT RELATED TO PRODUCT ENERGY EFFICIENCY

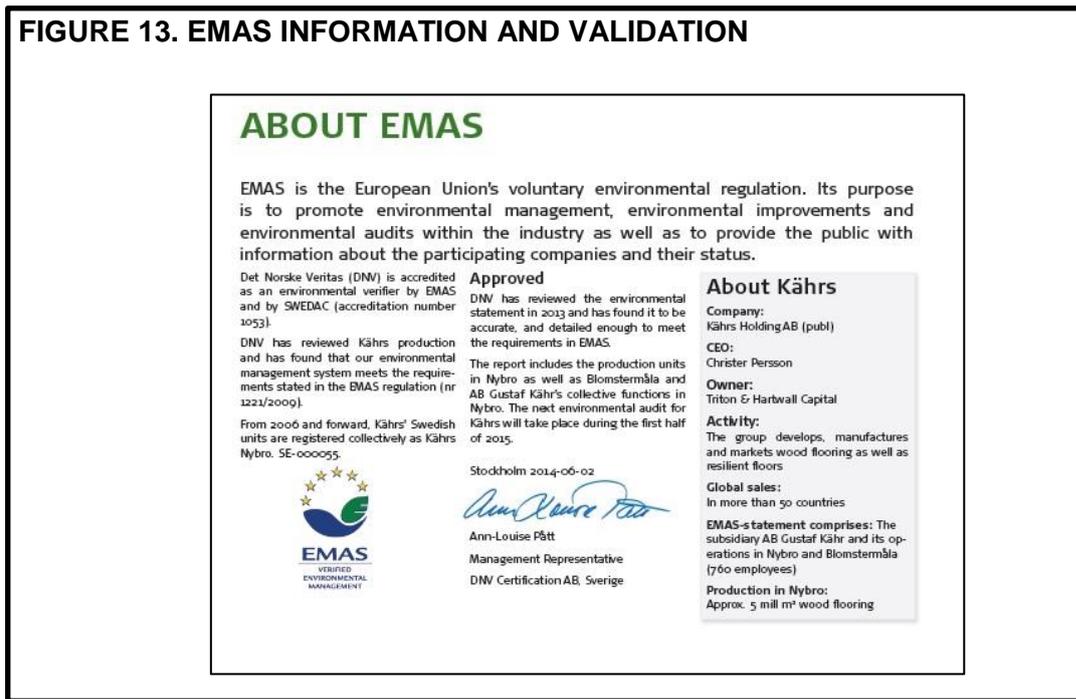
Product Energy Efficiency

Product energy efficiency has long been one of IBM's environmental and climate protection objectives. It was formalized as one of the company's corporate objectives when IBM's Product Stewardship program was established in 1991. We have initiated and invested in innovations and integrated solutions through collaboration between IBM Research and our product development teams. These teams have combined hardware and software innovations to improve the energy efficiency of IT equipment and data centers.

IBM also actively assists in the development of external product energy efficiency standards. As we did in 1992 when we helped to develop and were a charter member of the US Environmental Protection Agency (EPA) ENERGY STAR Computer program, IBM is currently participating in the development of the ENERGY STAR specifications for server and storage products. We are providing technical assistance regarding the assessment of the new Server Efficiency Rating Tool (SERT) metrics data, working both inside IBM and in conjunction with industry groups to evaluate the SERT results and assist EPA and various regulatory bodies outside the United States in developing server energy efficiency criteria based on the SERT metric. Similar work is planned to assess the Storage Networking Industry Association Emerald results for storage products.

Source: IBM's environmental report.

FIGURE 13. EMAS INFORMATION AND VALIDATION



Source: Kärsh's environmental report

Although these differences, the reports, more or less, have the same information: What was the environmental policy settled for that year? Did the company follow it and did it get benefits from it? And how is that environmental policy going to change for the next year (which targets the company wants to achieve)? In addition, companies add information about different programs they had been working on and some awards got related to environment facts. All those concepts can be shown in the figure 14 of the table of contents, correlated each one with the same colour.

It can be noticed that, reading the environmental report from IBM, that company is attached at the same time in an environmental programme from EPA and another from EMAS (figure 15), so they are not exclusive. A company can be joining in both EPA and EMAS.

FIGURE 14. CORRELATION OF ENVIRONMENTAL MATTERS IN THE TABLE OF CONTENTS OF IBM'S AND KÄRSH'S ENVIRONMENTAL REPORTS

CONTENT	
Letter from our CEO	3
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Product Energy Efficiency	33	IBM Environmental Policy	81
Product Recycling and Reuse	38		
Product Packaging	39		
Product Safety	42		

Source: IBM's and Kährs's environmental reports.

FIGURE 15. IBM'S ENVIRONMENTAL PROGRAMS

Voluntary Partnerships and Initiatives

IBM is strongly committed to participation in voluntary programs and we have founded or joined many voluntary initiatives and partnerships with governmental and nongovernmental organizations (NGOs) over the years.

Some current governmental examples include the United States Environmental Protection Agency's (EPA) ENERGY STAR[®], SmartWay[®] and WasteWise programs and the European Community's EU ENERGY STAR[®] program and EU code of conduct for energy-efficient data centers.

Examples of partnerships with environmental NGOs (eNGOs) include membership in the Center for Climate and Energy Solutions (C2ES), Best Workplaces for Commuters, and the Wildlife Habitat Council. We also work with and support organizations such as The Conservation Fund, the Environmental Law Institute, the World Environment Center (WEC) and the WEC's Innovations in Environmental Sustainability Council.

Source: IBM's environmental report.

CHAPTER 4 ENVIRONMENTAL AUDITS

1. Definition, process and types

Environmental audit is defined by the International Chambers of Commerce (ICC) as “*management tool comprising a systematic, documented periodic and objective evaluation of how well environmental organization, management and equipment are performing, with the aim of helping safeguard the environment by:*

- (i) *Facilitating management control of environmental practices and*
- (ii) *Assessing compliance with company policies which would include meeting regulatory requirements.”*

The main objective of environmental audit is to control that the environmental system applied in the company is working right, to check that the company is not out of the environmental laws and to make sure that the human and environmental risks are decreasing.

The depth of an audit depends on the information that management wants to know about the area object of auditing. In environmental audits, typically, four areas are tested: environmental (air emissions, water discharges...), safety (accident reporting, emergency response...), occupational health (personal protective equipment, first aid...), and product safety (product safety program, materials safety data...). As it is said before it could be possible to make audits with different target areas.

An audit process can be separated into three steps: pre-audit, onsite audit, and post audit. Also, in each of them there are some basic points that have to be followed.

- Pre audit step: it includes all the administrative issues needed to plan the audition, such as selecting the personnel who will form the audition team (could be totally external or a mix between internal and external people), preparing the protocol that is going to be used and getting general data of the company area that is going to be the object of the audit.
- Onsite audit step: understanding the internal controls, those which are in place or those which are going to be in place. Audit team collects this information by observation, making interviews to the staff and using detailed questionnaires. Evaluate the strengths and weaknesses of internal controls, this information will provide the basics for continuing the audit process. Meeting audit evidence, through observation, inquiry and test to verify if the controls implemented at the beginning are being right or not. Recording audit findings, all the information obtained from the audit is recorded, typically in the audit protocol or in working papers. If a lack is found, it is recorded as “audit finding”. Lastly, evaluation of the audit finding and reporting, generally done at the end of the visit and before the audit team leaves they should leave a report with all the information recorded.
- Post-audit step: make formal the audit findings reported data, to send it to the company according with its requirements. Make an action plan, in accordance with the information found. Some companies can ask to the audit team to elaborate a plan with recommendations to cover those lacks found during the audit process; others will ask only for the information. Depending on these demands, the action plan will be more or less extensive.

Environmental audits can be divided in different types depending on the companies' requirement. But there is a lack of congruence about the name given to those different types. According to Humphrey and Hadley (2000), the environmental audits could be corporate or product audit. Inside corporate type we can find compliance, liability or single-issue types. An example of the object audited for each one could be internal standards, insurance and transport, respectively. An example for product audit type could be the lifecycle assessment.

The aim of a compliance audit is to determine the company's congruence with the actual laws or standards. Moreover, inside this type it can be found a policycompliance

audit. In contrast with the first and global one, it focuses on determining the congruence with the internal policy of the company. A liability audit focuses on the pre-buy/sell step of an asset with the objective of finding possible liabilities. A single issue audit can be called also as minimisation audit, and it has its focal point on a determined issue that the enterprise asks for a deep investigation, such as waste or water.

It has to be mention that there is an Environmental Management System Audit which takes care about all related to internal audits.

2. Environmental audits in the United States

As for the general issues related to environmental accounting, EPA (Environmental Protection Agency) has also functions about environmental audits. As it is said in the previous chapter, one of the most important functions of EPA is compliance monitoring. Through that, the agency controls if the companies obey the environmental laws and other legislation. Here, there is an area about environmental audits. EPA's policy called "Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations" supplies incentives to those enterprises that make themselves the discovery and disclosure of that areas that are not under the environmental regulation and they correct themselves those problems and implement a prevention plan to avoid that it will happen again. Bound up with this, EPA also publishes different audit protocols for each federal state and it works as guidance for the companies to be able to make themselves all described above to get the incentives.

Furthermore, it is available another plan established by EPA for new companies that want to make a "clean star", as mentioned in EPA's web site. It is called "EPA's Interim Approach to Applying the Audit Policy to New Owners".

Finally, since 2013, it is available an online site where companies can affront online the first step for the audit policy of disclosure of non-compliance regulations.

It is important also to notice that this year EPA has launched a proposal for modernize and make more technological the Audit Policy, as well as the Small Business Compliance Policy. That proposal is called *eDisclosure* and as it appears on EPA's web site, it is *"a new centralized, web-based system for more efficiently receiving and processing violations disclosed to EPA under these policies."*

3. Environmental audits in the European Union

As it has been explained in the previous chapter, for registering on EMAS companies have to follow four steps and the third of them is to carry out an internal environmental audit. The main objective of this step is to evaluate the management system.

An internal environmental audit can be performed by a company's employee who has enough abilities about environmental legislation and EMS standards, as well as independence from the area object of the audit.

As for the rest of issues related to environment, EMAS has not a specific regulation or other type of legislation about environmental audits. Instead of that, EMAS' body is responsible to verify the internal environmental audits that companies have to carry out and write down in a report for getting the registration in EMAS.

4. INTOSAI, Working Group on Environment Auditing (WGEA)

The Working Group on Environment Auditing (WGEA) is a volunteer organisation under the International Organisation of Supreme Audit Institutions (INTOSAI). Its objective as exposed in its web site is to *“improve the use of audit mandate and audit instruments in the field of environmental protection policies, by both members of the Working Group and non-member Supreme Audit Institutions (SAIs)”*.

INTOSAI is a professional organization formed by supreme audit institutions (SAI) or specialized agencies of the countries which are members of the United Nations. Although not all SAIs belong to a regional distribution the majority of the members can be distinct depending on the area where they are established: Latin American and Caribbean (OLACEFS), Caribbean (CAROSAI), Europe (EUROSAI), Africa (AFROSAI), Arabic countries (ARABOSAI), Asia (ASOSAI) and the South Pacific (PASAI). So, since 2000, WGEA has a Regional Working Group on Environmental Auditing (RWGEA) in each of the seven regions distinguished above.

WGEA has focused its attention on jointing auditing through SAIs of cross border environmental matters and policies and on the audit of international environmental accords.

To get its objective, WGEA acts throughout:

- Assisting SAIs to get a better knowledge about specific items that environmental audits have.

- Making easier the transfer of information about environmental auditing between SAIs.
- Publishing guidance and other reports for helping SAIs.

Finally, it has to bring to light that on the official web page of WGEA it is possible to consult previous environmental audits from the countries members and also it has an area called Learning Centre where the public can find explanations about environmental audit issues and information about courses available around the seven regional areas.

CONCLUSIONS

Throughout this project it is highlighted that there is not still congruence about some environmental accounting concepts and about environmental laws around the world.

There are different definitions for environmental accounting, but in depth all are related to the same: the environmental damage. Also, there are no strength environmental laws and this fact causes that companies face this issue through different ways.

Related to the specific environmental law in the United States and in the European Union the most important conclusion that this project has shown up is that although in EU there are more specific laws about environment, at the end both legislations treat the most important environmental accounting concepts in the same way: assets, liabilities, and contingencies related to environmental matters have to be estimated at the fair value (with a particular criteria and some exceptions).

With this project it has pointed out that in both USA and EU there are organisms that specifically work for getting a better environment. It has been noticed that in the United States that organism (EPA) is a formal organization which works for, among other objectives, enforcing the environmental regulation. This organization publishes regulation related to environmental legislation that governments publish to clarify its implementation for the companies. On the other hand, the organism in the European Union (EMAS) is a management tool, not an organization. Companies can join in it to get benefits from EMAS' help about environmental accounting. So this management tool cannot publish regulations or other legislation. EMAS supports the environmental laws that the European Commission publishes and offers its knowledge and experience for helping companies that are inscribed in it.

As it is said at the beginning of the conclusions, there is no congruence in some environmental aspects and one of them are the different types of environmental audits

that exist. There is congruence about the function of environmental audits: control that the environmental management system applied by the company is working well and it adjusts to the applicable environmental legislation. Here, the differences between EPA and EMAS are the same, the first one has an own policy related to give incentive to those enterprises which can make themselves the early steps of the audit; and on the other hand EMAS's function in this subject is just to verify that the internal audit of the companies that want to join it is correct.

Personally, throughout this project I have improved my knowledge about environmental accounting. Leaving aside the accounting principle and laws that more or less we all were learned during the degree, I have been impressed by, among other things, the organisms strictly environmental (EPA and EMAS). I am satisfied that nowadays this subject has become more and more popular among the public and among enterprises but I am concerned about the minimum amount of enterprises that take care about environment in relation to the total amount of companies that exist.

Finally I want to conclude my Bachelor's Degree Final Project adding this quotation:

“Our environmental problems originate in the hubris of imagining ourselves as the central nervous system or the brain of nature. We're not the brain, we are a cancer on nature.”

- Dave foreman

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