CARBON FOOTPRINTING OF FINANCED EMISSIONS, EXISTING METHODOLOGIES, A REVIEW & RECOMMENDATIONS

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EXECUTIVE SUMMARY

In the last years several financial institutes, sometimes in corporation with NGO's, have developed methodologies to estimate the carbon footprint of financial products and services. Despite their differences in point of departure and objectives, both NGO's and the involved financial institutes are increasingly convinced of the importance of accounting for the carbon emissions of financial products. NGO's with the aim to determine the climate impact and to rank institutes, while the financial institutes use it in their (climate related) risk assessment.

To facilitate the discussion between NGO's and financial institutes Milieudefensie/Friends of the Earth Netherlands has asked the BECO to provide a quick review of methodologies to determine financed emissions. This study, executed in 2009, provides an overview and comparison of existing methodologies and their characteristics. The content is based upon public available reports[1].

The table included in this paragraph summarizes the reviewed methodologies[2]. Main observations are:

- Since accounting for financed emissions is a relatively new activity, the methodologies used are all still in their infancy. It is expected that further development will take place in the near future.
- Due to the nature, complexity of and differences between the financial products, no standard, one size fits all guidance is available (yet) on how to quantify financed emissions.
- Which methodology is used, highly depends on the interests and objectives of the organization (client, stakeholders, etc). This results in methodologies that are used for: (1) *comparison and ranking* of banks, funds and financial products, (2) *transparency on banks investments* and information for individuals, (3) *climate impact assessment* and (4) *risks assessments*. For example, Trucost is making a comparison between investment funds, Utopies assesses for Caisse d'Épargne preliminary the climate impact of saving and loan products in order to inform their clients, while the Rabobank (Ecofys) is determining the climate risk exposure of their credit loan book.

[1] *The involved parties are not interviewed or in any other way approached in order to determine details on the methodologies.*

[2] *This study includes seven different methodologies. It's likely that there are other methodologies, but these were not familiar to the researchers at the time of writing the report (2009).*

- The reviewed methodologies vary greatly with respect to their purpose, included scopes (e.g. products, type of emissions included), the boundaries set and the materiality rules. Profundo, Platform, CenSA and Utopies all include significant and measurable scope 3 emissions, while PACE, Rabobank (Ecofys) limits the calculations to scope 1 and/or scope 2 emissions of their clients[3]. Especially scope 3 emissions can be significantly higher than scope 1 and scope 2 emissions. PACE includes emissions from projects above 100.000 tonnes CO_2, while Ecofys puts the threshold on the top 100 of Rabobank customers (within the loan book).
- Most methodologies use the proportional approach in which clients emissions are attributed to the financial institution proportional to the amount of money provided to the client.

[3] *Scope 1 are direct emissions from sources that the client owns or controls (natural gas, own cars, etc), scope 2 emissions are indirect emissions from the purchase of electricity of heat and scope 3 emissions are all other indirect emissions that are not owned or significantly be influenced by the client (purchases, products).*

Table 1. Summery table with the reviewed methodologies

Developing Organisation	**Trucost**	**Profundo**	**Platform**	**Utopies**	**CenSA**	**PACE**	**Ecofys**
Developed for	Fund managers and investors	Milieudefensie/ General public	Various NGOs	Caisse d'Épargne	Highlands and Islands Enterprise (HIE)	OPIC	Rabobank Group
Financial Products covered (financial boundaries)	Equity share holding of UK Investment Funds and Trusts	Corporate loans, project finance, investment banking services, asset management provided by Dutch banks to oil, gas and coal extraction (mining) companies	Project finance provided to oil and gas extraction companies	Savings, insurance and loans; both private and business	Loans, equity investment, or, in some cases, capital grants provided to all kind of activities	Project finance for projects with emission profile of up and above estimated 100 kton CO_2/yr	Credit loan book
Way of attributing emissions to financial products	Proportional to equity share in companies in investment and trust funds	Proportional to equity and debt share regarding all financial products provided to oil, gas and coal exploitation companies	Proportional to share of project finance provided to oil, gas exploitation companies	Proportional to financial loans provided to consumers or business	Average emission intensity per sector which receive financial support	All project-emissions above 100 ktonnes are allocated to OPIC	Two ways: Proportional to share of credit loans in different sectors Proportional to loans provided to 100 largest customers;
Emission Scopes of companies that receive finance	Scope 1 and 2, First Tier Scope 3	Scope 3 of fossil fuels produced	Scope 3 of fossil fuel produced	Scope 1, 2 and 3	Scope 1, 2 and 3	Scope 1	Scope 1 and 2

Developing Organisation	**Trucost**	**Profundo**	**Platform**	**Utopies**	**CenSA**	**PACE**	**Ecofys**
(Scope 1, 2 or 3)[4]							
Type of Emissions included	All Kyoto gasses are included	Limited to CO_2	Limited to CO_2	All Kyoto gasses are included	Limited to CO_2	Both CO_2 and CH_4	All Kyoto gasses are included
Materiality, thresholds: **Emissions attributed to the financial products** **Financial threshold**	No threshold for emissions or volume of financial transaction.	Emissions from burning fossil fuels produced by oil, gas and coal producers, no financial threshold	Emissions resulting from burning fossil fuels from oil, gas projects for 15 years; no financial threshold.	Scope 3 only if significant compared to scope 1 and 2 emissions; scope 3 must be measurable; financial risk tied to product or activity.	"Larger" investments.	Projects above 100 ktonnes; no financial threshold.	No threshold for emissions; financial threshold (top 100 customers) for bottom-up approach
Time frame for financial transaction	Not mentioned	Corporate loans and project finance provided over period 2004-2006, shareholdings at the end of 2006.	Project finance of last 3 years	1 year	2007/2008	1 year	Not explicitly mentioned
Information sources	Trucost-Databases	Financial information from Dutch banks, emission figures	Financial information from RBS, emission	Environmental reports for Scope 1 and 2; sectoral	Financial data with respect to activities of HIE; emission	OPIC Project information	Balance Sheet accounts of sectors and companies;

[4] *Scope's according to the GHG-protocol (WRI, 2009).*

Developing Organisation	Trucost	Profundo	Platform	Utopies	CenSA	PACE	Ecofys
		derived from publicly available data on fossil fuel production volumes	figures derived from publicly available data on fossil fuel production volumes	environmental input/output data analyses for Scope 3	data from sectoral input/output analysis		Emission accounts of geographical regions and companies; Credit loans to sectors and companies of researched bank
Uncertainty analysis	Not used	Not used	Not used	Not used	Not used	Estimations are added-up with 5 %	Not used
Normative references	Kyoto, IPCC	Not used M	Not available	GHG-protocol, ISO14040	Not available	GHG-protocol	GHG-protocol
Verification	Internal	Not used	Not used	Not used	Not used	First party	Not used
Double counting addressed	Mentioned, but not clear how	Not used	Not used	Addressed as issue to be solved	Not used	Taken into account	With respect to alternative financial products to same customers

INTRODUCTION

NGO's attach an increasing importance to the climate impact of the financial activities of the banking sector. A study by Milieudefensie/Friends of the Earth Netherlands, published in 2007, compares carbon footprints of a number of major Dutch banks. In addition to the standard footprint (of operational activities), the study also focused on the indirect emissions or "financed emissions" of the banks. Since 2007 several financial institutes, sometimes in corporation with NGO's, developed their own methodologies to estimate the carbon footprint of financial products and services.

This study aims to comprise an inventory and review of currently existing methodologies, providing recommendations for a possible commonly accepted methodology. The content is based upon publicly available reports. The involved parties are not interviewed or in any other way approached in order to determine details on the methodologies. This report therefore provides merely general, first observations on available "financed emission" methodologies and does not provide a complete and exhausting overview of all methodologies currently used to assess financed emissions.

In chapter three, the eight different analysed methodologies are listed. In chapter four the analyzing framework used to review the methodologies is described. Chapter 5 contains de conclusions that can be drawn from the comparison of methodologies. In chapter 6 recommendations for further work are made.

Factsheets containing the analyses of the different methodologies can be found in appendix 1.

ANALYSED METHODOLOGIES

A total of eight different methodologies are analysed. Table 2 provides an overview of the methodologies.

Table 2. Overview of methodologies

Number	Organisation	Involved financial institutes	Name of methodology	Year of development
1	Trucost	185 different funds compared (in 2007)	Trucost Carbon Footprint Ranking of UK Investment Funds 2007	2007
2	Profundo	Dutch Banks compared (ABN AMRO Bank, ASN Bank, Fortis Group, ING Group, Rabobank Group, Triodos Bank)	Investing in Climate Change; Dutch Banks compared 2007	2007
3	Platform	Royal Bank of Scotland (RBS)	The Oil and Gas Bank; RBS & the financing of climate change	2007
4	Utopies	Groupe Caisse D'epargne	FOE Utopies + study Sustainable Development labelling of Banking Products	2008
5	CenSA	Highlands and Islands Enterprise (HIE)	The carbon Footprint and Climate footprint of Highlands and Islands Enterprise 2007/08	2008
6	OPIC	Overseas Private Investment Corporation (OPIC)	OPIC (Overseas Private Investment Corporation)	2007
7	Ecofys	Rabobank	Rabobank Group: Balance Sheet carbon footprint methodology	2008

FRAMEWORK OF ANALYSIS

For the reviewing of methodologies, an analysing framework is used. The framework takes the most relevant topics / issues mentioned in the studied documents into account as well as relevant literature (WRI, 2009)[5], (WRI, March 2009)[6].

Table 3. Framework of analysis

Methodology	The name of the organisation that developed the methodology.
Developed by	Name of organisation, group of organisations or initiative.
Further information	A reference to further, more detailed information on the methodology.
Objectives of the GHG inventory (as mentioned in the report)	For example: Demonstrating environmental stewardship to stakeholders (i.e. managing reputational risk/opportunity). Achieving robust risk management for both its proprietary and managed investments (i.e. managing investment risk and opportunity, and fulfilling its fiduciary duty to its clients).
Alignment with normative references?	Does the methodology follow respected protocols such as ISO14044, BS, ISO 14021, GHG-protocol, IPCC2006/2007, other?
Financial services covered by the methodology	E.g. Equity share, investment funds, Consumer products, Credit loan book, Project finance, etc.
Way of attributing emissions to financial services	How are emissions attributed to financial services? A common principle is proportionality: when e.g. a bank holds 2% equity in a client 2% of the client's emissions is attributed to the bank. In other cases 100% of the emissions are attributed to the financial provider e.g. in case of project finance with emissions above specific threshold.
Emission scopes of companies that receive finance (Scope 1, 2 or 3 of financial products and services)	This involves identifying emissions associated with the operations of the companies that are financed in any way and categorizing these as direct or indirect emissions, and choosing the scope of the accounting and reporting. Scope 1: direct GHG emissions are emissions from sources that are owned or controlled by the company. Scope 2: Emissions that occur as a result of purchase of electricity by the company that receives finance: Scope 3: Indirect GHG emissions that are a consequence of the activities of the company but occur at sources owned or controlled by another company.

[5] *(WRI, 2009). GHG-Protocol, World Resources Institute and World Business Council for Sustainable Development, www.ghgprotocol.org*

[6] *(WRI, march 2009). Florence Daviet, Clay Rigdon, and Shally Venugopal, Developing a Representative GHG Inventory for Financial Institutions, March 2009.*

Type of emissions included	• Energy use, chemical reactions, refrigerants, land use change, waste • All 6 Kyoto gases? • GWP time period for assessment (100 year period)?
Materiality/thresholds: Emissions attributed to the financial products	Identifying the significance of emissions, for example: Absolute emissions (tons over a specific threshold).
Financial threshold	Determine the transaction financial relevance, for example: Size of transaction (e.g. in relation to the size of the portfolio). Size of the capital recipient (e.g. ten largest clients in a portfolio).
Time frame for financial transaction	An equitable accounting method may look at the transaction over the time during which the capital provider derives an economic benefit. From a practical standpoint, it may be prudent to establish a minimum threshold. For example, a minimum of one year, could be established to limit the inclusion of transactions such as revolving credits, which usually have maturities of less than 365 days and allow the borrower to draw down, repay, and re-borrow. Including such a transaction may only make the inventory exercise more difficult, owing to the high level of turnover and restructuring. The benefit from including these transactions, therefore, might be outweighed by the cost of monitoring and updating the information.
Information Sources	Most relevant information used in the report to define the financed emissions, including emission data.
Tool used	Generic methodologies used to calculate emission figures (ADEME, other..).
Uncertainty analysis	Have the authors looked into the level of uncertainty in the final emission values? Yes/no, and if so, what type?
Verification	Have results and/or source data been verified internally or by a third party?
Double counting	Have (some) emissions been counted more than once? Yes/no, is double counting considered at all? Double counting is an issue in the general discussion about accountability and responsibility of banks for their clients emissions. For banks we consider these clients emissions to be Scope 3 where these emissions are also accounted for as Scope 1 emissions by the client.

CONCLUSIONS

Accounting for financed emissions is a relatively new activity for financial institutions. Different methodologies have been developed, of which seven are reviewed in this report. These methodologies are all still in their infancy. Although some methodologies mention the importance of issues as double counting, assessing uncertainties and verification of the used methodology, none of the methodologies is really going into details. Considering the growing attention and demand for assessment of financed emissions, it is expected that further development will take place in the near future.

Presently, no standard one-size-fits-all guidance is available (yet) for quantifying financed emissions. This is due to the wide variety of financial products, all with their own specific nature and complexity. Most methodologies are in line with one or more international guidances or protocols available on carbon footprinting for organisations or products and services (GHG-protocol, ISO14065, PAS2050, etc). Depending on their scope, the methodologies use a mix of these guidances and approaches in order to determine the footprint of financial products. When it comes to attributing emissions to products, most methodologies use the proportional approach. Or, in other words, clients emissions are attributed to the financial institution in proportion to the amount of money provided to the client.

However, the reviewed methodologies vary greatly in all other respects: with respect to their purpose, included scopes (e.g. products, type of emissions included), the boundaries set and the materiality rules. Profundo, Platform, CenSA and Utopies all include significant and measurable scope 3 emissions, while PACE, Rabobank (Ecofys) limits the calculations to scope 1 and/or scope 2 emissions of their clients[7]. Especially scope 3 emissions can be significantly higher than scope 1 and scope 2 emissions. PACE includes emissions from projects above 100.000 tonnes CO_2, while Ecofys puts the threshold on the top 100 of Rabobank customers (within the loan book).

The choice of methodology is and should be firmly guided by what is intended to be measured. This, in return, highly depends on the interests and objectives of the organization (client, stakeholders, etc). For example, Trucost is making a comparison between investment funds, Utopies assesses the climate impact of saving and loan products in order to inform clients, while Ecofys (Rabobank) determines the climate risk exposure of the credit loan book. In this study, four different objectives have been distinguished: (1) *comparison and ranking* of banks, funds and financial products, (2) *transparency on banks investments* and information for individuals, (3)

[7] *Scope 1 are direct emissions from sources that the client owns or controls (natural gas, own cars, etc), scope 2 emissions are indirect emissions from the purchase of electricity of heat and scope 3 emissions are all other indirect emissions that are not owned or significantly be influenced by the client (purchases, products).*

climate impact assessment and (4) *risks assessments*. An overview of the objectives of the different methodologies is presented in table 4.

Further development is required to develop one or more universally applicable methodologies to serve different objectives.

Table 4. Methodologies and their objectives

Num	Meth.	Objectives
1	*Trucost*	*Comparison and ranking* of the carbon footprint of investment funds
2	Profundo	*Comparison and ranking* of financed climate emissions of banks based on loan, equity portfolio's and project finance.
3	Platform	*Comparison and ranking* of financed emissions based on project finance of one bank
4	Utopies	*Provide a climate label for consumer banking products, and* providing risk assessment
5	CenSA	*Climate impact assessment* by determining the carbon footprint of all financed activities of the Highlands and Islands Enterprise development bank.
6	PACE	*Climate impact assessment* by determining the carbon footprint attributable to projects to which the Overseas Private Investment Corporation (OPIC) is financially committed.

RECOMMENDATIONS FOR FURTHER WORK

- While financed emissions can be quantified in various ways, sensible ways of reducing financed emissions should be subject to more research
- Start an open discussion with the main parties involved on the level of influence and responsibility of banks for “financed emissions” This is needed to get constituency amongst all relevant stakeholders for one or some universal calculation methodologies of financed emissions.
- Develop a mix (or set) of mutual accepted methodologies. This can be based upon the existing methodologies or parts hereof.
- Determine the practical constraints for a common methodology or a set of methodologies. For example on data availability and the efforts necessary to actually calculate the emissions.
- Climate risk exposure is an important, even crucial aspect for financial institutes. For that reason we recommend to examine/determine the relation between financed emissions and the actual climate risks that these emissions entail.

APPENDIX 1. METHODOLOGY FACT SHEETS

Trucost

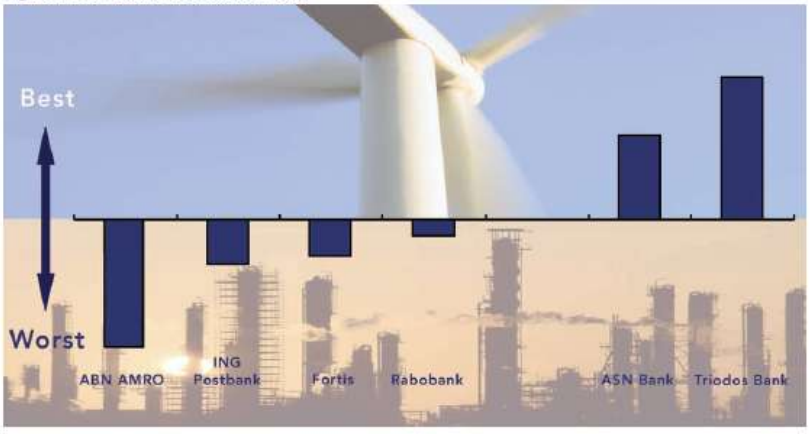
Developed for	Fund managers and individual investors
Information available	Carbon Counts 2007: The Trucost Carbon Footprint Ranking of UK Investment Funds.
Objectives of the GHG-inventory	Calculation of the Carbon Footprint of 185 UK Equity Investment Funds and subsequently ranking of investment funds to provide information to fund managers looking to control and measure the risks associated with carbon emissions in their portfolios.
Alignment with normative references	Reference to Kyoto Protocol and IPCC GWP index (page 10 and 23).
Financial products covered	Investment Trust and mutual funds; £73,65 billion assets under management (page 2).
Way of attributing emissions to financial products	Each holding's contribution to the emissions profile of the portfolio is calculated on an equity ownership basis and aggregated to form a total for the whole fund. Carbon Intensity of a Investment Fund is calculated as follows: Carbon owned/Turnover owned = Carbon Intensity.
Emission scopes of companies (Scope 1, 2 and/or 3)	Only full direct emissions and first-tier emissions. First Tier emissions are emissions purchased upstream from the company's direct suppliers. These include purchased electricity, business travel and freight (page 20). All direct GHG's-emissions are taken into account and converted into CO_2-equivalents.
Emissions included	All 6 Kyoto gases. Time period for assessment: not clear but in line with Kyoto Protocol.
Materiality/thresholds: **Emissions attributed to the financial products.** **Financial threshold.**	No threshold used to define the materiality of emissions. All direct emissions from all companies are taken into account. No financial threshold used.
Time frame for financial transaction	Not mentioned.
Information Sources	Own database of GHG-data, annual reports and accounts, environmental sustainability reports, public disclosures and websites (page 20).
Tool used	Trucost Input-Output model. Trucost Carbon Footprint calculation formula.
Uncertainty analysis	Not made clear in the report or from the explanation on the underlying methodology.
Verification	Internal verification of methodology by expert panel.

Double counting	Only applicable when counting first-tier emissions of direct suppliers. Direct emissions are taken into account proportional to equity share of the investment fund, so investment fund more or less 'owns' the attributed share of the emissions.
Example of results	

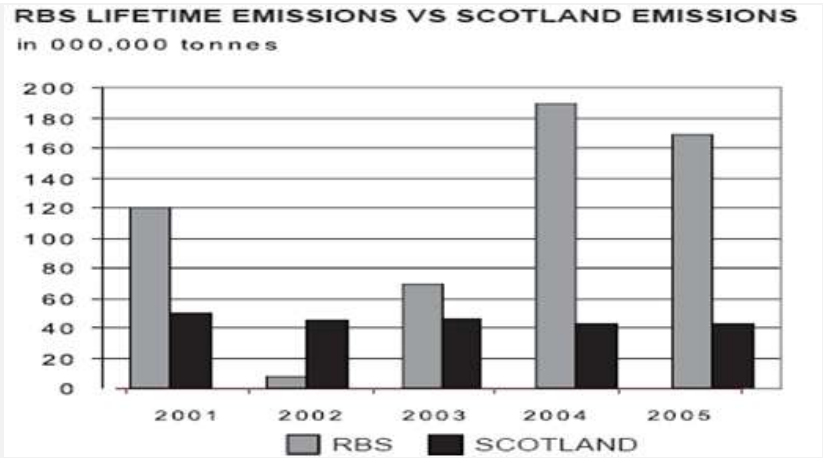
Portfolio Name	Rank	Carbon Footprint per £1 mn Invested	Fund Size (mn)	Rank Overall
Prudential Ethical Trust*	1	169	23	1
AXA Ethical Acc R*	2	173	54	2
Sovereign Ethical*	3	185	40	3
Norwich Sustainable Future UK Growth SC	4	234	93	6
Scottish Widows Environmental Investor A Acc	5	250	249	9

Profundo

Developed for	Milieudefensie/Friends of the Earth Netherlands
Information available	Investing in Climate Change, Dutch banks compared 2007 (Milieudefensie/ Friends of the Earth Netherlands with support of Profundo)
Objectives of the GHG-inventory	Comparison of Dutch banks in terms of: • Absolute amount of capital provided by each bank group to producers of Gas, Oil and Coal (GOC). • Relative amount of capital provided to GOC-producers compared with the total investment made by each bank in the corporate sector. • Annual CO_2-emissions (absolute, and per Euro) resulting from the combustion of the volumes of gas, oil and coal financed by each bank.
Alignment with normative references	Not mentioned.
Financial products covered	All following financial products provided to producers of gas, oil and coal: • Corporate loans (on the balance sheet) • Project finance to producers of gas, oil and coal (on the balance sheet) • Investment banking services aimed at helping the company sell shares and bonds on the capital market (not on the balance sheet) • Asset management, namely investments in shares and bonds on the banks own account (on the balance sheet) • Asset management on behalf of third parties (not on the balance sheet)
Way of attributing emissions to financial products	Proportional to equity and debt shares related to the CO_2-emissions caused by the burning of fossil fuels, produced by the financed GOC-exploitation companies. The CO_2 intensity of capital provided is calculated in 2 steps: 1) The volumes of CO_2 that will be caused by the combustion of annual volumes of gas, oil and coal, produced by each GOC producer financed, are calculated. 2) These CO_2-volumes are compared to the total assets of the client. **A separate comparison was made for saving accounts:** A separate calculation of amounts financed in categories of financial services provided to producers of GOC: corporate loans, project finance and investments from Bank's own account. In the denominator all categories for which savings are used: Recalculating relative CO_2-emissions using financial services to GOC-producers, results in an estimate of the volume of CO_2 produced with every € 1000 put on a saving account.
Emission scopes of the companies	For practical reasons, the research was limited to most relevant companies in the fossil fuel extraction chain: • Coal mining sector: dedicated coal miners, diversified mining

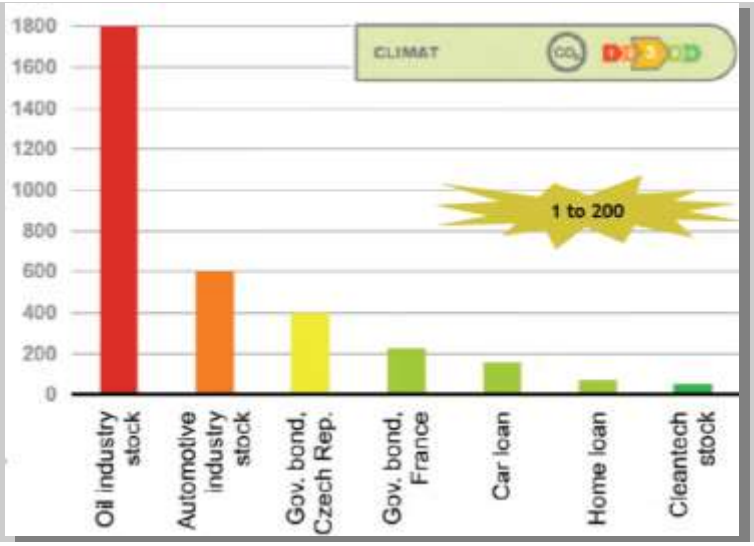
	companies which are involved in coal mining, integrated steel producers which operate coal mines. • Oil & Gas producers: small exploration and production companies, large integrated oil majors, conglomerates, active in oil & gas exploration and other industrial sectors • Upstream and midstream companies: supply oil and gas exploration We conclude from this that only **Scope 3 emissions** have been taken into account by calculating the emissions caused by the combustion of the GOC produced by the companies included in the research. Direct emissions caused by the companies themselves are not taken into account.
Emissions included	Only CO_2-emissions by burning fossil fuels (energy use).
Materiality/thresholds: **Emissions attributed to the financial products** **Financial threshold** **Level of influence**	• Emissions materiality: all emissions by burning fossil fuels that are produced by companies • Financial Threshold: not used • Level of influence: not used
Time frame for financial transaction	Corporate loans and project finance provided over period 2004-2006, shareholdings at the end of 2006.
Information sources	Many financial sources and databases, corporate websites and annual reports.
Tool used	Own methodology developed by Profundo and Milieudefensie/FoE NL.
Uncertainty analysis	Not mentioned.
Verification	Not mentioned.
Double counting	Not mentioned.
Outputs of report	Figure 1: The Climate Performance Index 

Platform

Developed for	Various NGOs
Objectives of the GHG-inventory	To make the general public/ readers of the report aware of the climate change impacts of RBS financing oil/gas projects.
Alignment with normative references	Not mentioned.
Financial products covered	Project Finance for oil & gas projects.
Way of attributing emissions to financial products	The pro ratio share of the finance provided by RBS is projected on the annual emissions of the oil & gas project * 15 years (average lifetime of an oil & gas project).
Emission scopes	Scope 3 emissions of oil & gas producers; the emissions of the products produced by corporate oil & gas companies. The 'embedded' carbon emissions which are caused by the combustion of the oil and gas produced by companies which receive project finance from RBS.
Emissions included	CO_2-emissions by burning fossil fuel.
Materiality/thresholds **Emissions attributed to the financial products** **Financial threshold**	Materiality: only Scope 3 emissions of the companies Financial Threshold: no lower threshold.
Time frame for financial transaction	Project finance of last 3 years.
Information sources	Publicly available project finance data, emissions recorded and financial data.
Tool used	No particular name; methodology developed by PLATFORM.
Uncertainty analysis	Not mentioned.
Verification required	Not mentioned.
Double counting	Not mentioned.
Example of results	

Utopies

Developed for	Groupe Caisse D'Épargne
Information available	Utopies; Sustainable Development Labelling of banking products, V1 June 2008.
Objectives of the GHG inventory	To introduce a label by which customers can assess the climate impact of their saving account, insurance or loan.
Alignment with normative references	GHG-protocol, and Bilan Carbone (ADEME), ISO 14040 standard on life-cycle assessment.
Financial products covered	Both equity and debt products. More specifically*:* • Savings products (saving accounts, funds, life insurance), • Loan products, • Insurance products. For businesses and individuals.
Ways of attributing emissions to financial products	All emissions are calculated on an annual basis. By adopting a standard of this kind, we can evaluate the various banking products on an identical basis and capitalize on a full range of resources (including annual reports and environmental databases) in order to make the calculations necessary for arriving at a rating. Separate equity and debt capital and consider investment proportion.
Emissions scopes of companies or individuals that receive finance	Scope 3. Definitions are further elaborated as follows: To calculate the greenhouse-gas emissions attributable to an entity: • We calculate the carbon balance sheet for its activities. This includes emission inventories within three different scopes that correspond to various levels of influence (scope 1, 2 and 3). • We use the notion of a product's life cycle to identify emissions generated by purchases and products. The life cycle of a product includes all "consecutive and interlinked stages of a product system, from raw-material acquisition and generation of natural resources to final disposal."
Emissions included	All six Kyoto gases: CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.
Materiality/thresholds: **Emissions** **Financial** **Level of influence**	Financed emissions are evaluated with reference to the entire value chain of the financed activity or product (i.e. its life cycle). Nothing is stated on the significance of scope 1 and 2 emissions. Only emissions included in scope 3 must meet one or more of the following criteria: • Their CO_2 impact should be significant by comparison with Scopes 1 and 2. • They should be perceived as significant and related to the stakeholders' activities (i.e. in the opinion of the panel).

	• It should be possible to measure these emissions in a way that isolates the contribution by the bank's product or policy. • They should have a link to the financial risk tied to the product or activity. No statement on the transaction financial relevance is made. No specific statement is made on the level of influence as factor to determine what is accounted for.
Time frame for financial transaction	Nothing mentioned.
Information sources	• Each company's environmental report (for Scopes 1 and 2 in particular). • Each company's response to the Carbon Disclosure Project (Scopes 1 and 2). • National statistical databases for the sector. • The various life-cycle assessment databases (for purchases, use and end-of-life in Scope 3 in particular). • Economic and environmental I/O databases.
Tool used	Bilan Carbone and other LCA databases.
Uncertainty analysis	No uncertainty analysis is made. However it is stated that in a later version of the document this point will be addressed.
Verification required	Not clear.
Double counting	In the case of mutual funds, double counting has been neutralized using the methodological approach described in the body of the document. This neutralization is based on exchanges among business sectors, which are themselves estimated on the basis of the economic input/output of the US economy in 1997 rather than the actual flows among the companies held in the portfolio. This process of neutralizing double counting is applied only to mutual fund portfolios; it is not applied to savings products or composite products.
Visualisation of methodology outputs	

CenSA

Developed for	Highlands and Islands Enterprise (HIE). HIE is the Scottish Government economic and community development agency covering the north and western half of Scotland.
Objectives of the GHG-inventory	To provide a carbon footprint and climate footprint for Highlands and Islands Enterprise.
Alignment with normative references	Internal activities: GHG-Protocol. Investment activities: Environmentally Extended Input-Output Life Cycle Analysis.
Financial products covered	Support activities i.e. loans, equity investment, or, in some cases, capital grants for communities and cultural projects.
Way of attributing emissions to financial products	Average emission intensity per sector, which have been provided based on a thorough Input-Output LCA analysis per sector in the UK.
Emission scopes of companies that receive finance	All CO_2-emissions related to investments in different sectors, whereby for larger projects (half of the projects) a more accurate emission profile was attributed to the concrete activity (page 19).
Emissions included	Several gases, including CO_2.
Materiality/threshold: **Emissions** **Financial**	No material or financial threshold mentioned.
Time frame for financial transaction	Not clear.
Information sources	Expenditure data which were allocated to one of the 82 sectors in the Bottomline tool.
Tool used	Bottomline3; an Input-Output LCA Analysis methodology.
Uncertainty analysis	Not mentioned.
Verification required	Not mentioned.
Double counting	Not taken into account in the calculation methodology, but explicitly mentioned that HIE cannot be held responsible for all indirect emissions that have been counted in this study (page 25).
Outputs of report	Table 2: Total climate footprint of HIE activities in 2007/08 (direct + indirect emissions of greenhouse gases) (numbers in brackets are from FY 2006/07)

HIE's Activities	HIE's Climate Footprint (CO_2+CH_4+N_2O)	Unit	Percentage of Climate Footprint	Percentage of budget
Internal Activities	**1.67** (1.66)	kt CO_2-e	**10** (12)	**21** (20)
Support Activities	**14.5** (12.1)	kt CO_2-e	**90** (88)	**79** (80)
Total (internal + support activities)	**16.2** (13.7)	kt CO_2-e		

OPIC

Name of methodology	PACE Global Energy Service; Overseas Private Investment Corporation (OPIC), supported by PACE (Pace Global Energy Services).
Information available	OPIC's FY2008 Annual Policy Report.
Developed for	Overseas Private Investment Corporation (OPIC).
Objectives of the GHG-methodology	Perform an independent assessment of climate change impacts attributable to projects to which OPIC is financially committed to enable OPIC to assess the climate impact of their project finance.
Alignment with normative references	GHG-protocol.
Financial products covered	Project finance of by OPIC supported projects in the energy, oil & gas, transportation, mining, manufacturing and construction sectors.
Way of attributing emissions to financial products	100% of emissions of projects which are estimated to go over 100,000 tonnes of CO_2 per project
Emission scopes of companies included	Only Scope 1 (Direct site-emissions caused by the combustion of fossil fuels) of the project finance portfolio (OPIC's Scope 3) in the energy, oil & gas, transportation, mining, manufacturing and construction sectors. • Explicitly excluded are emissions caused by other sectors. • Explicitly excluded are Scope 2 and Scope 3 emissions by financed activities. • Explicitly excluded are Scope 1 and 2 emissions by the OPIC organisation itself.
Emissions included	GHG-emissions are expressed in CO_2-eq., but only CO_2 and in some occasions of Natural Gas projects also CH_4 (fugitive emissions) from natural pipeline transports is calculated.
Materiality/thresholds: **Emissions attributed to the financial products** **Financial threshold**	Materiality: 100% of emissions of projects which are estimated to go over 100,000 tonnes of CO_2 per project. Financial Threshold: 100% of project finance.
Time frame for financial transaction	Projects active as of June 30, 2008.
Tool used	No particular name; developed by PACE.
Uncertainty analysis	All emission estimates are added with 5% as a compensation factor for inaccuracies.
Verification required	In order to support the accuracy of the estimates and assumptions and to ascertain 2007 operational emissions data, OPIC solicited additional information and verification of Pace's estimates from the individual project operators.

Double counting	To avoid double counting only the direct emissions caused by fossil fuel combustion of the financed projects were calculated.
Outputs	-

Ecofys

Name of methodology	Balance Sheet carbon footprint methodology; Ecofys in collaboration with Rabobank Group.
Developed for	Rabobank Group.
Information available	Factsheet on methodology specifically composed for this research.
Objectives of the GHG inventory (as mentioned in the report)	Financial Risk management: because CO_2 emissions are expected to become more and more expensive for companies, and because this could affect their financial position, this development is also accompanied by financing risks for Rabobank. The extent to which customers in energy-intensive sectors succeed in reducing their CO_2 emissions is receiving an increasing amount of attention.
Alignment with normative references?	GHG-protocol.
Financial products covered by the methodology	Proportional share of emissions as result of credit lending to business customers.
Way of attribution emissions to financial products	**The top-down calculation** serves to get insight into the overall exposure to carbon risks and opportunities and the contribution of different sectors. In the top-down approach the emissions associated with sectors of the economy like agriculture or transport are linked to the loans of the bank per sector. The relative share of the bank in the GHG emissions per sector was calculated by dividing the bank loans to the sector by the total balance sheet of that sector. With the top-down approach the indirect GHG emissions of bank as a whole can be calculated, without having to collect detailed information per client. For smaller and not publically listed companies with limited (environmental) reporting obligations the top-down approach is often the only viable method. **In the bottom up calculation**, the emissions linked to the top-100 clients of the bank in terms of loans are calculated. The top-100 gives insight in the ranking of companies that have the largest absolute share in the bank's indirect carbon footprint.
Emission Scopes of companies that receive finance (Scope 1, 2 or 3 of financial products and services)	The greenhouse gas emissions were defined by taking into account scope 1 and scope 2 of the GHG Protocol. The scope 1 emissions include CO_2, CH_4, N_2O, HCFs, PFCs and SF_6. For scope 2, the CO_2 emissions related to electricity use were included.
Emissions included	All 6 Kyoto emission types.
Materiality/ threshold: Emissions attributed to the financial products	In the bottom-up approach the emissions of the 100 largest customers (in financial terms) are assessed. In the top-down approach the total of financed emissions by Rabobank is

Financial threshold	assessed. Determine the transaction financial relevance, for example: • Top-down: no financial threshold • Bottom-up: 100 largest clients in the credit portfolio.
Time frame for financial transaction	Actual moment.
Information sources	Top-down: All outstanding loans for different sectors in different regions (Rabobank). Total balance sheet of sectors in different regions (national accounts). Total emissions of different sectors in different regions (national statistics). Bottom-Up: Credit loan figures to 100 largest customers (Rabobank). Balance sheet figures of these customers (annual reports). Greenhouse Gas figures of accounts (CSR-reports or other databases).
Tool used	ECOFYS tool specifically developed for Rabobank.
Uncertainty analysis	Not mentioned.
Verification required	Not mentioned.
Double counting addressed	Only addressed with respect to other financial products like Asset management.
Visualisation of output	-