# Incorporating sustainability aspects in structured trade and commodity finance

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## Summary

While in recent years the aspect of operation ecology is already widely introduced into the daily business of many banks, the issue of considering environmental aspects in external business relations as a part of sustainable business practice is a rather new and more difficult task. While the incorporation of environmental issues in credit management and investment funds becomes practice in some European and U.S. banks, guidelines for the consideration of sustainability aspects in structured trade and commodity finance are rather more rare. This paper is an attempt to evaluate the existing opportunities to include environmental concerns into these two business sectors and to analyse which environmental criteria might be practicable. Above all the study is based on the consideration of financing trade with unsustainable or environmentally harmful substances. Concerning the sustainability aspects of these substances we revealed four criteria which will render substances as

unsustainable. These are substances that are not degradable or only degradable over a long period of time, substances that are harmful to the environment and human health, and those that appear on regulatory or recommended negative lists. To give practical advice for banks, we identified products containing problematic substances and production processes causing problematic emissions. As a result we derived substance and product lists that may be used to help the organisational philosophy towards sustainability. The implementation of these lists would be a good starting point for financial institutions entering into a new area of sustainable business.

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## Introduction

Banks, which appeared to be providers of 'clean' services and were not the focus of national environmental policies, are increasingly assuming environmental responsibility. This is clearly illustrated by the increasing attractiveness of the statement of commitment initiated by UNEP concerning the environmental management of banks (UNEP, 1992).

In this statement the signatories recognised that environmental protection in a context of sustainable development was the collective responsibility of all people and therefore one of the most urgent tasks of business, including the financial sector. Sustainable development was a decisive corporate commitment and an important part of corporate socio-political responsibility. Finally, a number of the signatory institutions set out how they intended to implement the principles of sustainable and environmentally sound action in all areas of their corporate activity.

In recent years, aspects of environmental protection have become an element of the management decision processes in the financial sector, both for the use of internal resources and for external business relations. It is becoming increasingly clear that commitment to the environment also makes economic sense. Banks are influential economic actors and, thus, potential partners for environmental politics. This importance is likely to grow.

While the aspect of operating ecology is being widely introduced into the daily work of many banks and insurance companies, the issue of considering environmental aspects in external business relations is a rather new and more difficult task. The main efforts in this area concentrate on assessment of credit risks and on the introduction of 'green investment services'.

Nevertheless, so-called product-ecology must be thoroughly introduced into all external business relations of banks. Very few investment companies are aware of this problem and have published environmental guidelines for other business aspects like structured trade and commodity finance. In an attempt to evaluate the existing opportunities to include environmental concerns into these two business sectors, we will analyse which environmental criteria might be applicable.

Based on the assumption that a main feature of environmental problems can be found in the amount and characteristics of substances (whether they be traded as chemicals, included in other products or used in industrial processes), this paper has as a main emphasis the aspect of problematic substances. Therefore, we constructed a graded watchlist of problematic substances, a list of consumer and industrial products containing these substances and an overview on the most problematic industry sectors dealing with these substances in their production processes.

A main feature of environmental problems is their complexity and their interconnection with other problems, and so possible approaches to deal with and attempts to solve them must be seen in a broad context of technical, social, political, ecological and economic aspects. With respect to this, the paper covers the specific aspect of problematic substances in the context of regulatory measures, industrial production and trade.

**Sustainability of substances and products**

Although sustainability has to be understood in its social, economical and ecological context (Weber, 1997) in this paper we especially stress the environmental part of sustainability, whilst also recognising that global trade has a significant influence on social and economic sustainability too. Based on the three sustainability management rules

of Daly & Cobb (1989) products should be produced by an ideal process that

- does not include any toxic substances at all. No substances will leave the production plant; and
- gets its energy input only from renewable energy resources which may be considered sustainable.

From this we call substances as not sustainable if they

1. are not degradable or only degradable in long periods of time;
2. are harmful to the environment;
3. are harmful to human health;
4. appear on regulatory or recommended negative lists (these lists basically rely on criteria no. 1 - 3).

## Concepts for a sustainable manufacturing and trading of goods

A compilation of current environmental initiatives in the area of manufacturing and trading has shown that many different proposals of handling harmful substances are being developed in very different fields of industrial activities. There are end-of-pipe solutions, process- and product-integrated solutions in different industrial sectors (Faber, Manstetten, & Proops, 1996) including the chemical industry. But banks and financing organisations such as the World Bank (1998), the Kreditanstalt für Wiederaufbau (1998), the European Bank for Reconstruction and Development (1996) or the Export-Import Bank of the United States (1998) have developed guidelines to incorporate sustainability concerns into their financing business. In both sectors solutions are coming from strict regulatory measures such as national and international regulations and voluntary labels without any regulatory consequences.

The issue of focussing on processes and production methods (PPMs) is accepted widely and this insight has led to intensive discussions in

politics, industry and in the financial sector. This fact might be very useful for financial institutions: where information, time or technical expertise is lacking, financial institutions will be able to promote existing environmental initiatives instead of implementing new procedures. Banks might assess the environmental performance of a certain company or industrial sector by using a positive list: by checking whether the partner is using industry specific best available technology or not, financial institutions may base their decision on industry specific best standards. This approach also becomes realistic when analysing the existing environmental guidelines of financial institutions. In this field, environmental procedures on processes and production methods are very scarce. Where such environmental procedures are established, they mainly focus on industry specific standards instead of working on a negative list principle.

## Chemicals

To provide a deeper view on the impacts of chemicals we give some information both on the scientific background of the assessment and the classification of chemicals as well as on the implementation of scientific knowledge by the means of negative and recommendations lists.

The growth of world trade in chemicals has led to increasing concerns about the risk of producing and using hazardous chemicals. These concerns have found their application in a growing amount of regulatory efforts. Many of the traded chemicals have or are expected to have harmful properties. Official agencies try to face this problem by promoting the assessment of additional chemicals. On the other hand, several regulations already focus on the manufacturing and use of certain problematic substances.

A compilation of existing negative lists of chemicals has led to the recognition that past regulatory efforts have mainly included chemicals with more or less direct adverse effects on humans. These

approaches focus on chemical properties like persistence and bioaccumulation, which can be regarded as indirect hazards to human and environmental health.

Based on these insights a grouping procedure focusing on a regulatory approach has shown that chemicals of the current negative lists form three groups:

1. substances that are already subject to stringent regulations (e.g. bans, phase-outs or severe restrictions);
2. substances that are subject to less stringent regulations (e.g. emission reduction) or that are expected to be subject to regulations on a short-term basis;
3. substances that are expected to be regulated on a long-term-basis.

These groups vary in their impact on the environment and sustainability. While Group 1 includes chemicals which provide mainly human health hazards, Group 2 basically comprises substances that are non-degradable and therefore provide an indirect and long-term hazard to both humans and the environment. Group 3 includes chemicals that could be expected to have any harmful impact on humans or environment.

In order to give some practical advice to financial institutions on how to avoid the risk of these problematic substances, an assignment of these substances to products and industrial processes is necessary. This assignment is done in the next section.

**The product and process approach**

This approach consists of two steps: first products potentially containing problematic substances have been identified by collecting information from different lists and from public available databases. As a second step, we linked those substances with processing methods by combining them with industry specific pollution releases.

We will demonstrate this approach with the example of the organic chemicals sector, which is ranked as one of the industries presenting high environmental risk (Heminway, 1998).

## Products

Products potentially containing problematic substances were extracted using the Industry Sector Notebook of U.S. EPA (Heminway, 1998). If products, which are shown in the following list occur in any kind of trade regarding the *cyclic organic chemicals sector*, financing institutes should have a closer look of financing this trade. Naturally for other sectors different lists exist.

1. Derivatives of benzene, toluene, naphtalene, anthracene, pyridene, carbazole, and other cyclic chemical products
2. Synthetic organic dyes
3. Synthetic organic pigments
4. Cyclic (coal or tar) crudes, such as light oils and light oil products; coal tar acids; and products of medium and heavy oil such as creosote oil; naphtalene, anthracene and their high homologues.

Out of these substances lists we created a list of problematic products (Table I). If any of these products is subject to structured trade and commodity finance, the financing institute should have a closer look at the business and analyse every risk that could arise out of this business. This process does not imply that the institution should avoid the financing of any trade with these products, but should have a closer look at regulations in different countries and risks caused by these products.

**Table I . Problematic products identified by the compiled substances in the study**

| Product/Product Group | Product/Product Group |
|---|---|
| Anti-corrosion agents | Impregnated wood/wood preservative |
| Antifouling agents (marine paint) | Impregnation of textiles |
| Antioxidants | Insulation foam |
| Batteries | Liquid or gaseous heat-transfer media |
| Colorants & pigments | Lubricating coolants/oils/greases |
| Conductive agents | Misc. building insulation material |
| Cosmetics | Misc. cleaning and sanitation products |
| Degreasing agents | Paint and varnish |
| Deodorants/air fresheners | Plastic |
| Detergents and cleansing agents | Printing ink |
| Diluents and solvents | Process regulators |
| Dry/plasma etchers (semiconductors) | Reducing/oxidizing agents |
| Electrical insulation | Refrigerants |
| Fire retardants/protectors/extinguishers | Sealants/performance sealants |
| Glue | Synthetic resin and rubber adhesives |
| Hydraulic fluids | |

## Processes

The organic chemicals industry produces emissions of chemicals to all media. The types of pollutants which a single facility releases, depend on the feedstock, processes, equipment in use, and maintenance practices. Because of a large variety between single facilities it is recommended that a closer look at possible environmental measures, e.g. cleaner technologies is taken.

Chemicals such as hydrocarbons may be released to the atmosphere from storage tank leakage, vents and loading operations. Very often as much as 50% of the losses to air may occur in transport and storage, rather than in processing. Fugitive emissions (volatile organic compound) can be scattered throughout the plant. Thus every step of the production process must be analysed to guarantee a minimum environmental impact of the production process. To reach this, sectoral guidelines like Responsible Care Guidelines of the chemistry sector (Munn, 1998) can be used.

**Lists of substances**

As a result of the analyses we produced three lists of substances, which can be used by banks to check the environmental risk of structured trade and commodity finance. These lists can be used according to the environmental goal setting of the particular bank.

**List 1: Substances subject to stringent regulations**

This list includes chemicals banned or severely restricted in the European Union, pesticides banned in the U.S., substances subject to the PIC-procedure and persistent organic pollutants (FAO/UNEP), and ozone depleting substances (Montreal Protocol). The substances are either prohibited or regulated.

The implementation of List 1 in financial projects covers a small part of all chemicals. But these chemicals do have a very high direct impact on both human health and the environment. However the consideration of this list does only support existing regulatory efforts. Using this list a bank can control its liability, but there will be no additional positive effects on the environment or on sustainable development.

**List 2: Substances subject to less stringent or forthcoming regulations**

This list consists of basically a recommendation lists of general purpose. It includes chemicals from the four negative lists Greenhouse Gases (IPCC), persistent bioaccumulators (U.S. EPA), bioaccumulative chemicals of concern (U.S. EPA), and Great Lakes Binational Strategy (U.S. EPA/Environment Canada).

The greenhouse gases are already included in international agreements and therefore subject to emission reduction targets. For the bioaccumulative chemicals frameworks for further actions to reduce these substances will be built in the near future.

Nearly all of the chemicals are targeted as being harmful to the environment and not primarily on human health. Thus the characteristics of this list might be a reflection of a growing understanding of sustainability. The loading of the environment with harmful substances that are not degradable in a very long time period contradicts fundamentally the intergenerational principle of sustainability. An implementation of this list covers a more strict consideration of environmental concerns in terms of sustainability. By implementing List 2 in their structured trade and commodity finance, banks will promote a sustainability approach, which might be regarded as an innovative way of introducing sustainability aspects into financial operations. This might reduce two kinds of risk financial risk for the banks and environmental risk.

**List 3: Substances expected to be regulated in the near future**

This list gives a detailed survey for financial institutions of the substances that are expected to be regulated on a long-term basis. It bases on recommendations lists of mainly general purpose. These lists are the *list of undesirable substances* of the Danish Environmental Protection Agency and *substances dangerous for the*

*environment* by the Nordic Council of Ministers. The list should serve as a signal and guide to companies or banks about critical chemical substances, which could be dangerous for mankind and environment.

The implementation of this group by financial institutions represents an approach that goes beyond any normative regulations. It can be regarded as a precautionary approach as some of the included chemicals are only expected to be harmful.

## Conclusions and discussion

In this paper we demonstrated how environmental concerns can be incorporated in structured trade and commodity finance. However the inventories we suggest are only a beginning. Using the lists, banks will need to update them regarding new chemicals and new regulations.

As an approach for an implementation in the day-to-day business we would prefer a combined one. Banks should examine on both substances and processes. To guarantee the practical application of the lists they have to be implemented via a computer based database, which can be used by the bank officers. In addition these officers will need a minimum training to carry out a first check of the relevance of environmental risks in special businesses.

It is also necessary to test the relevance of the lists for the bank. By looking at former financing projects, banks have to find out if they could have lowered their financial risk by using such lists of problematic substances.

Regarding sustainability we have to stress that these lists of problematic substances have to be supplemented by lists regarding the social part of sustainability. In different sectors these social criteria such as the banning of child labour, human conditions at the

workplace and fair pay have to be included. Lists including these considerations of sustainability will be a further step for financial institutes to integrate sustainability into their business.

After all, the implementation of substances and product aspects into their environmental concerns is a very progressive effort for financial institutions since such actions are very rare at present. Therefore, the consideration of the recommendation lists on substances, products and production processes would be a good starting-point to address sustainability concerns in financial institutions.

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