GREENHOUSE GAS PROTOCOL

Financial Sector Guidance Workshop
December 19, 2012

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Agenda

- What is GHG Protocol
- Current activities
- Standards and guidance development process
- Financial sector guidance
  - Background
  - Objectives
  - Process and opportunities for participation
- Questions and answers

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About the Greenhouse Gas (GHG) Protocol

The GHG Protocol was launched in 1998 by

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wbcsd

Multi-stakeholder partnership of businesses, NGOs, governments and others

GHG Protocol's Vision: Empowering the world to avoid and respond to climate change through the wide use of internationally accepted greenhouse gas standards and practices

GHG Protocol's Mission: The Greenhouse Gas Protocol, led by WRI and WBCSD, provides the foundation for comprehensive measurement and management strategies to reduce emissions and drive more efficient, resilient, and profitable businesses and organizations

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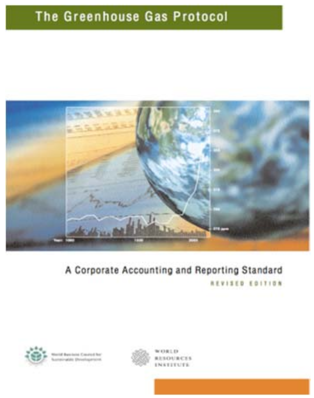
GHG Protocol

Foundation for sustainable climate strategies	Freely available standards and guidance
International, inclusive and balanced stakeholder process	Full suite of GHG accounting tools and training

GHG Protocol Standards



Corporate Standard

Product Standard

Project Protocol

Corporate Value Chain (Scope 3) Standard

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Building Capacity and Adoption

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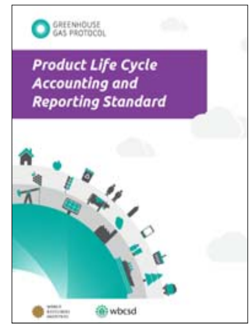
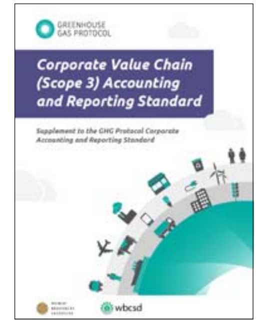
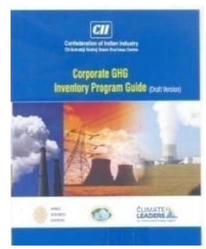
World Business Council for Sustainable Development





GHG Protocol Standards

International Organization for Standardization



The Consumer Goods FORUM

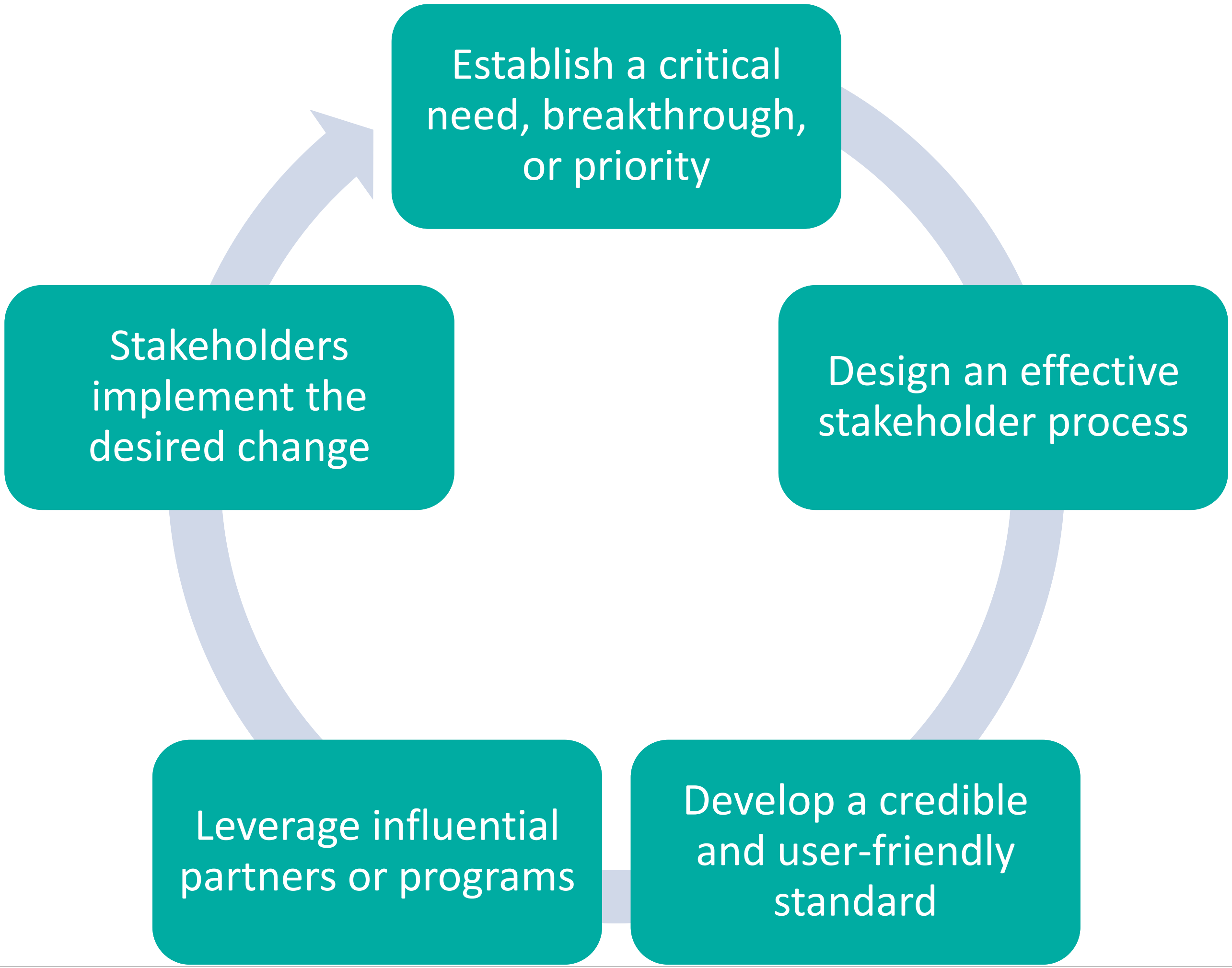
Programa Brasileiro GHG Protocol

SUSTAINABILITY CONSORTIUM

CARBON DISCLOSURE PROJECT

CLIMATE LEADERS
U.S. Environmental Protection Agency

GHG Protocol Theory of Change



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Standards and Guidance under Development

	Agriculture Guidance	Scope 2 Guidance	Mitigation Accounting Standard	City Accounting Standard	Financial Sector Guidance
overview	How to account for emissions from agriculture companies	How to account for renewable energy purchases and related instruments	How to account for reductions from mitigation policies and actions	How to account for full value chain emissions from cities	How a financial company accounts for investments
anticipated availability	Sept 2012	Spring 2013	Early 2014	Late 2013	Late 2014
how to participate	Membership in stakeholder group; road-test	Membership in stakeholder group	Membership in stakeholder group; road-test standard	Membership in stakeholder group; road-test standard	Membership in TWG or stakeholder group; road-test guidance

Additional Sector Guidance Development

- Currently working on:
  - ICT sector guidance for product GHG inventories in partnership with Carbon Trust and the Global e-Sustainability Initiative (GeSI)
- Recently completed:
  - WBCSD-led Scope 3 chemical sector guidance
- Recently approved for use of Built on GHG Protocol mark:
  - UK NHS Pharmaceutical and Medical Device Sector Guidance for Product Accounting
  - Product Rule for Concrete led by University of Washington and the Carbon Leadership Forum

BUILT ON GHG PROTOCOL

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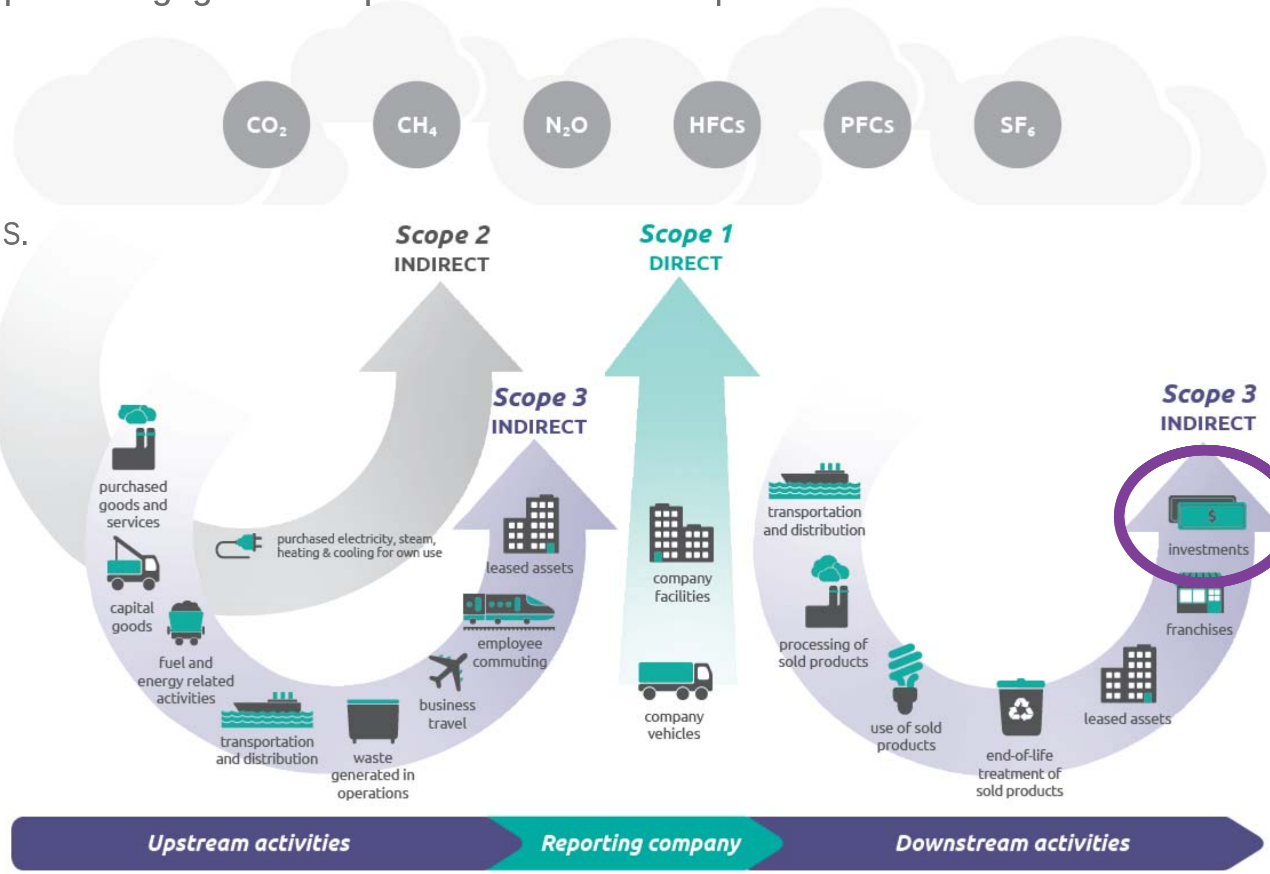
Example of a Process Underlying the Development of GHGP Standards

2300+	*Participants in the stakeholder process*
169	*Sets of written comments received*
60	*Number of road testers*
55	*Countries represented*
12	*In –person stakeholder events*
3	*Years spent completing the standards*

Financial Sector Guidance

- The GHG Protocol Scope 3 Standard provides a framework for reporting value chain emissions, including emissions from lending and investments
- A financial sector workgroup was engaged in Scope 3 Standard development
  - Barclays Capital
  - Citi
  - Credit Suisse
  - Export-Import Bank of the U.S.
  - IDB
  - IFC
  - KFW Development Bank
  - National Australia Bank
  - PaxWorld Management LLC
  - Sovereign



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Why is Financial Sector a High Priority?

- Majority of financial sector emissions are associated with investments
- Increasing external pressure on banks to account for emissions from lending and investments (e.g., Rainforest Action Network report recently released)
- The need to account for emissions from lending is particularly relevant to MDBs
- Scope 3 provides a framework for reporting emissions from investments
- Stakeholders have indicated that more sector-specific guidance is needed to enable financial institutions to report on the full impacts from investments

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In the Scope 3 Standard, some investments types are required to be reported and others are optional

Required to be reported in Scope 3:

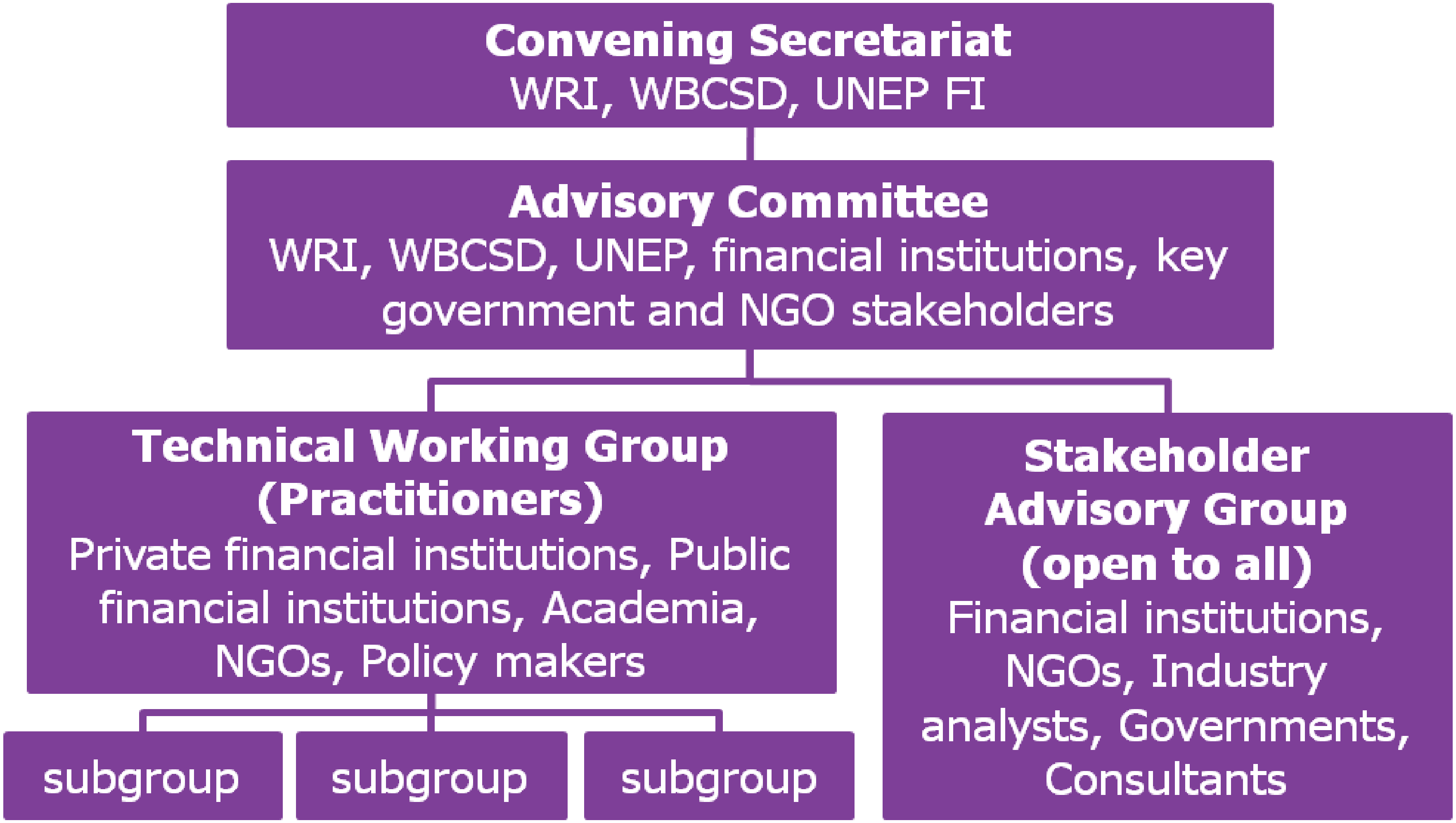
- ***Equity investments made using the company's own capital*** (including investments in subsidiary companies; associate companies; joint ventures; and investments made using the company's own capital where the investor has neither financial control nor significant influence)
- ***Debt investments with known use of proceeds*** (including corporate debt holdings and commercial loans with known use of proceeds, i.e., where the use of proceeds is identified as going to a particular project, such as to build a specific power plant)
- ***Project finance*** (long term financing of projects as either sponsor or financier)

In the Scope 3 Standard, some investments types are required to be reported and others are optional

Optional in Scope 3:

- ***Debt investments without known use of proceeds*** (general corporate purposes debt holdings, such as bonds or loans, held in the reporting company's portfolio where use of proceeds is not specified)
- ***Managed investments and client services*** (including investment and asset management – equity or fixed income funds managed on behalf of clients, using clients' capital)
- ***Other investments or financial services***

Proposed Governance Plan



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Options for Participation

- Technical Working Group participation
- Road testing draft guidance
- Stakeholder Advisory Group participation
- Contribute funding

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Thank You

Questions?

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GHGprotocol.org

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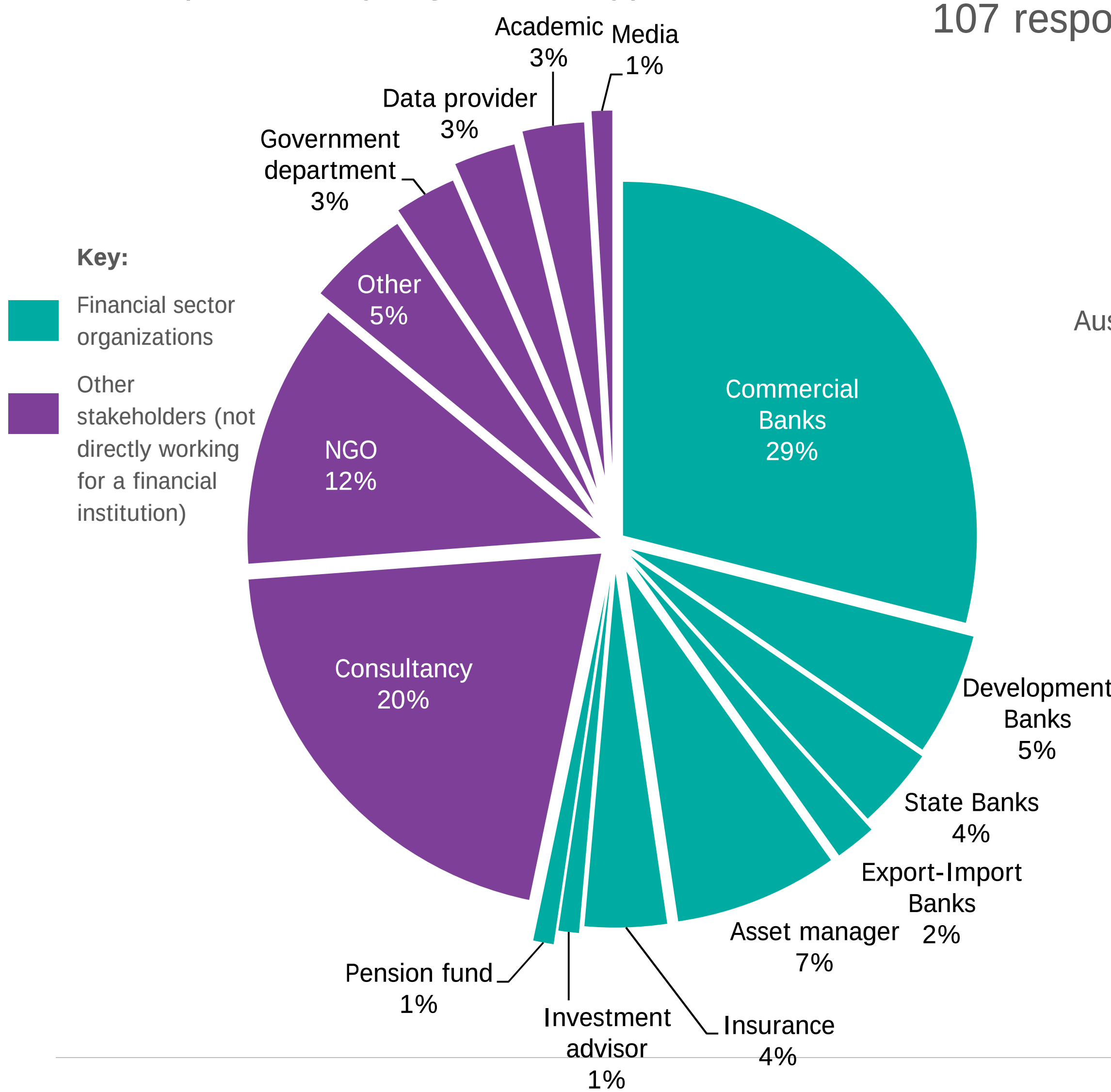
Financial Sector Guidance

Results of the scoping survey

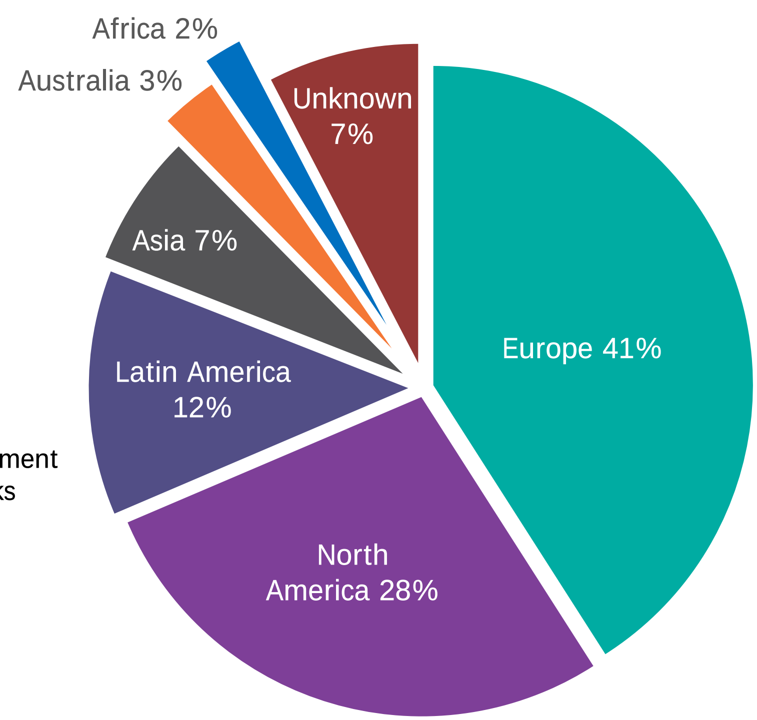
Who responded to the survey?

Respondents by organization type:



107 respondents completed the survey

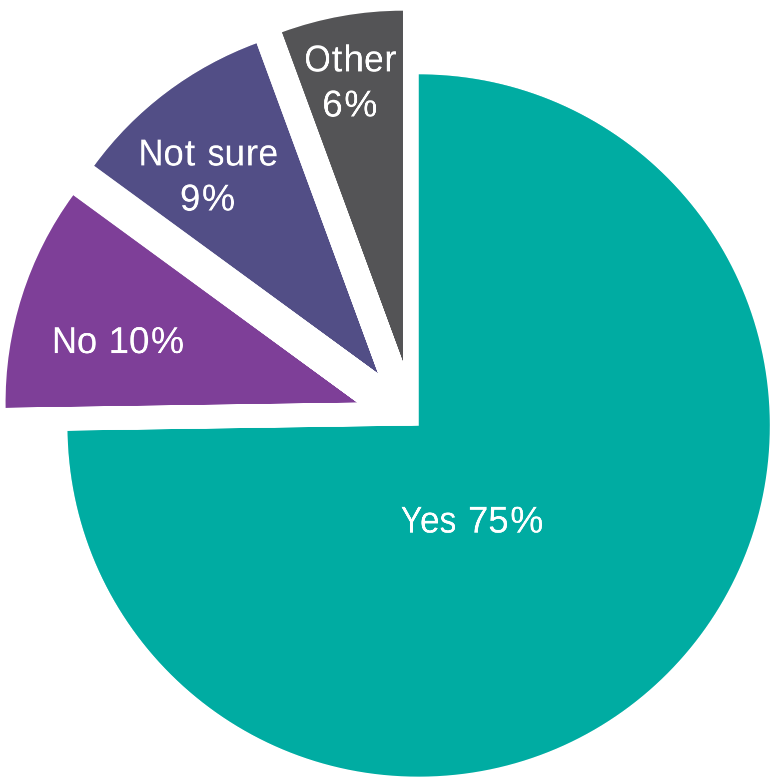
Respondents by region:



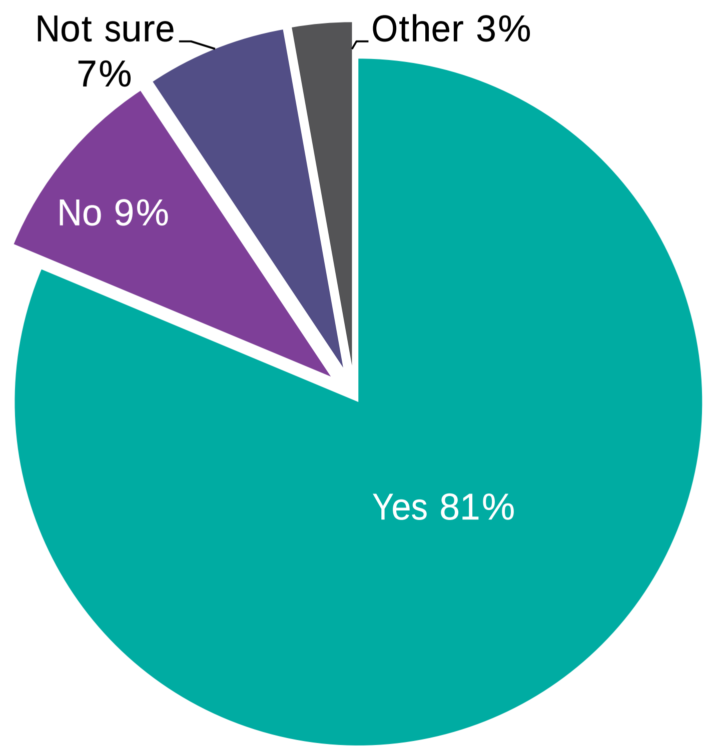
Who responded to the survey?

2° Investing Initiative
5th PL
Achmea
Allianz SE
ASN Bank
Banco do Brasil, S.A.
Banco General, S.A.
Banco Pichincha C.A.
BankTrack
Beco, (part of Ernst & Young)
Bicbanco - Banco Industrial e Comercial
Bloomberg LP
BSR
Carbon Disclosure Project
CBRE
Ceres
CIRAIG
Citi
Climate Focus
Crédit Andorrà
Credit Suisse
Defra
Desjardins Group
Earth Capital Partners
EBRD
Ecocentric Carbon Management
EFIC
Emporiki Bank of Greece
Environmental Investment Organisation
Environment Agency Active Pension Fund
ERM
Ethical Markets Media
Export Development Canada
Factor CO2
Fira Banco de Mexico
FMO
GFAI Investimentos
Helm Bank
HSBC
IDLC Finance Limited
Inter-American Development Bank (IDB)
International Rivers
Itau Unibanco
JPMorgan Chase
Land Bank of the Philippines
London School of Business and Finance
MAPFRE
Myclimate
National Australia Bank
ODI
Oeco Capital Lebensversicherung AG
Pax World Management LLC
PE INTERNATIONAL
Portigon AG
Preventable Surprises
PricewaterhouseCoopers
Profundo
Rainforest Action Network
RBS
Royal Bank of Canada
S2 Sustainability Consultants
Santam Ltd
SEB
Second Nature
Shareholder Association for Research and Education (SHARE)
Singapore Management University
South Pole Carbon
Standard Bank
Start2see
State Street Corporation
SulAmérica Seguros, Previdência e Investimentos
TD Bank Group
The Carbon Accounting Company
The CMG Consultancy
The Pembina Institute
Trucost Plc
UniCredit SpA
Verco
Wells Fargo
Westpac Bank
Wipro
WSP Environment & Energy
WWF Germany
WWF Sweden
YES BANK Ltd.

Key question 1: Is measuring and reporting emissions associated with lending and investments an important business issue?

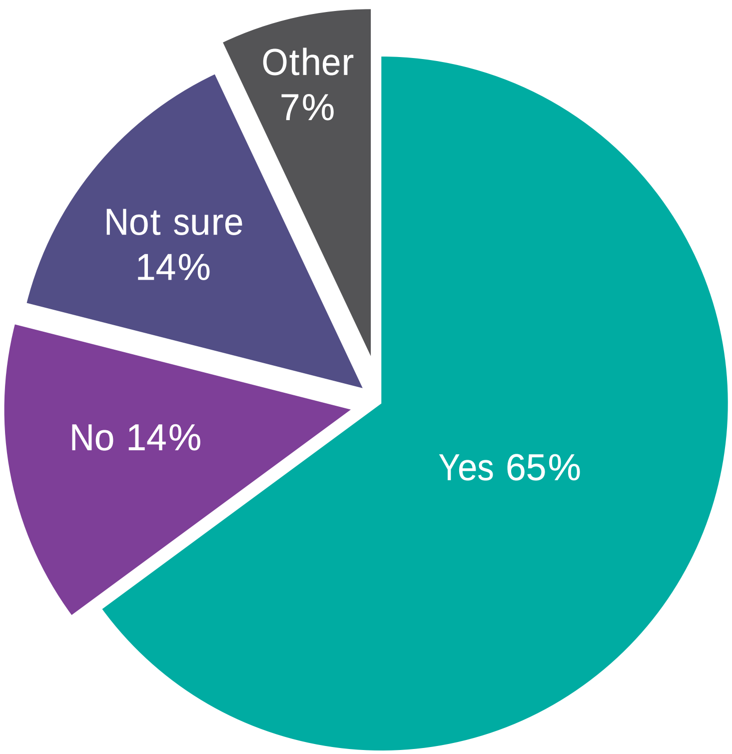


Key question 2: Is there a significant and long-term need for standardized methodologies/guidance for measuring financed emissions?

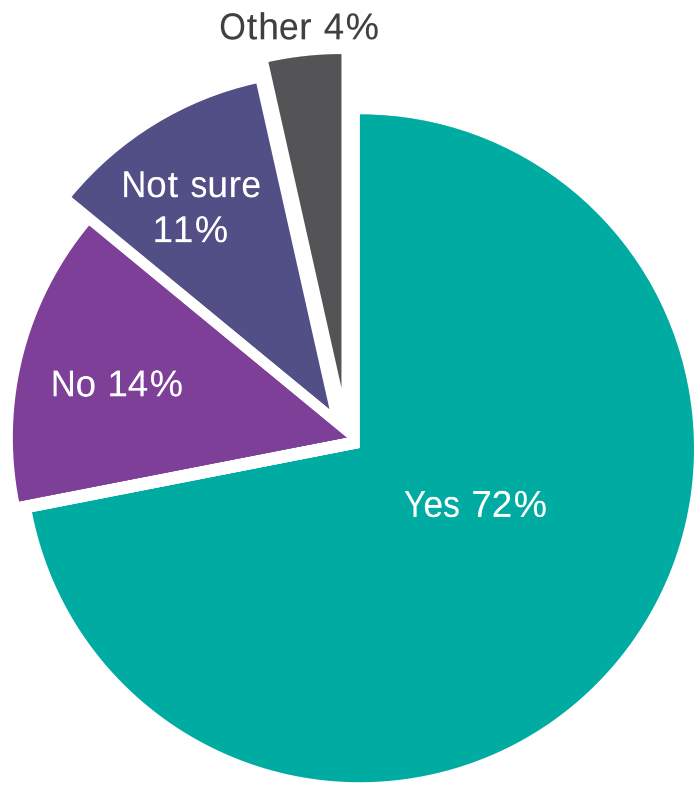


Key question 1 (FIs only):

Is measuring and reporting emissions associated with lending and investments an important business issue?



Key question 2 (FIs only): Is there a significant and long-term need for standardized methodologies/guidance for measuring financed emissions?



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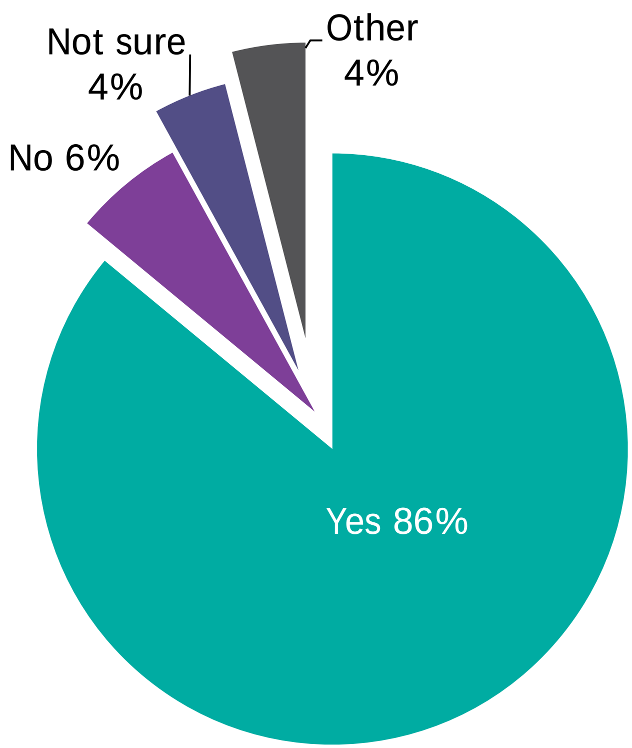
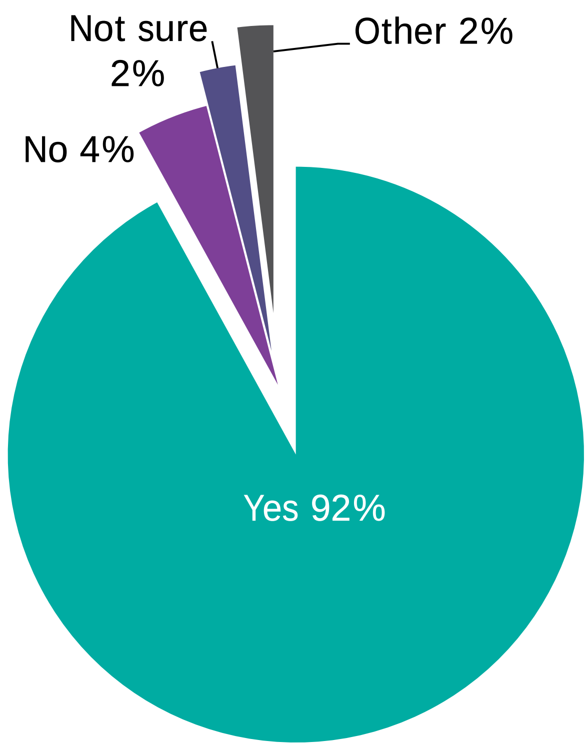
Key question 1 (non-FIs only): Is measuring and reporting emissions associated with lending and investments an important business issue?



Key question 2 (non-FIs only): Is there a significant and long-term need for standardized methodologies/guidance for measuring financed emissions?



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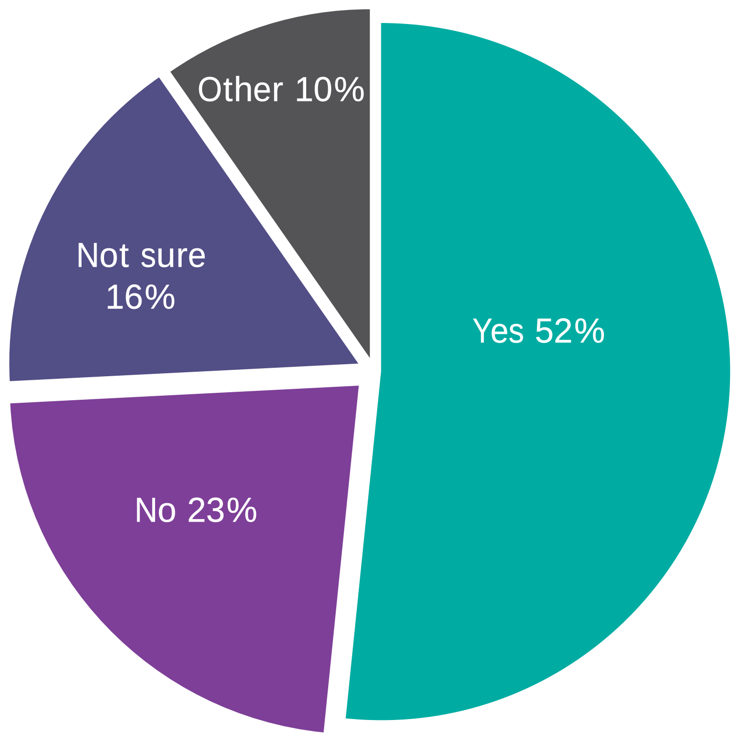
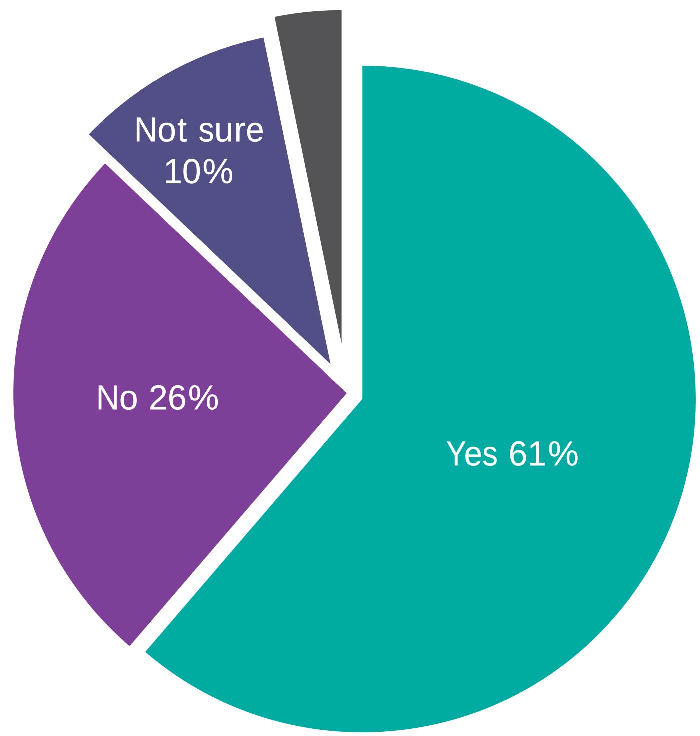
Key question 1 (commercial banks only):

Is measuring and reporting emissions associated with lending and investments an important business issue?

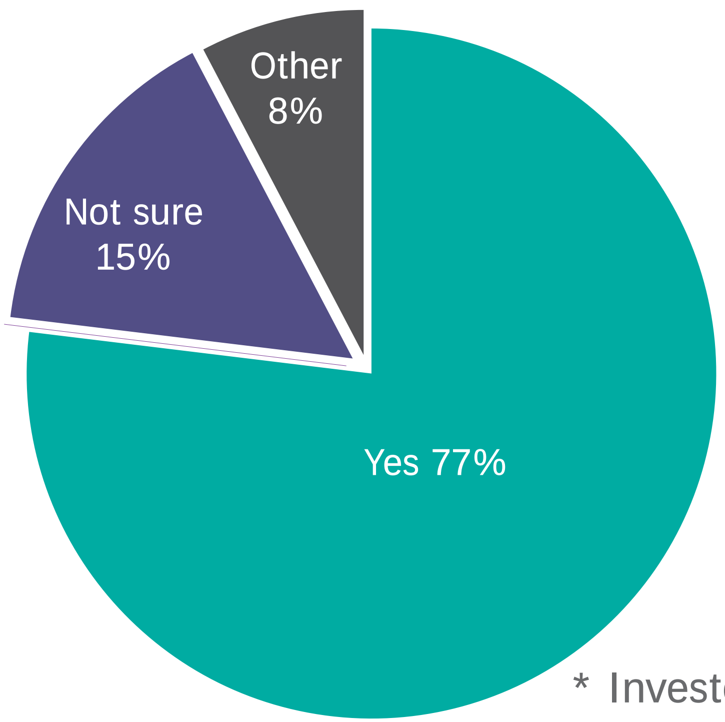


Key question 2 (commercial banks only):

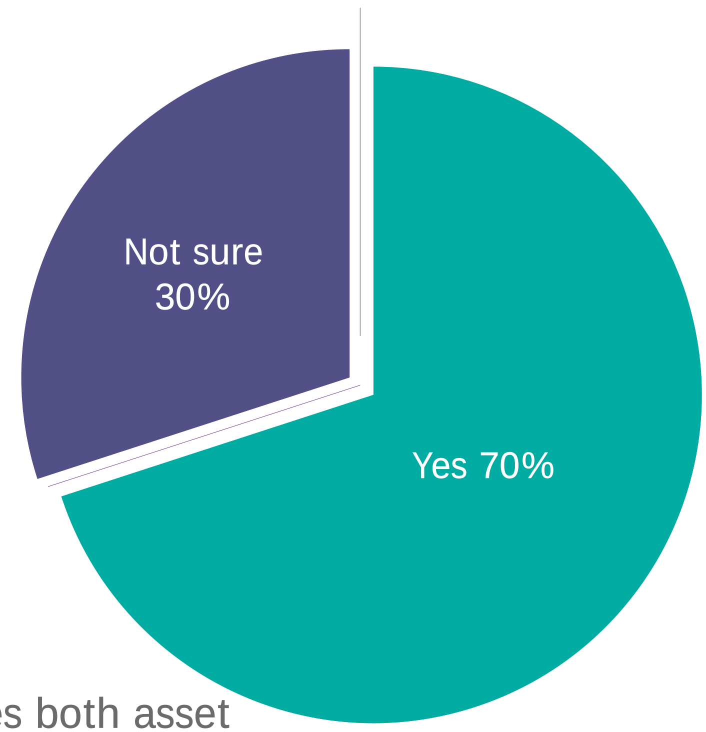
Is there a significant and long-term need for standardized methodologies/guidance for measuring financed emissions?



Key question 1 (investors* only): Is measuring and reporting emissions associated with lending and investments an important business issue?



Key question 2 (investors* only): Is there a significant and long-term need for standardized methodologies/guidance for measuring financed emissions?



* Investors includes both asset managers and asset owners

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Reasons why respondents said this is an important business issue and that there is a need for guidance

- Risk management
- To identify business opportunities and GHG reduction opportunities
- To facilitate target setting/track reductions
- To enhance accountability/transparency (and reputation)
- To enable comparability/benchmarking
- To harmonize proliferating methodologies
- To harmonize information requested of investees/borrowers
- To increase reliability/credibility of the methods
- Guidance would assist financial institutions that are undertaking this complex task
- To prevent “greenwashing”

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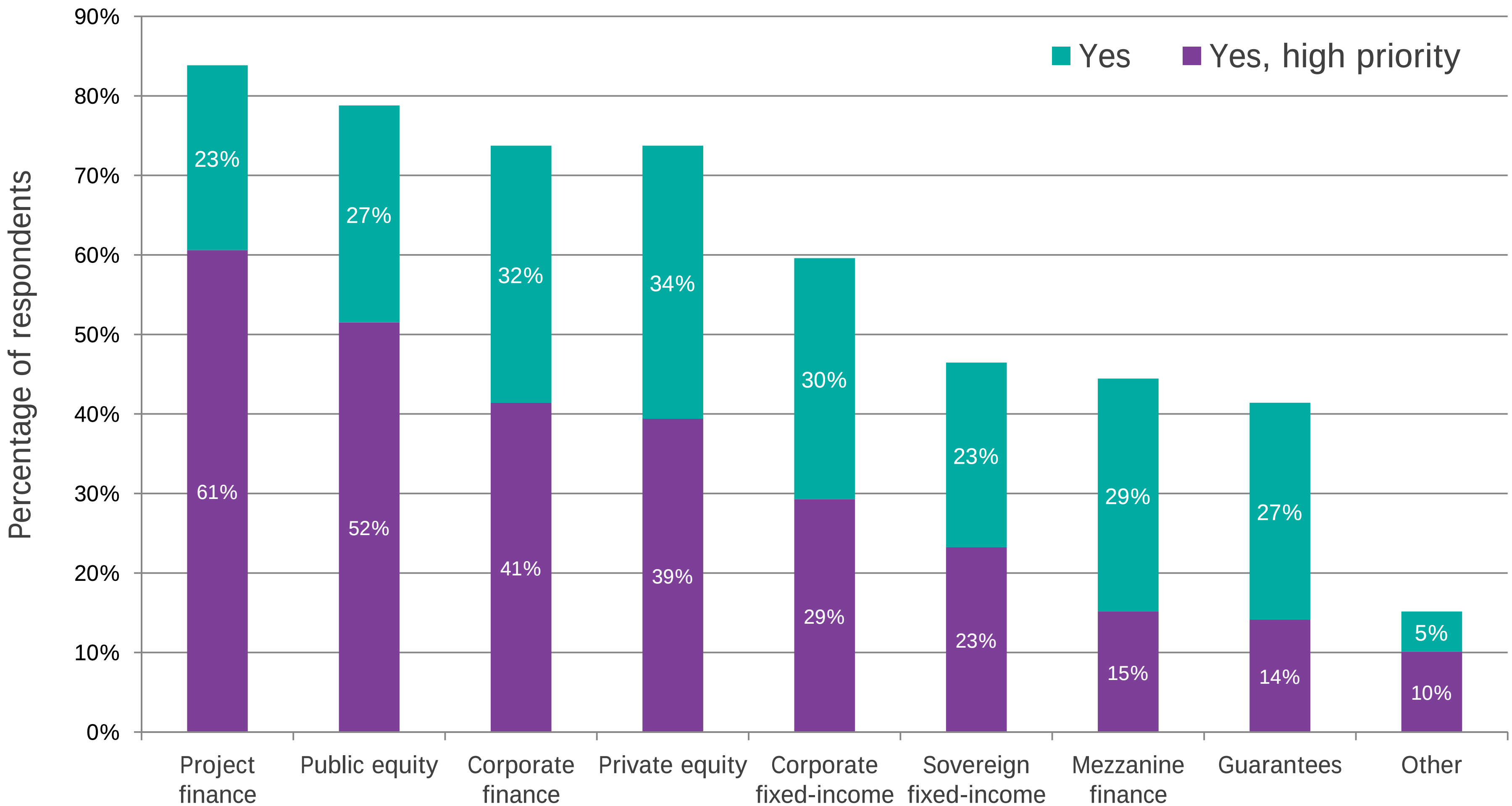
Reasons why respondents said this is not an important business issue and that there is not a need for guidance

- Emissions should be measured and managed at source, not by lenders/investors
- Measuring financed emissions is prohibitively complex and time-intensive
- No link established between measuring financed emissions and risk assessment frameworks
- Financial institutions should focus on other, more useful risk assessments
- Prefer to focus on advising clients on more substantive strategies to reduce emissions

Key question 3: Should the following investment types be included in the guidance? What types should be highest priority?



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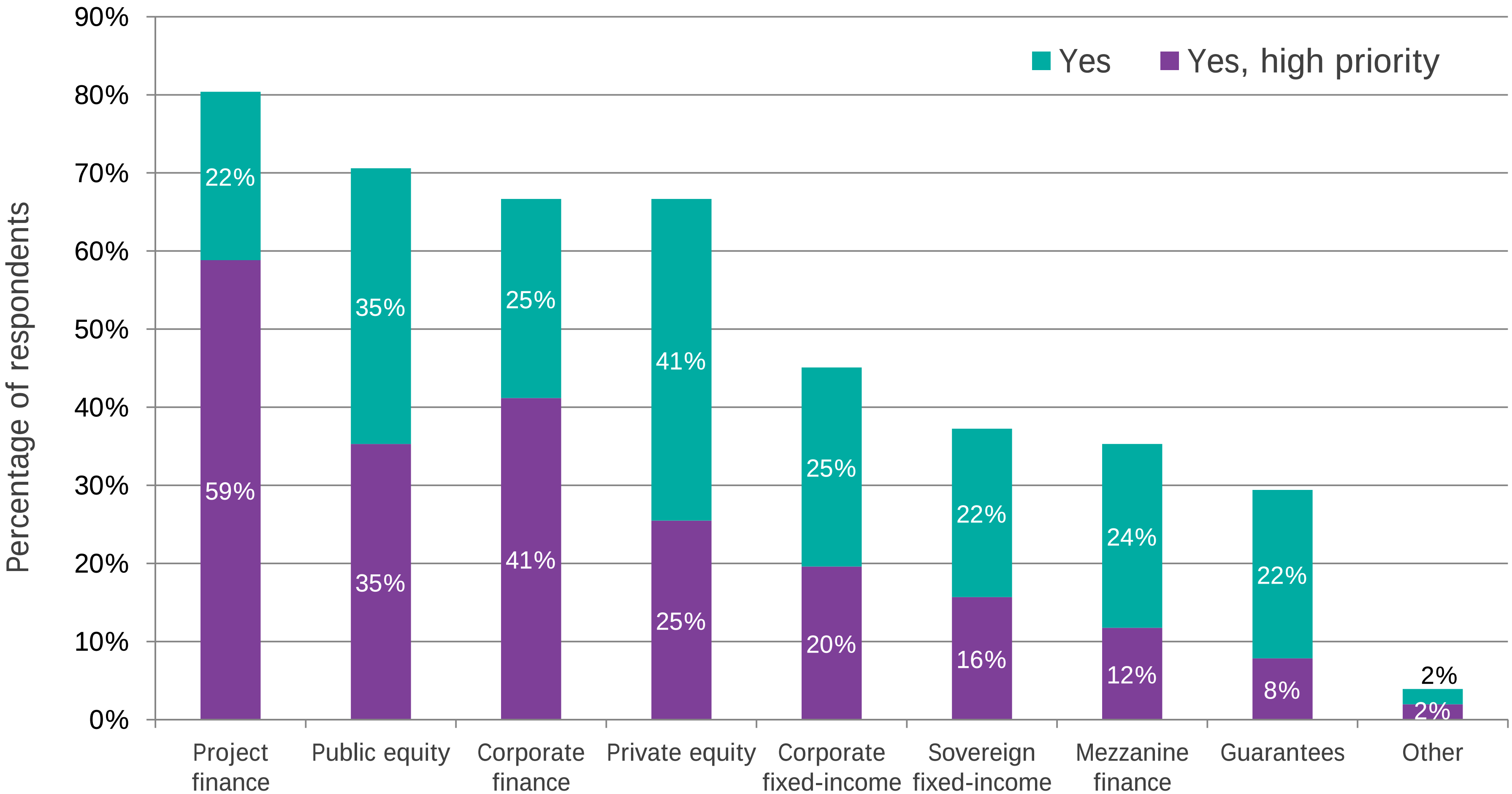
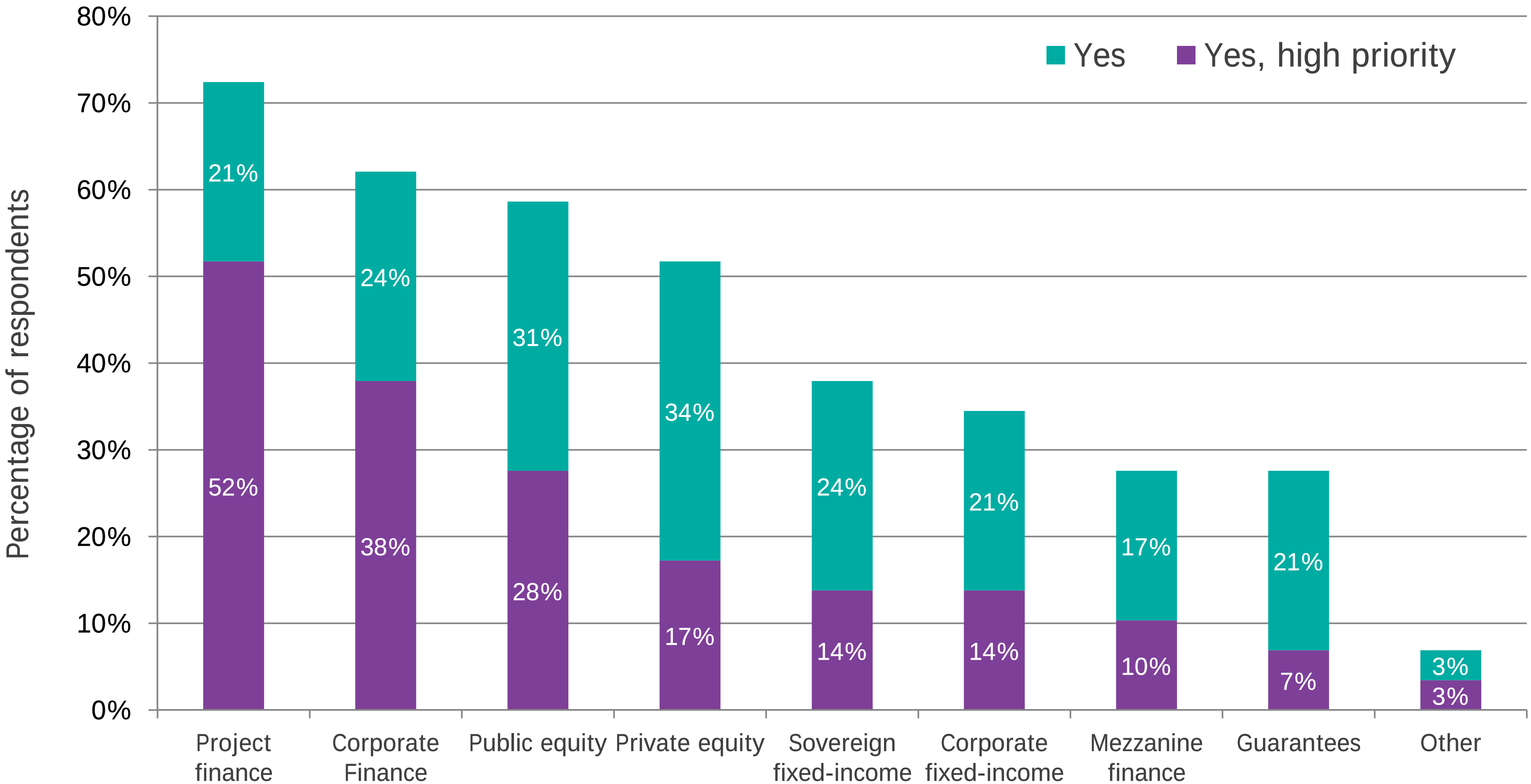
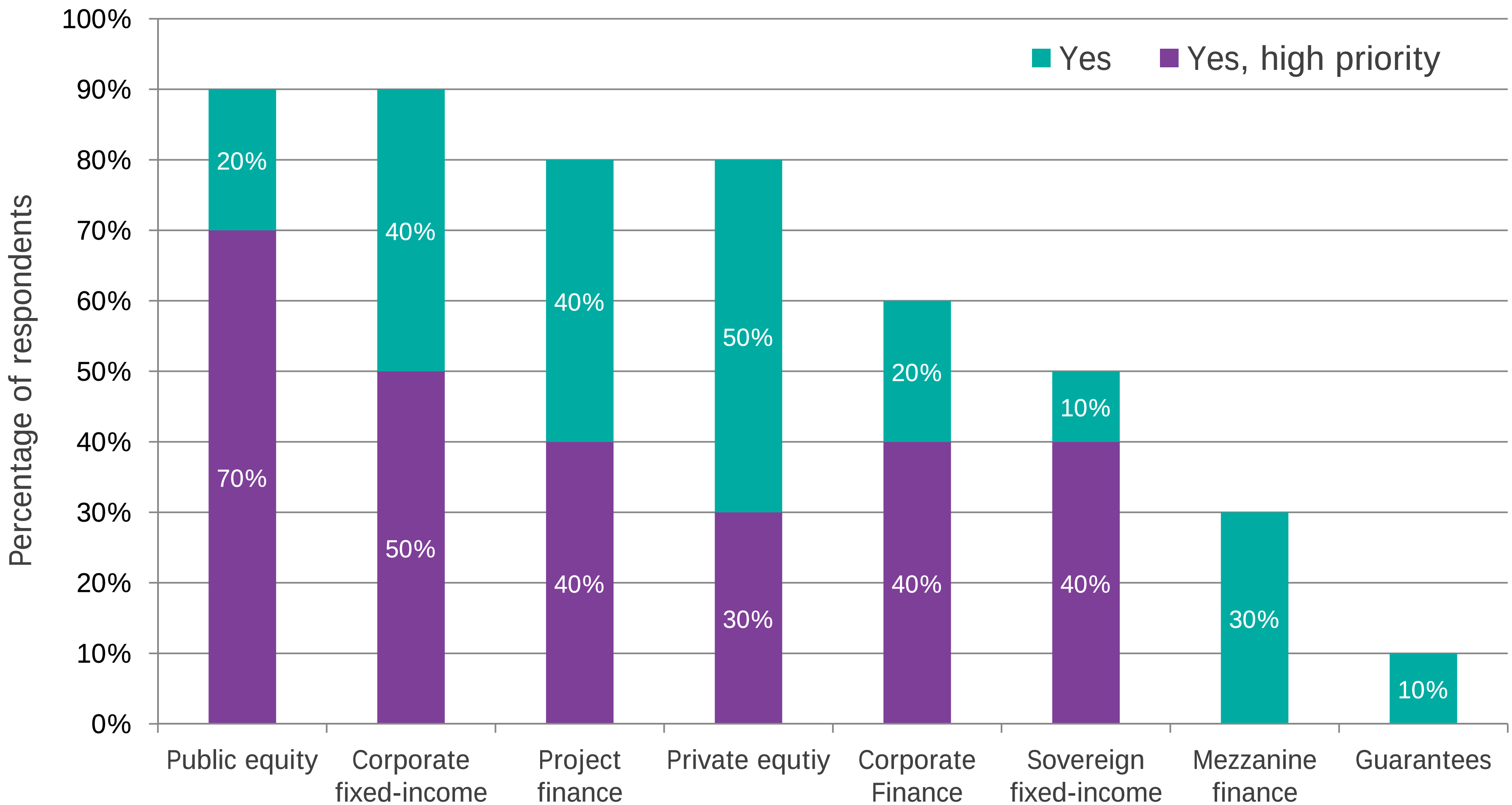
Key question 3 (among all FIs): Should the following investment types be included in the guidance? What types should be highest priority?



Key question 3 (among commercial banks): Should the following investment types be included in the guidance? What types should be highest priority?



Key question 3 (among investors): Should the following investment types be included in the guidance? What types should be highest priority?



Factors considered by respondents when prioritizing lending/investment types:

- Level of risk
- Size of GHG emissions of the asset class
- Size of the market
- Relevance for the financing of companies
- Ability to influence

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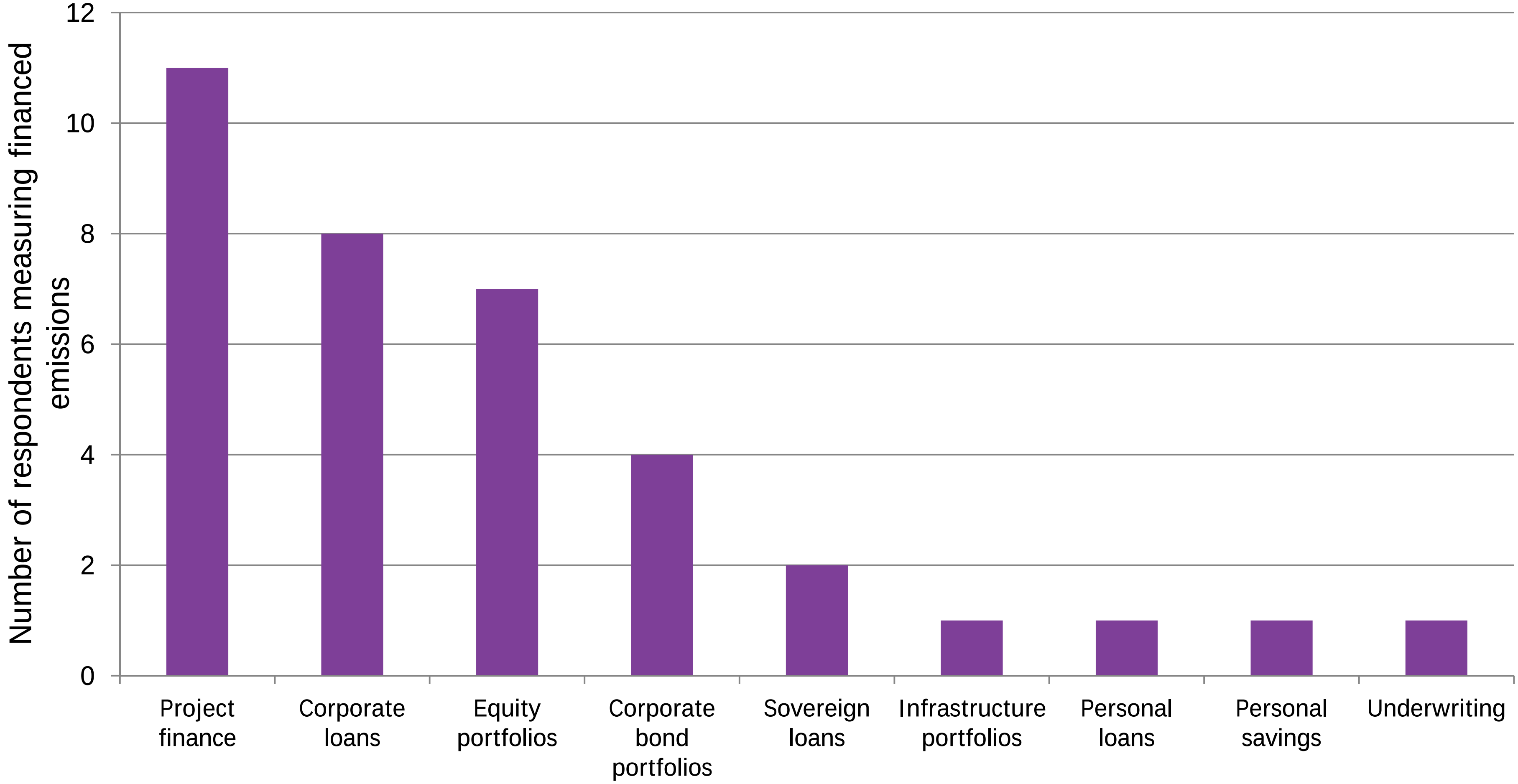
Challenges ahead

- Data availability and quality
- Normalizing emissions to enable comparison of companies
- Time and resources required
- Methodological concerns (e.g., avoiding double counting)
- Protecting client confidentiality
- Ensuring consistency between different financing activities
- Interpretation of results (unclear what the resulting figures mean)
- Lack of senior management buy-in (and resulting lack of any sanctions for non-compliance)

Experiences measuring financed emissions

26 of the respondents said they have measured financed emissions.



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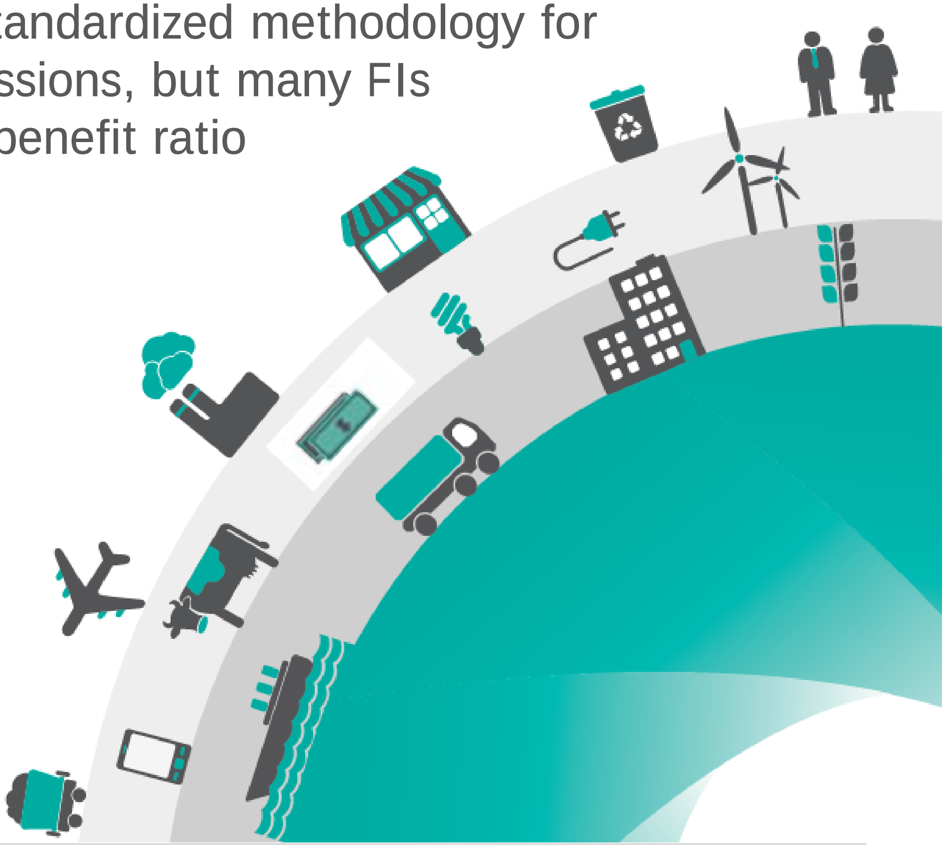
Conclusions

- Broad interest in better understanding, measuring and managing financed emissions
- Broad interest in the availability of a standardized methodology for measuring and reporting financed emissions, but many FIs concerned about complexity and cost-benefit ratio
- Understanding business risk and opportunity is the key driver to measure financed emissions
- Complexity and cost-benefit of measuring emissions varies depending on financing/investment activity



Towards a GHG accounting methodology for the financial sector

Jan Willem van Gelder

GHG Protocol Scoping Workshop

London

19 December 2012

profundo

ECONOMIC RESEARCH

Who we are

- Profundo is a research consultancy dedicated to sustainability:
  - Based in Amsterdam
  - 10 staff persons
- Research themes:
  - International commodity chains
  - Financial sector
  - Corporate Social Responsibility
- Global client base:
  - NGOs
  - Financial institutions
  - Governments and research institutes

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Research experience

- Many international studies comparing the involvement of major banks and investors in the financing of energy sectors:
  - Nuclear energy
  - Tar sands
  - Biofuels
  - Coal mining and coal-fired power
  - Renewable energy
- Financing of largest global companies (listed and non-listed)
- Assess which share of finance for the energy technology:
  - For project finance: 100%
  - For corporate loans, issuances, share- and bondholdings: % of company's assets engaged in selected energy type

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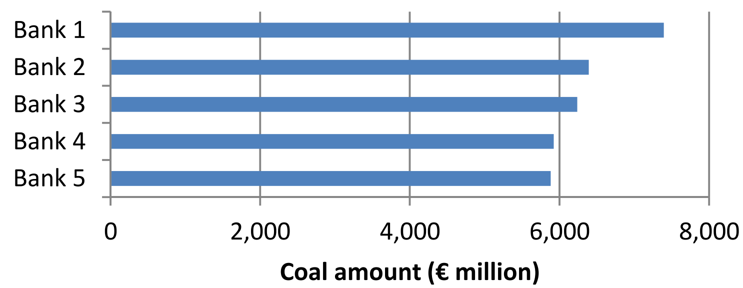
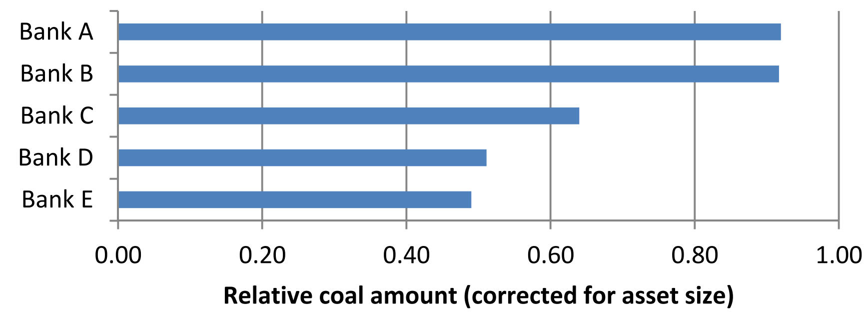
Separate rankings per finance type

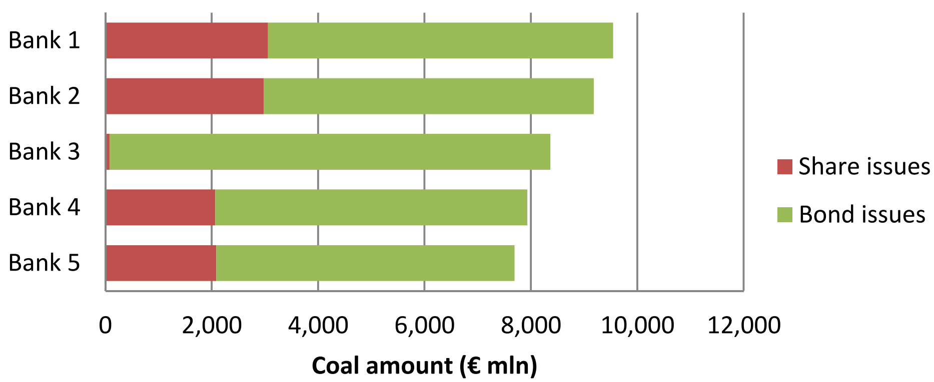
Largest providers of loans and project finance, January 2005-2012 (absolute amounts)



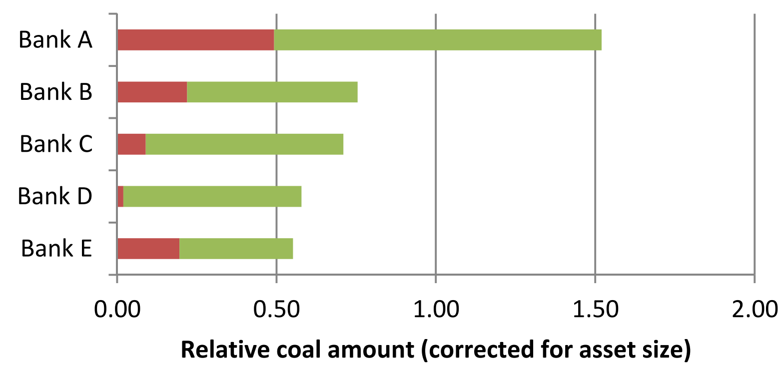
Largest providers of loans and project finance, January 2005-2012 (relative amounts)



Largest share- and bond underwriters, Jan 2005-12 (absolute amounts)



Largest share- and bond underwriters, Jan 2005-12 (relative amounts)



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Challenges for GHG methodology

1. Methodology should include financing of non-listed companies
   - Large part of expansion in coal, biofuel, etc. is non-listed
   - But GHG data lacking for most non-listed companies
2. How to distribute responsibility for a company's GHG emissions among its financiers?
   - Some methodologies distribute over shareholders only
   - Others distribute over shareholders + creditors = balance sheet
   - But responsibilities and maturities are different
   - And: underwriting, guarantees, financial advisory services are of crucial importance = off balance sheet

Challenges for GHG methodology

3. Comparing GHG footprints of financial institutions to their peers needs:
   - Either separate rankings for
     1. Loans, credits and proprietary investments (on balance sheet)
     2. Underwriting and advisory services
     3. Asset management
   - Or a methodology which can consolidate GHG emissions caused by balance sheet financing and off balance sheet activities
4. Improved reporting is key
   - (non-listed) companies need to report on GHG emissions
   - financial institutions need to segment investments in homogenous sectors = more detailed than Pillar 3 of BCA II

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Thank you!

More information:

Jan Willem van Gelder

vangelder@profundo.nl

Measuring GHG emissions associated with lending and investments

December 19th, 2012

Responsibility versus risk based approaches

Existing methodologies - responsibility

Responsibility
Recognises total capital

Principle

- **Allocate holding GHG emissions based on total capital**

$$\frac{\text{bond or equity holding}}{\text{equity + gross debt}}$$

Methodology

- Annual Scope 1 and Scope 2 GHG emissions of company
- Can be extended to include upstream and downstream impacts
- Allocate to investment; aggregate for portfolios

Benefits

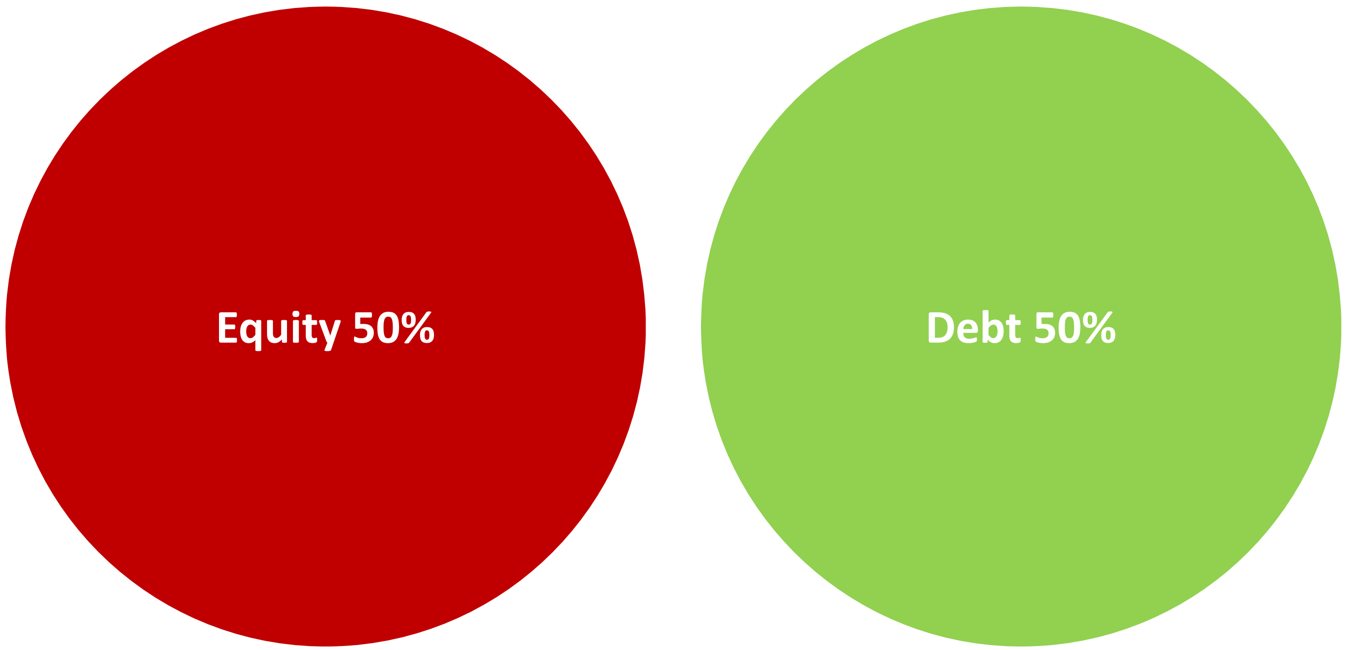
- Same method applies to all asset classes
- Simple to complete
- Incorporates majority of responsibility allocation in most cases

Limitations

- Does not reflect relative value and risk of a unit of different capital
- Double counting if upstream included

Existing methodologies - responsibility

Responsibility
Risk weighting assets - recognises differential capital value



Existing methodologies – risk

Risk
Mainstreaming carbon appraisal

Principle

- Understanding carbon risk will create widespread adoption

Methodology

- Applies existing GHG Protocol
- Includes upstream and downstream impacts
- Calculates the profits at risk from carbon price scenarios
- Identifies value at risk using existing financial analysis techniques

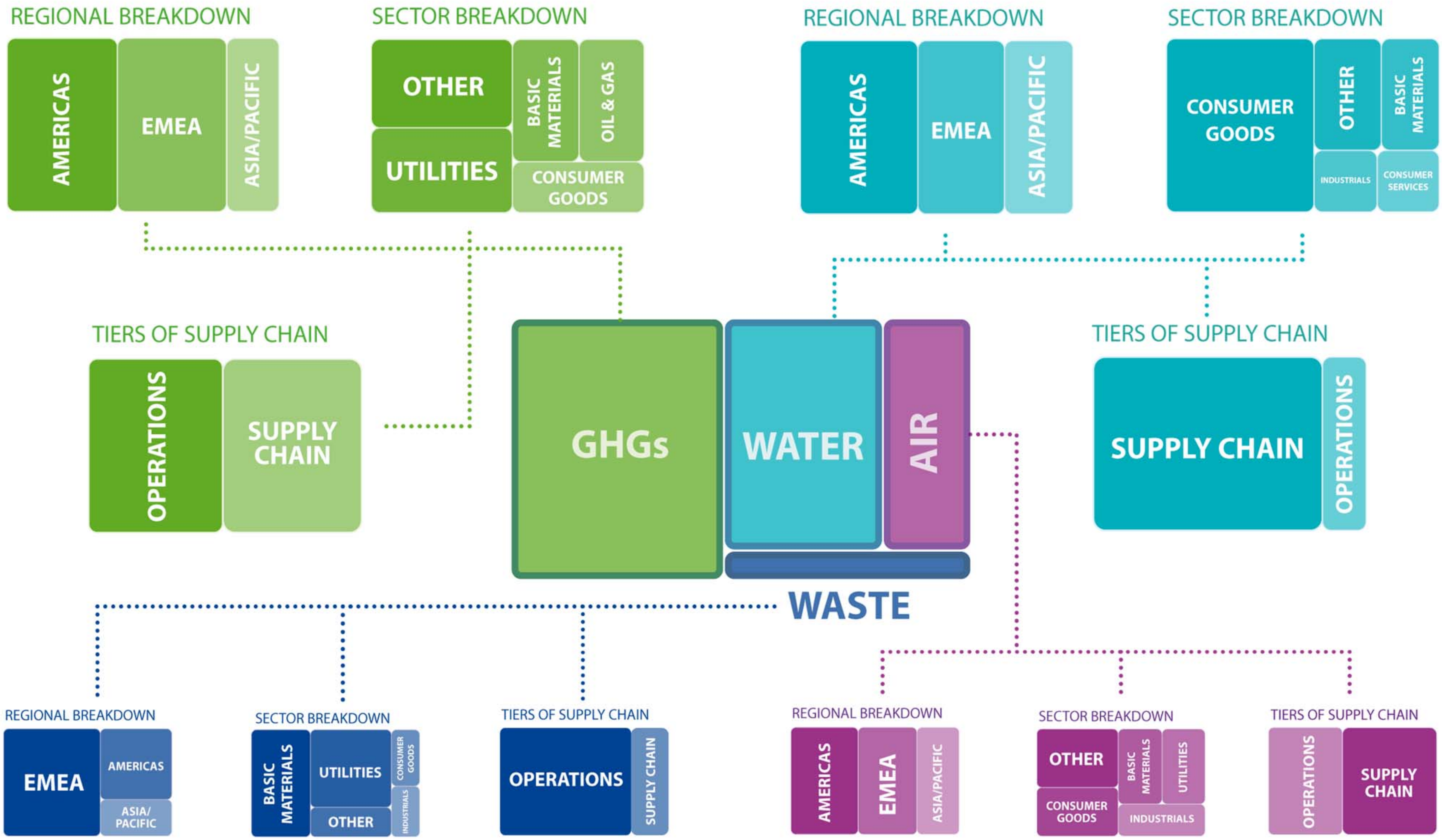
Benefits

- Consistent with mainstream financial analysis
- Universally relevant to capital markets
- Allows comparison with other natural capital risk

Limitations

- Requires expectations of a meaningful carbon price

RISK MAP
MSCI WORLD INDEX



SOURCE: TRUCOST

TRUCOST.COM

WRI GHG Protocol UNEP FI WBCSD

SCOPING WORKSHOP

Methodology for assessing GHG emissions induced by financing and investing activities – P9XCA.

Developed by Finance & Sustainable Development Chair – Paris Dauphine/Ecole Polytechnique / Antoine ROSE.

Application to a FI portfolio. (Crédit Agricole)

Jérôme Courcier **CSR Officer Crédit Agricole SA**

LONDON December 19, 2012.

CRÉDIT AGRICOLE
CORPORATE & INVESTMENT BANK

What objectives when quantifying ?

- To assess an order of magnitude of the emissions induced by one FI's portfolio:
  - The estimation of an order of magnitude for the global portfolio has been preferred to more precise figures for a small part of it. Example : the project financing portfolio.
  - Questioning, if necessary, approaches based on the aggregation of emissions of projects/assets – «bottom-up approach».
- To avoid all kind of double accounting:
  - The values should be additives.
  - To protect the estimation of the order of magnitude from an obvious bias.
- Transparency:
  - To favor official, public, free and open access databases, and to break with the use of databases of consultancy firms (« black boxes »).
- Clarity and simplicity:
  - Choice of a methodology as simple as possible to facilitate its understanding.
- To compare to calculations from others:
  - The emissions are allocated on the base of the total funding necessary (debts + equity).

Methodological cornerstones.

A « top-down » approach: thinking macro

- In accordance with the objective of assessing a first order of magnitude and of avoiding all kind of n-accounting, the choice of a « top-down » approach was made. It is based on the fairest and most equitable sharing of global GHG emissions measured by national inventories.

Use of public databases consistent with a portfolio approach

- The GHG national inventories are assembled by the United Nation Framework Convention on Climate Change (UNFCCC).
- The economic data come from OECD and UN organizations.

A simple tool easy to handle

The emissions are allocated to the production rather than to the consumption

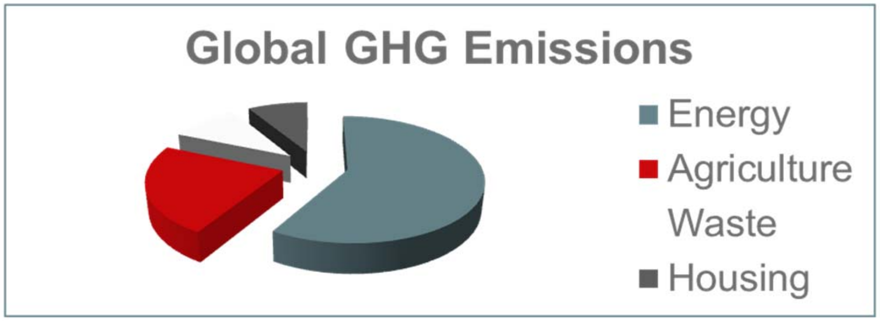
- CIB's and risk point of view
- Consequence: No emission induced by financing consumption

The Debts + Equity allocation convention

- The emissions are distributed among the debt and equity owners.
- Consequence: « Cash » angle (Bank commitments, i.e. gross outstanding excluding guarantees)

A « top-down » approach: basics and principles.

8 macro-sectors x 15 geographic zones



Global matrix of GHG emissions induced by FI's portfolio (Macro-sectors x Geographic)

	Agriculture & Land Use	Construction & Housing	Energy	Industry	Transport	Services	Waste Management	Public administration	Other
France									
USA									
Western Europe									
Asia									
UK									
Middle East									

Bank Commitments (gross outstanding excluding guarantees)

A « top-down » approach: basics and principles.

The methodology applies the rule of the share of financing. If a FI finances x% of an activity, the methodology matches x% of emissions of this activity to this financing.

The rule of the share of financing: for a sector s and a country c:

$$Induced.Emissions(s,c) = Global.Emissions(s,c)\frac{Bank.Commitments(s,c)}{Global.Financing(s,c)}$$

Source data:

- **Global emissions (s,c)** : data from the National GHG Inventories (classification by emissions sources).
- **Bank Commitments (s,c)** : data from internal risk management unit (classification by activities).
- **Global Financing (s,c)** : a proxy has been made: Debt + Equity.

  $$Global.Financing(s,c) = Debt(s,c) + Equity(s,c) = \frac{Debt + Equity}{Added.Value}(s,c) \times Added.Value(s,c)$$

  Data from BACH for the Debt + Equity/Added Value ratios and from OECD/UNO for the Added Value (classification by activities).
- Heterogeneous data by definition : the main difficulty rests in **the matching of data with different nomenclatures**. Extrapolations and approximations are required particularly to estimate the Bank Commitments/Global Financing ratio (market share of the FI), but better quality than those used by the existing bottom-up approaches.

CONCLUSION: limits and benefits.

- Sensitivity to the quality of data: the case of non OECD countries.
- The calculation is based on a small number of macro-sectors and geographies: direct consequence of different nomenclatures.
- The (sector, country) couples group together activities with carbon intensities that may differ. Example : the macro-sector « Energy » contains all « emitting » and « non-emitting » energy sources (coal as well as nuclear) because the economic nomenclatures (NACE) cannot differentiate the production of electricity according the sources of energy.
- The banking data refer each corporate to only one macro-sector even if it is composed by different activities. Example : multinational and multiple business corporations.
- The total level of commitments to one corporate is allocated to a single country, while the country of risk can be different from the country of emissions. Example : a corporate loan to Total is classified in the geographical zone « France », while the majority of Total activities (particularly oil extraction that emits high levels of GHG) is located outside France.

- Robust estimations for OECD countries where most of the FI's activity is.
- Even with a low resolution, a first cartography of induced emissions is possible.
- This « macro » approach can be supplemented by more focused approaches (on sectors or countries).
- The estimations are bounded by the global emissions, by construction.
- The results are fully additives, avoiding by construction all kind of multiple accounting.
- A first global macroscopic view of FI's portfolio: « GDP » type.
- A good approximation given accounting systems that are inappropriate to the GHG issue (NACE, ISIC/CITI…).

ASN BANK

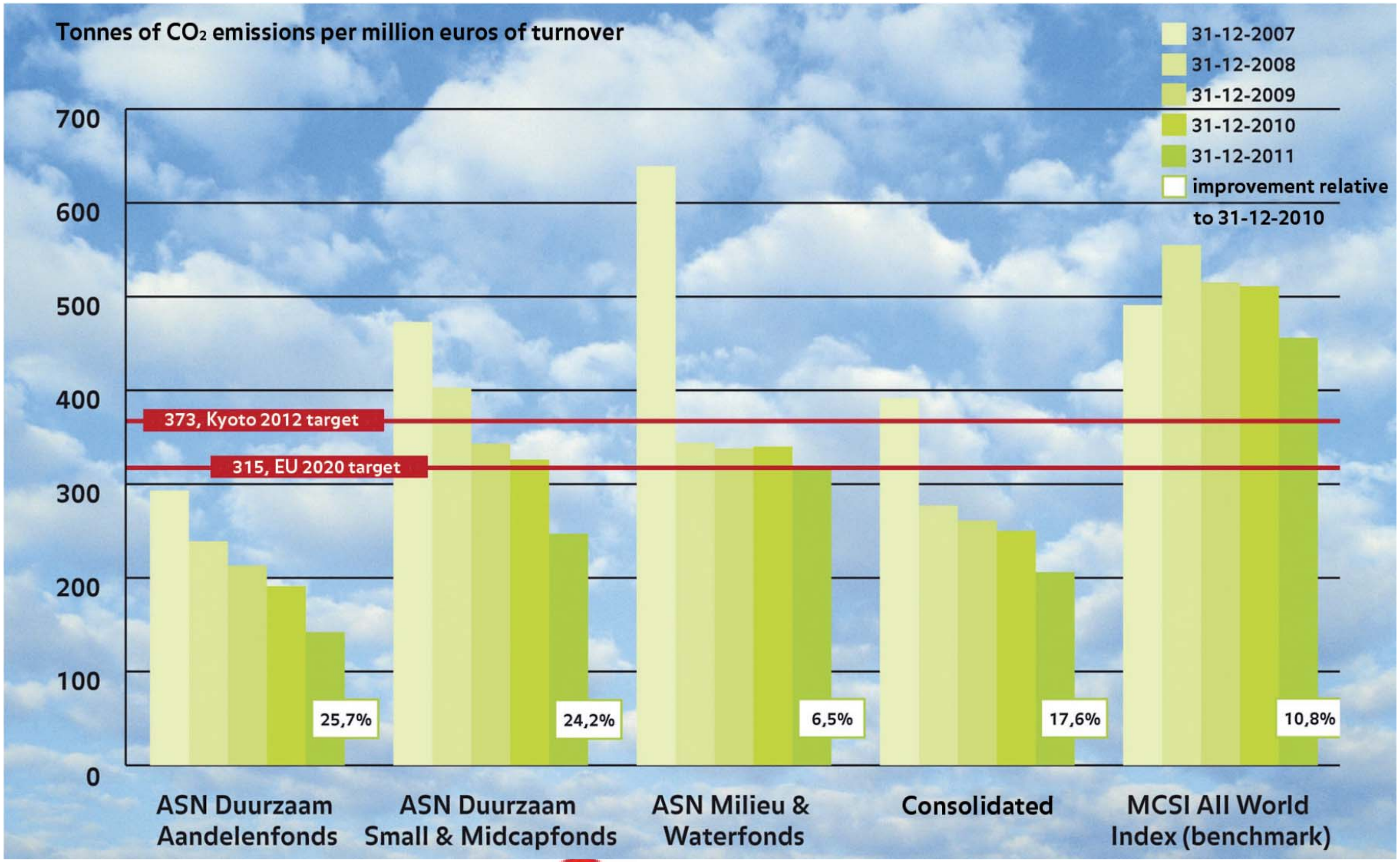
VOOR DE WERELD VAN MORGEN

Intro

- ASN Bank; Dutch sustainable retail bank
- Founded 1960, almost 600.000 clients
- 11 billion Euro aum
- Products; savings and mutual funds
- Trying to measure scope 3 GHG since 2007

ASN BANK
VOOR DE WERELD VAN MORGEN

Carbon footprint ASN Equity funds



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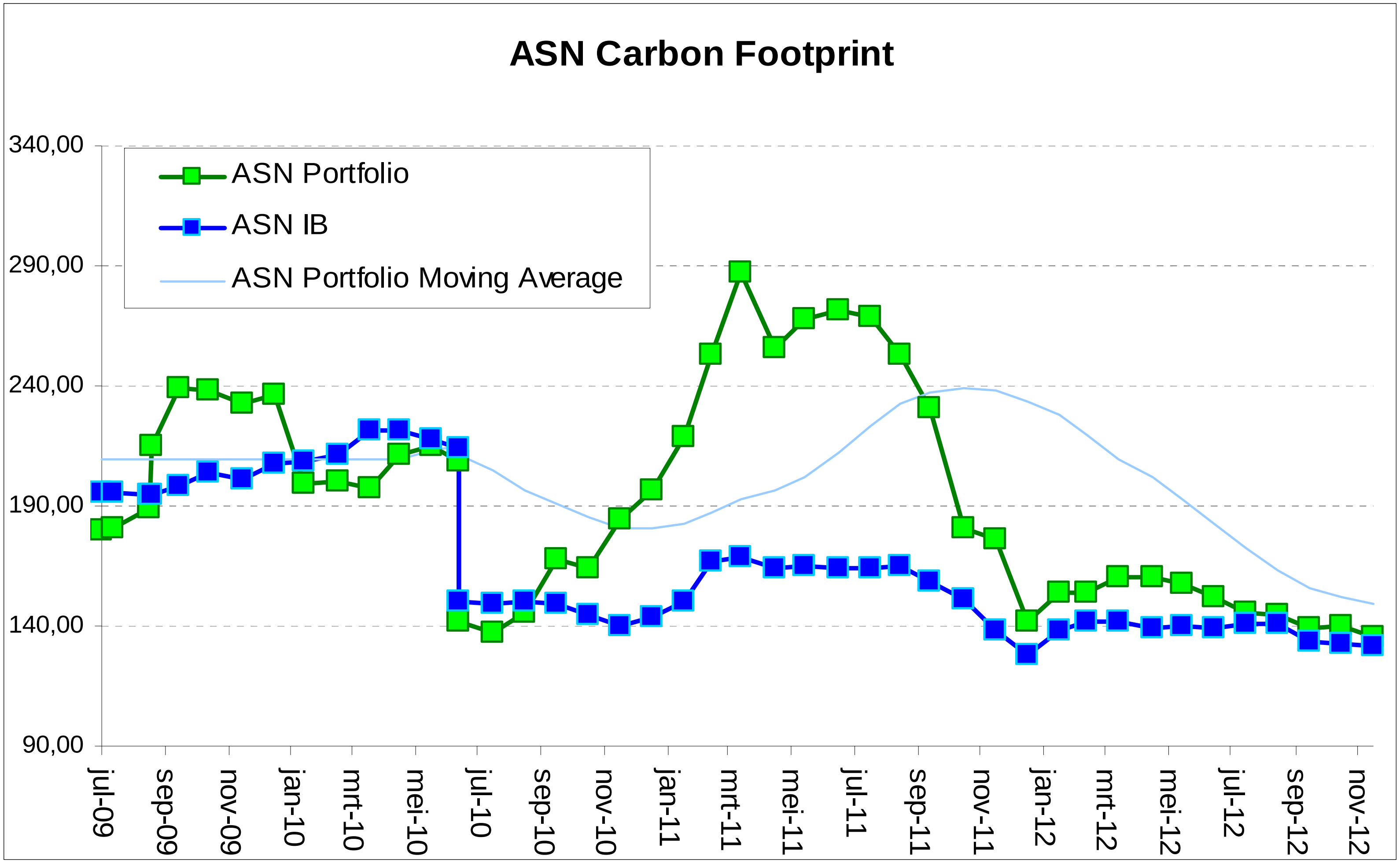
Carbon Footprint ASN sust inv fund



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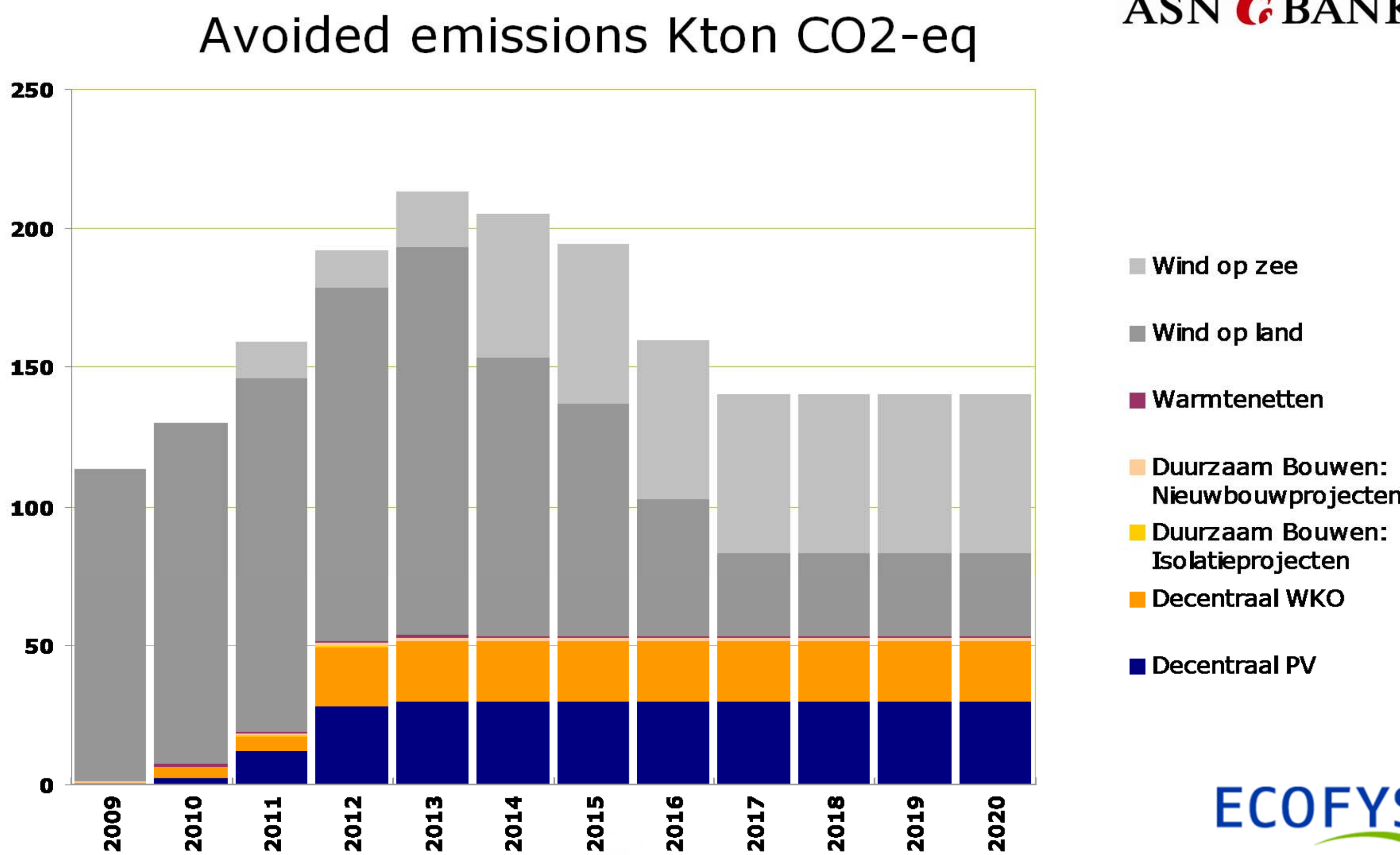
Debt; Project finance



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Debt; state bonds

Rang	Country	Total score	HR	Climate	Biodiv
1	**Austria**	**6.55**	**5.22**	**7.98**	**7.83**
2	**Denmark**	**6.25**	**7.08**	**6.01**	**6.20**
3	**Portugal**	**5.11**	**3.60**	**8.60**	**5.63**
4	**Sweden**	**5.11**	**6.71**	**9.05**	**2.73**
5	**Germany**	**5.05**	**5.18**	**3.87**	**8.29**
6	**Netherlands**	**4.74**	**5.99**	**3.07**	**7.24**
7	**Ireland**	**4.47**	**5.86**	**3.52**	**5.20**
8	**Slovenia**	**4.38**	**3.16**	**5.82**	**5.50**
9	**Spain**	**4.02**	**2.65**	**6.39**	**4.87**
10	**France**	**3.70**	**3.37**	**4.53**	**3.80**
11	**Belgium**	**3.64**	**4.39**	**2.79**	**4.70**
12	**Italy**	**3.43**	**1.06**	**5.14**	**7.13**
13	*Malta*	*3.09*	3.93	3.33	2.64
14	*Luxembourg*	*2.96*	8.79	0.17	4.23
15	*Lithuania*	*2.84*	1.13	4.02	5.59
16	*Hungary*	*2.83*	1.36	3.72	5.49
17	*Czech R.*	*2.59*	2.10	2.56	4.12
18	*Cyprus*	*2.20*	1.53	2.72	3.16

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Debt and scope 3 ghg

Choices to make;

- State bonds; country or government?
- Mortages; building or use?
- Adjustments for pay off ratio?
- The real estate company or its real estate?

Choices made;

- Proportional share
- Preference for standardised methodology

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European Bank for Reconstruction and Development

EBRD: GHG Assessment Outcomes and Lessons

Martin McKee
Principal Environmental Adviser

Wednesday, 19 December

EBRD’s Approach

European Bank
for Reconstruction and Development

1: Why?

- Started in 2003
- Aim: to understand our impacts and provide accountability
- Audience: shareholders, investors, management, civil society, peers

3: How?

- Data from EIAs, Energy Audits, in-house calculations
- Consultancy support and verification (but not audited)
- Results published in EBRD Sustainability Report

2: What?

- All projects are screened for significant GHGs (± 20 kT CO2e)
- Estimate of annual emissions once project is complete and operational.
- Project scope 1 and 2
- Net emissions = post-investment minus pre-investment
- Greenfield baseline = zero
- RE assumed to substitute at grid factor
- Excludes project scope 3, construction emissions and Financial Intermediaries

Outcomes

European Bank
for Reconstruction and Development

GHG Assessment for 2012*

	Number of projects assessed	GHG impact (million tonnes CO_2e/year)
Renewable energy	13	-1.6
Energy efficiency	13	-1.4
Energy efficiency with capacity expansion	3	-1.5
Renewable energy and energy efficiency funds and credit lines	13	-1.8
Greenfield projects	2	+0.2
Total	**44**	**-6.1**

*Out of 380 signed projects

A changing portfolio:

- *Sustainable Energy Initiative: €8.8 billion, 46 million tonnes CO2 reduction since 2006*
- *RE and EE 29% of business volume in 2011*
- *Fewer large greenfield (CO2 emitting) projects*

EBRD investments forecast to be GHG-neutral or better in each of the last 6 years.

Lessons

- A positive experience for EBRD
- Has it contributed to increased focus on climate change? - Probably
- Be clear about what you want to achieve – it determines resources, methodology and accuracy
- It's an estimate – acknowledge data limitations and be transparent about assumptions
- 80/20 rule – portfolio results are dominated by a small number of high-impact projects
- Publishing numbers satisfies most stakeholders – no-one has seriously questioned EBRD's methodology or results (yet…)
- Be clear and consistent about project boundaries (esp. replacement projects and capacity expansions)
- Challenges – up-stream and down-stream emissions, Financial Intermediaries, transport infrastructure
- Question: is it valid to net off emission increases against savings?

Next Steps

- Monitoring, Reporting and Verification
  - Do our estimates match reality?
  - Work in progress…

- Harmonising Approaches
  - *IFI Framework for a Harmonised Approach to Greenhouse Gas Accounting*
  - High level agreement on principles. Flexibility for differing mandates
  - Agreed November 2012. Nine signatories so far. More expected.

Links

IFI Framework:
http://climatechange.worldbank.org/sites/default/files/IFI_Framework_for_Harmonized_Approach%20to_Greenhouse_Gas_Accounting.pdf

EBRD Methodology: www.ebrd.com/downloads/about/sustainability/ghgguide.pdf

Sustainability Report: www.ebrd.com/pages/digital-publications/flagships/sr11/index.html

Sustainable Energy Initiative: www.ebrd.com/pages/sector/energyefficiency.shtml

20 December 2012

UNEP SEMINAR

Bank of America Merrill Lynch

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Carbon Portfolio Analytics

Issues to address

Access to data

Measuring the real performance vs the benchmark

Accuracy in a context of low disclosure

From past Emissions to… Forecasts?

Product ID

Refer to important disclosures on page 10-13.

Carbon Audit:
Overview of 2011

- **2011: what we did for investors on request: developing an alternative way of "doing SRI"**

1) **Building a carbon consensus (scope 1 / 2 / 3)**
   - Based on data available (***Trucost, Inrate, Bloomberg/CDP, Thomson Reuters DS/Asset4, CO2 Benchmark***)

2) **Analysing of equity portfolios and companies beating their respective index/sector averages**

3) **Analysis of the source of under / out performance in terms of carbon exposure**
   - Merits of sector allocation and stockpicking

Bank of America Merrill Lynch

29 January 2013

Carbon Audit: CLIENT XYZ PF

Stock Performance vs. the sector

- **Stocks selected by CLIENT XYZ PF clearly outperform their peers!**

# and Proportion of rated securities better than sector	# Securities better	# of Securities covered	% of stocks covered better than sector	% MV above benchmark	out of % MV covered	% of MV covered better than sector
EBIT - scope1	39	52	75%	56%	73%	77%
EBIT - scope2	40	52	77%	58%	73%	79%
EBIT - scope3 upstream	40	53	75%	56%	73%	77%
EBIT - scope3 downstream	19	25	76%	27%	35%	76%
EBIT - scope1+2	40	52	77%	58%	73%	79%
EBIT - Total	42	52	81%	61%	73%	83%
NTA - scope1	44	53	83%	61%	72%	84%
NTA - scope2	44	53	83%	61%	72%	84%
NTA - scope3 upstream	47	54	87%	63%	72%	88%
NTA - scope3 downstream	22	25	88%	30%	34%	88%
NTA - scope1+2	43	53	81%	59%	72%	82%
NTA - Total	50	53	94%	69%	72%	96%
MV - scope1	38	54	70%	52%	73%	71%
MV - scope2	41	54	76%	56%	73%	77%
MV - scope3 upstream	41	55	75%	55%	73%	75%
MV - scope3 downstream	19	26	73%	25%	35%	72%
MV - scope1+2	38	54	70%	52%	73%	71%
MV - Total	44	54	81%	61%	73%	83%

Carbon Audit: CLIENT XYZ PF

Performance attribution / contribution analysis

- **One of the main criticisms of carbon portfolio audits is that some portfolios may have a significant different sector allocation than their benchmark, which may help (a lot!) to deliver better carbon footprint**

- **Results in the sections above clearly indicate that stocks selected in CLIENT XYZ PF tend to beat their relative sector. But that is not enough from our perspective.**

- **The analysis must be complemented by further analysis both of**
  - the total performance of the portfolio, in comparison with the benchmark, and
  - the ability of the portfolio manager to select the most carbon-efficient stocks in each sector

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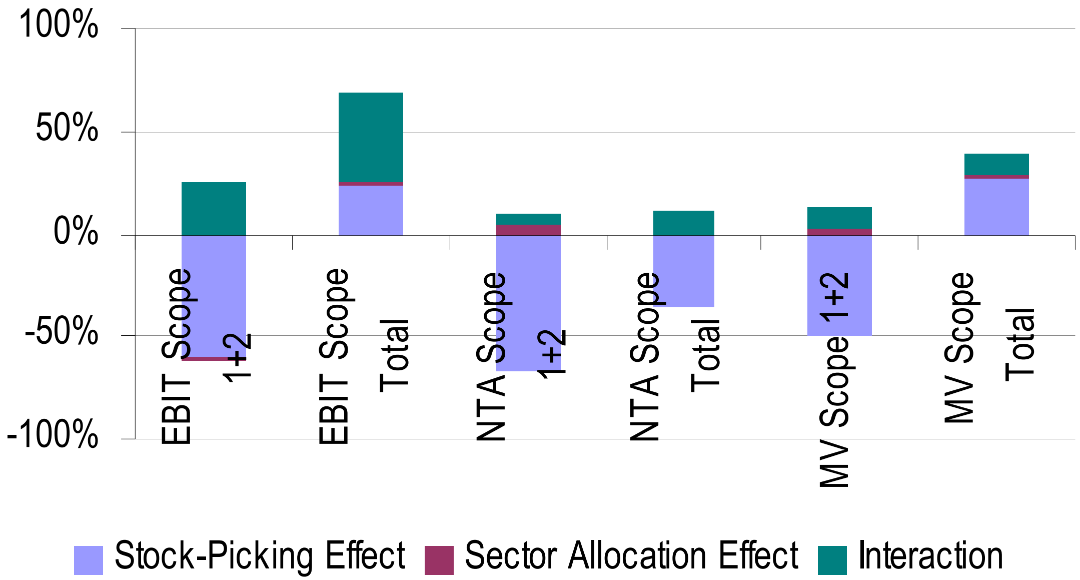
29 January 2013

Carbon Audit: CLIENT XYZ PF

CO2 performance attribution/contribution

- **Summary:**
  - Whatever the metrics, results are consistent and robust, with two cases for which the portfolio has emitted more than the benchmark (EBIT scope total and MV scope total)
  - Consistent positive stock-picking effect elsewhere

Relative Performance CLIENT XYZ PF vs. Benchmark



Source: BofA Merrill Lynch Global Research, Trucost, Inrate, CO2Benchmark, Bloomberg, CDP, TR Asset4

Key issue is remaining: accuracy

- Despite our best efforts, how can we be sure that the figures we calculate are « acceptable » and « resasonable »?
- How investors can trust the methodologies, carbon footprints and estimates arising on the market?
- Is there a method to test out the accuracy of estimates?

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Portfolio Carbon Analytics in a context of low disclosure

- Growing appetite for ESG analytics applied to portfolio, especially on Carbon
- Carbon: Level of disclosure still significantly low
- Some noticeable differences across indices and sectors, but… still

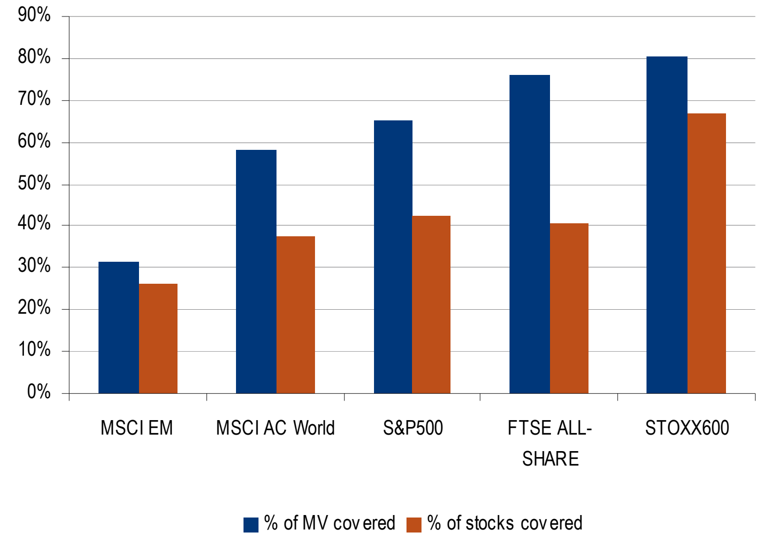
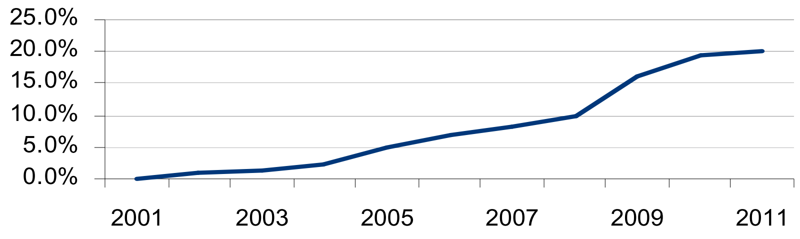
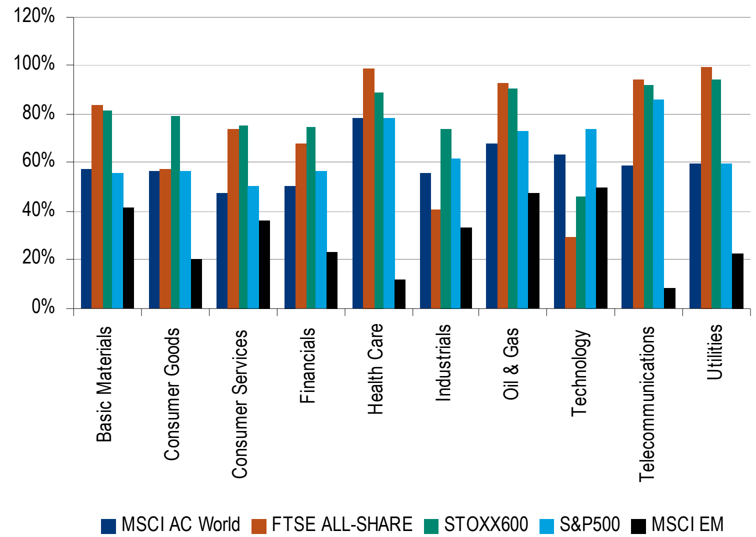


Chart 1: Evolution of listed company disclosure on CO2



Source: datastream/Asset4, on a same sample of 7,028 listed global companies (low level on first years might be due to lack of collecting instead of lack of disclosing)



Is it already reasonably feasible to measure a portfolio carbon footprint?

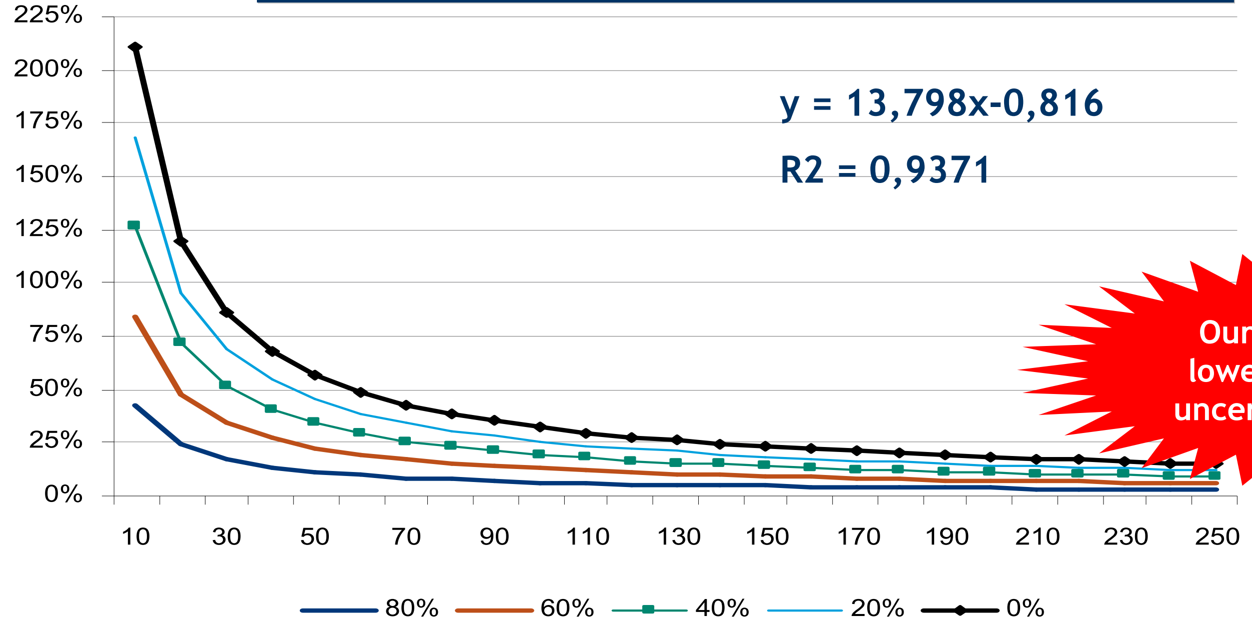
☑ Calculating the maximal level of uncertainty

ICB-based peer groups

- ☑ **Replacing missing data by ICB sub-sector peer group averages as a proxy of CO2 estimates for non-disclosing companies**
  - Testing out with hundredth of random portfolios the standard deviation between portfolio carbon footprint calculated with real data on one hand, and the same portfolio of disclosing companies but with ICB4 subsector averages only
  - A clear pattern about uncertainty, depending on portfolio size and disclosure rate!

$$\sigma' = \frac{\sigma}{\sqrt{n}} * \sqrt{\frac{N-n}{N-1}}$$

σ(real,ICB-averages)
decreasing with disclosure rate and size of the portfolio



Our goal: the lowest level of unceretainty (σ)

☑ SIC Peer Estimates

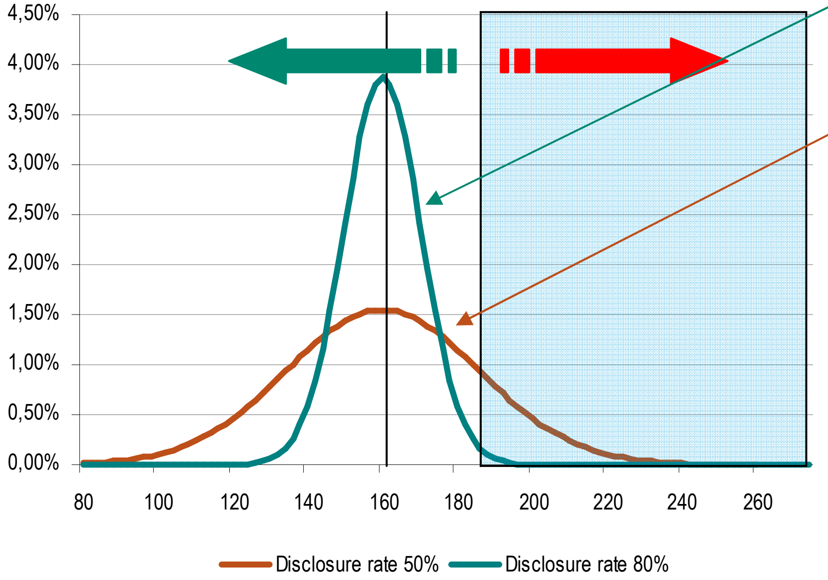
What will it give clients

Tells the client if they beat the benchmark, by how much and with level of confidence

Table 5: Probability to beat the benchmark: use of the quality of measure

Solution	Portfolio Footprint	Index Footprint	X (size of the portfolio	R (level of Disclosure)	σ (standard deviation)	σ (real)	-2σ	+2σ	95% span	P<Index Footprint
Disclosed data + ICB averages	160	180	100	50%	6,43%	10,48	139	181	42	97%
Disclosed data + ICB averages	160	180	100	80%	16,10%	25,76	108	212	103	78%

Source: BofA Merrill Lynch Global Research



Unit:

metric tons CO2eq / US$ million of MV

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster*
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

* Ratings dispersions may vary from time to time where BofAML Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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