



Environmental Tracking

Carbon Rankings

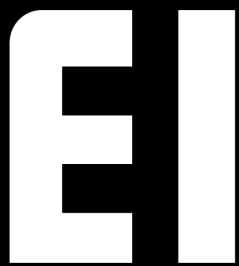
REPORT:
ET BRICS 300

2013 CARBON RANKINGS

Environmental Investment Organisation

Where the needs of the future meet the practicalities of the present





WHO WE ARE

ENVIRONMENTAL INVESTMENT ORGANISATION

An independent research body promoting carbon transparency and investment solutions designed to address climate change.

WHAT WE DO

ENVIRONMENTAL TRACKING

ET Carbon Rankings

scoring the world's largest companies by greenhouse gas emissions & levels of transparency

ET Index Series

mainstream index series designed to give investors broad market exposure whilst capitalising on, and driving, the shift towards a low carbon economy

ET Engagement

engaging with companies to improve standards of disclosure & lower emissions

WHY WE DO IT

designed specifically to **reduce**
global corporate **Greenhouse Gas emissions**





Foreword

Dear Reader,

Welcome to the ET BRICS 300 Report, examining the greenhouse gas emissions and transparency of the largest 300 companies in Brazil, Russia, India, China and South Africa. The ET Carbon Rankings apply a uniform methodology across all sectors within a single public Ranking.

This is one in a series of ET 2013 Carbon Ranking Reports covering the world's largest 1,300 companies and being released in the week commencing 29th April.

Many companies now benefit from talented, dedicated sustainability staff and are earning top spots for their efforts, but the overall picture globally remains poor. Many companies go to great lengths to collect and analyse detailed greenhouse gas (GHG) data, only to fail at the last hurdle with simple errors in data presentation, such that a member of the public cannot decipher what the data means when set against the accepted GHG Protocol standard, the most widely used international accounting tool for GHG emissions. Unless all companies are reporting and presenting their GHG data in a clear and uniform manner, the task of cross comparing against companies becomes all but impossible.

Why is it that despite nearly two decades of major international initiatives, such as the UN Global Compact, the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP), we find ourselves in this situation? In the case of the GRI, its broad range of topics and lack of any specific format for GHG data presentation, even lacking specific headings for Scope 1, 2 and 3 emissions, explains itself. In the case of the CDP, operating as a private database with limited public access, the onus has been taken away from the responsibility of companies to report their own GHG emissions data in a clear, publicly accessible manner. Is it any wonder some companies are confused as to exactly what is expected of them? In simple terms, clear GHG reporting needs to be prioritised from the ever widening scope of CSR reporting if we are to have any chance of even passing the first hurdle of the climate crisis, which is to establish the reliability of the data itself.

The EIO does not usually involve itself in the scientific debate, preferring to let those with the necessary competence address such complex questions. Yet I could not help but be struck by a recent BBC Horizon Television Documentary entitled 'Global Weirding', a phrase which seems to neatly encapsulate the current facts on the ground. Of particular note was a claim by US scientist Professor Katharine Hayhoe and quoted by many other sources including the Met Office, that atmospheric humidity has increased by 4% since 1970. Given that many of the extreme weather events we are facing are moisture driven, this seemed to me to be a quite startling number. If we had been told that the global temperature had increased by 4% in the last 40 years, I think most people would realise that something quite serious was happening. Given an average is simply that and severe events will concentrate at particular times and places, given time lags are an inevitable part of the climatic process, we have not even begun to see the impact of this or many other consequences of climate change. I do find it surprising



Foreword

this particular number has not received greater attention. It does not require 'an Einstein' to work out that the wettest (or snowiest) decade since records began might have something to do with a 4% rise in atmospheric moisture.

The term 'Denialist' has often been used to describe arguments querying the current scientific consensus. But I do not see a consensus. On the contrary, it seems to me there are a great range of predicted outcomes and only those that are relatively 'unalarmist' get any serious press.

Unfortunately, we have no real idea of the parameters of what we are triggering, being a complex interaction of social, economic and climatic forces. I fear, as is already happening, first the vulnerable will suffer and then chaos and carnage will catch up with the rest. We are in effect driving in the dark without lights, with a misplaced over-confidence in where we are heading. Nothing new there in the history of human intelligence, it is just that on this occasion a miscalculation will leave 7 billion and counting in its aftermath.

There is no historical precedent to this situation. There is no textbook answer. The real 'denial' is in failing to recognise there is no obvious solution to this problem, in this extraordinarily complex globalised world. The global economy is made up of nearly 200 individual nation states with vast gulfs of wealth, geographical size, exposure to risks, asymmetric political and social systems and multiple competing priorities. On the evidence to date, they are simply not going to suddenly a) all agree to a meaningful new global emissions regime and b) implement it even if they did all sign it.

The only immediate decentralised non-governmental solution I can see is from the activities of the investment world. Yet this will involve a fundamental and profound rethink of the purpose of the investment system and its current models, including current models of SRI and Ethical Investment, if we are to have the slightest chance of impacting this problem in any serious or rapid time frame.

Statements of intent. Fine. Statements of principle. Fine. But surely, we need to ask the long hard question, what might actually work?

Who knows how the final days of the people of Easter Island played out, but I can imagine as those involved looked around them and asked 'what have we done?', their more intelligent young offspring were less than complimentary. A modern translation might read 'thanks a tonne!'

Michael Gill,

Strategic Director & Founder, The Environmental Investment Organisation

April 2013

CONTENTS 3

EXECUTIVE	SUMMARY
	5
RANKING HIGHLIGHTS	& DISCLOSURE OVERVIEW
	8
CARBON RANKING	METHODOLOGY
	11
SPOTLIGHT ON	SCOPE 3 & <i>INFERENCE</i>
	14
SPOTLIGHT ON	SCOPE 1 & 2 & <i>INFERENCE</i>
	17
RANKING	ANALYSIS
	20
GEOGRAPHICAL	ANALYSIS
	21
SECTORAL	ANALYSIS
	25
KEY	DISCUSSION POINTS
	28
REPORTING	LANDSCAPE
	29
EXEMPLARY REPORT	& GRI TEMPLATE
	31
REPORTING	EXAMPLES
	33
REPORTING	GUIDANCE
	35
ET REPORTING	TEMPLATE
	36
CONTEXT: EMISSIONS	LANDSCAPE
	38
ET INDEX	SERIES
	45
GLOSSARY	& BIBLIOGRAPHY
	46

EXECUTIVE 5

SUMMARY

The ET Carbon Rankings serve the twin purpose of encouraging transparency through making emissions data more publicly accessible, while also laying the foundations for the ET Index Series, a market mechanism designed to operate globally and incentivise carbon reductions within a rapid time-frame.

This latest set of Carbon Rankings build on the methodology established previously for the ET 2011 Carbon Rankings, where companies were placed into one of four Disclosure and Verification categories and then ranked by carbon intensity (tonnes of CO₂ equivalent per million US dollars of turnover) based on Scope 1, 2 & 3 emissions.

Where data is incomplete or not reported, companies are benchmarked against their sectoral competitors using the highest reported emissions intensity for that sector. *Please see the [EIO website methodology section](#) for a more comprehensive explanation of the four disclosure categories and the inference method.*

With the introduction of the long awaited [New Scope 3 Standard](#) from the Greenhouse Gas (GHG) Protocol in 2011, the EIO continues to take a proactive approach to incentivising companies to adopt this important new standard in GHG Reporting. It has long been the EIO's stated view that Scope 1 & 2 emissions do not in themselves provide an accurate picture of a company's carbon impact and therefore a bold approach needs to be taken to reward those companies fully reporting Scope 3 data.

Only when a company reports or explains its data across all 15 categories will that Scope 3 data be accepted. In all other cases, whilst the Scope 3 data is recorded and published, the inference method determines the actual Scope 3 intensity applied within the Ranking. The disclosure categories and inference method are essential tools to ensure that the ET Carbon Ranking is based on cross comparable information and no company is unfairly disadvantaged by disclosing fully its Scope 1, 2 and 3 emissions.

THE RANKINGS ARE BASED ON THE FOLLOWING CORE PRINCIPLES:

- ▶ DATA USED IN THE RANKINGS MUST BE PUBLICLY AVAILABLE AND THEREFORE FULLY TRANSPARENT.
- ▶ IN ORDER TO ADDRESS THE ISSUE OF CLIMATE CHANGE, THE RANKINGS' PRIMARY OBJECTIVE MUST BE TO ENCOURAGE DISCLOSURE.
- ▶ DATA WHICH HAS BEEN VERIFIED BY AN INDEPENDENT THIRD PARTY WILL ALWAYS BE RANKED ABOVE DATA WHICH HAS NOT.
- ▶ COMPANIES HONEST ENOUGH TO DISCLOSE THEIR TOTAL EMISSIONS MUST NOT BE PENALISED FOR DOING SO RELATIVE TO THOSE WHO FAIL TO DISCLOSE.
- ▶ IN ORDER TO BE FULLY EFFECTIVE, THE RANKINGS MUST TAKE INTO ACCOUNT THE FULL SCOPE OF A COMPANY'S CARBON EMISSIONS, INCLUDING SCOPE 3.

EXECUTIVE 6

SUMMARY

Key Findings

- ▶ **11% of companies publicly disclose complete and independently verified Scope 1 and 2 emissions data**
- ▶ **61% of companies do not publicly disclose their emissions data**
- ▶ **22% of companies in BRICS report Scope 3 categories, within a range of one to six categories**
- ▶ **9 out of 300 companies report five or more Scope 3 categories first**
- ▶ **Cemig, the Alternative Energy company, tops the ET BRICS 300 Carbon Ranking, followed by Vodacom**
- ▶ **The biggest Scope 1 & 2 absolute emitter, for which information was available, was Gazprom followed by Inter RAO with emissions of 133,400,000 and 77,000,000 (tCO₂e), respectively**

The 2013 ET BRICS 300 Carbon Ranking is topped by Cemig, a Brazilian Alternative Energy company. Although Cemig does not fully disclose its Scope 3 emissions it benefits from inclusion within the Alternative Energy sector which means its inferred Scope 3 intensity is benchmarked against the highest reported Scope 3 emissions intensity within this same Alternative Energy Sector, rather than the broader Utilities sector, which would have been higher.

The Alternative Energy sector was created under the ET Carbon Ranking methodology to advantage companies seeking to develop alternative energies. Please refer to the 'Spotlight on Scope 3 Inference' section for more information.

The top 10 is made up of 3 companies each from Brazil, India and China, in addition to one South African company, Vodacom. These are mainly Telecoms and Technology groups, followed by 3 Financial companies, benefiting from low inferred Scope 3 intensities in each of these sectors.

Interestingly, only four of the twenty three Russian companies within the Ranking, make it into the top third, with OC Rosneft, the Oil & Gas giant being the only company in the region to report complete and verified data. OC Rosneft has a combined intensity figure of 3,862.07 tCO₂e/\$M turnover, and ranks number 18.

Of a total of 117 companies based in China included in the ET BRICS 300 Carbon Ranking, only 9 produce complete data, and all of these are Hong Kong based.

The top 10 report between one and six Scope 3 categories. Interestingly, where Scope 3 is reported, BRICS companies compare favourably with other regions of the world in reporting a comparatively high number of individual Scope 3 categories, as demonstrated in the Spotlight on Scope 3 section. This will become more apparent as the full suite of Global ET Carbon Rankings are published and shows that there are companies in the BRICS region more than able to hold their own in terms of high standards of carbon transparency.

EXECUTIVE 7

SUMMARY

The best-placed company in the ET Carbon Rankings' second Disclosure Category, unverified but complete data, comes in at position 34, as Mediclinic International, a South African Health Care business, which disclosed three Scope 3 categories and has an intensity figure of 223.19 tCO₂e/\$M turnover.

Its emissions data was not verified and therefore it did not break into the top category. Had this been the case it would have been ranked seventh.

Similarly, the second in the unverified category, Hysan Development, a Hong Kong-based Financials firm, ranked 35th and disclosing no Scope 3 categories, would have broken into the top ten at number nine with an a very low overall emissions intensity 393.19 tCO₂e/\$M turnover.

In terms of comparative country analysis of reporting trends across the region, South Africa leads the field with over 50% of companies reporting complete data, albeit with only 24% of companies reporting complete & verified data. Brazil leads the rest with 21% and 12% respectively, whilst 0% of Chinese companies report complete data, excluding Hong Kong.

With 61% of the companies not reporting any data at all and 21% publishing incomplete data, there is clearly large scope for improvement in emissions reporting across the BRICS.

The ET Carbon Rankings make up the first phase of the Environmental Tracking concept paving the way for the second stage: the ET Index Series. This will see the Rankings used to create a series of tradeable indexes, providing the investment community with a mainstream tool to encourage transparency and emission reductions on a global scale. It has already demonstrated the ability of these ET Indexes to track their conventional equivalents with minimal tracking error, through the launch of its two pilot indexes, the ET Europe 300 and the ET UK 100, based on previously published Rankings. For more information, including backtested performance data based on the 2013 ET Carbon Rankings, please refer to the [ET Index Section](#) of the EIO website.

Key Reporting Recommendations

- ▶ **Report Scope 1, 2 & 3 emissions following GHG Protocol guidelines**
- ▶ **Ensure emissions data is publicly available in CSR/Sustainability reports/Integrated Annual report and online**
- ▶ **Have emissions data verified by an independent third party**
- ▶ **Ensure verification statements are public**

Know your Scopes!

- ▶ **Scope 1 emissions:** All direct emissions
- ▶ **Scope 2 emissions:** Indirect emissions generated from the purchase of electricity
- ▶ **Scope 3 emissions:** All other indirect emissions, such as distribution of goods, transportation of purchased goods, transportation of waste, disposal of waste, employee commuting, business travel or investments.

RANKING 8

HIGHLIGHTS

ET BRICS 300 Top 10

Figure 1.

ET Rank	Company Name	S1+2 emissions (tCO2e)	S1+2 Intensity	S3 Categories disclosed	S1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Cemig	192,668	24.95	3	25.17	Complete & Verified
2	Vodacom Group	491,563	68.15	1	103.87	Complete & Verified
3	Lenovo Group	91,593	4.23	4	161.64	Complete & Verified
4	Infosys	178,952	35.65	2	193.06	Complete & Verified
5	HCL Technologies	170,758	59.48	2	216.89	Complete & Verified
6	Wipro	361,603	63.80	6	221.21	Complete & Verified
7	BMF Bovespa	773	0.75	4	266.61	Complete & Verified
8	HK Exs & Clear	11,137	11.73	2	277.59	Complete & Verified
9	Natura	7,927	2.90	1	430.92	Complete & Verified
10	Hopewell Holdings	37,382	187.84	1	453.70	Complete & Verified

Topping the 2013 ET BRICS 300 Carbon Ranking is Cemig, which leads the field by a long way with a combined intensity of 25.17. Second place is occupied by Vodacom which has a combined intensity that is almost four times higher than Cemig, but nonetheless two thirds that of third-placed Lenovo Group. Companies 2-10 each have combined intensities over 100 tCO2e/\$M turnover. Technology companies dominate the top 10, and three of companies are based in India.

BMF Bovespa and Natura, both from Brazil, are the only two companies to also be amongst the lowest 5 companies in the region in terms of

absolute Scope 1 and 2 emissions, indicating they are truly low-footprint companies.

In terms of Scope 3 disclosure, only one company in the top 10, Wipro, discloses more than 5 Scope 3 categories.

(Emissions Intensity is measured in tCO2e/\$M turnover)

RANKING 9

HIGHLIGHTS

ET BRICS 300 Bottom 10

Figure 2.

ET Rank	Company Name	S1+2 emissions (tCO ₂ e)	S1+2 Intensity	S3 Categories disclosed	S1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
291	China Railway Con.	No public data	16,462.39	-	17,527.85	No public data
292	China Railway Group	No public data	16,462.39	-	17,527.85	No public data
293	Jaiprakash Associates	No public data	16,462.39	-	17,527.85	No public data
294	China Natbldgmrah	No public data	16,462.39	-	17,527.85	No public data
295	China Commsconh	No public data	16,462.39	-	17,527.85	No public data
296	China Ste.Con.Intl.Hdg.	No public data	16,462.39	-	17,527.85	No public data
297	Anhui Conch Cement	No public data	16,462.39	-	17,527.85	No public data
298	Grasim Industries	No public data	16,462.39	-	17,527.85	No public data
299	Nws Holdings	No public data	16,462.39	-	17,527.85	No public data
300	Asian Paints	No public data	16,462.39	-	17,527.85	No public data

Ranking last among the largest 300 companies across the BRICS is Indian company, Asian Paints. All of the companies making up the bottom 10 are from the Industrials Sector and since they do not disclose any public data they all receive the same combined inferred intensity of 17.527.85, with the advantage being given to the smaller companies by market value. The justification for this is simple: larger companies have greater resources to both improve their reporting and realign their business towards a low carbon model.

China and Hong Kong based companies dominate the bottom 10 representing 8 out of 10 companies, with India contributing two companies.

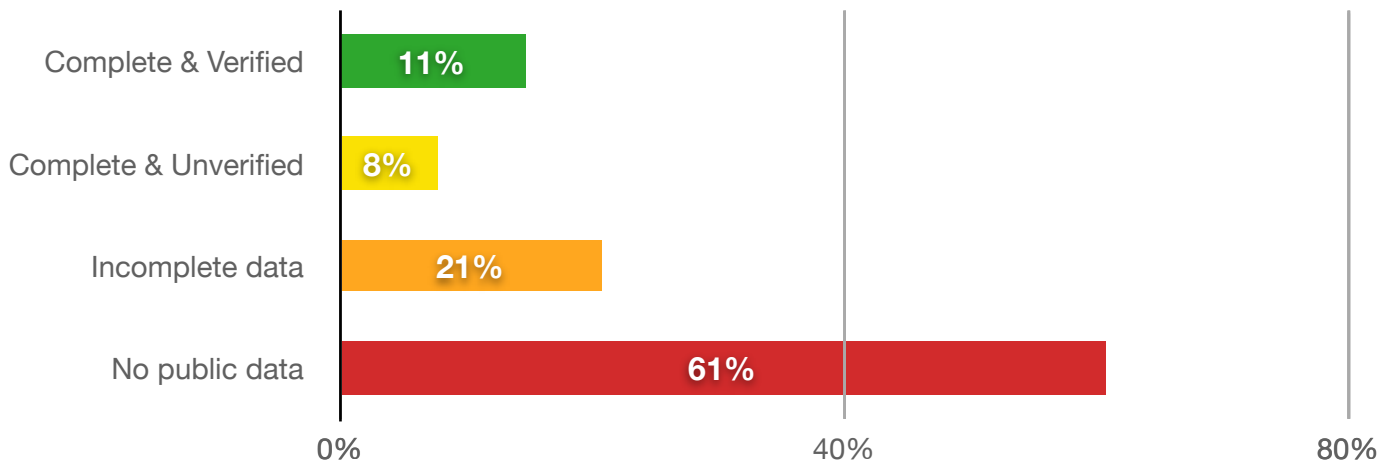
(Emissions Intensity is measured in tCO₂e/\$M turnover)

DISCLOSURE 10

OVERVIEW

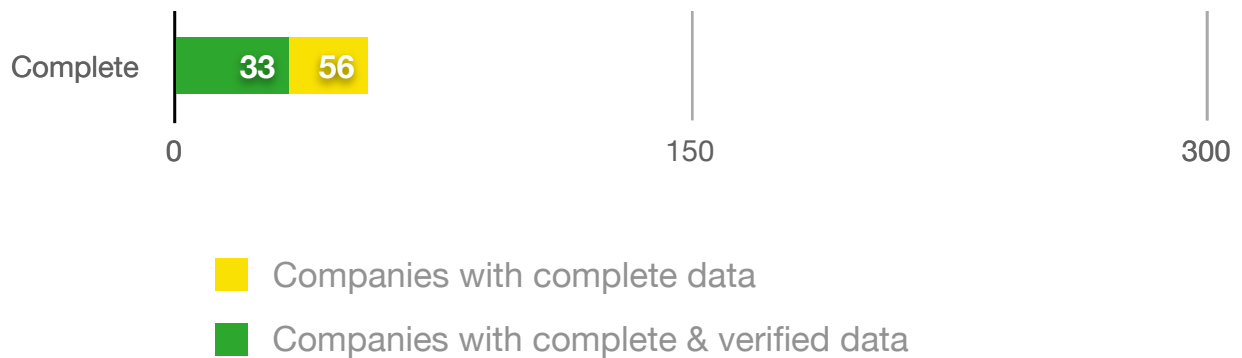
The disclosure and verification landscape of the ET BRICS 300

Figure 3.



Complete data versus verified data

Figure 4.



CARBON RANKING 11

METHODOLOGY

The ET Carbon Rankings have been designed specifically to encourage disclosure and verification, paving the way for absolute emissions reductions.

In essence, the ET Carbon Ranking methodology follows a three step process based on four information categories, as detailed below.

Step 1: Categorisation

Companies are placed into one of **four data categories** based on Scope 1 & 2 emissions:

-  **1) Public, Complete, Verified**
-  **2) Public, Complete, Unverified**
-  **3) Public, Incomplete**
-  **4) No Public Data**

Step 2: Inference

Wherever data is not complete, which means Scope 1 and 2 have not been reported for the company's entire operations or they have not been expressed in a sufficiently clear manner or there is simply no public data available, a worst case figure is inferred; based on the highest reported emissions intensity by any company within the same sector across the full universe of companies within the ET Carbon Rankings. This is designed specifically to encourage disclosure and to avoid penalising companies honest enough to report their emissions figures.

The same principle is applied but in a slightly different manner to Scope 3 emissions. Because of the controversial nature of Scope 3 emissions - by definition they are not under the ownership or direct control of a company, nor do they always lend themselves to easy calculation or identification, it does not appear logical to the EIO for these emissions to be given equal weight to Scope 1 and 2 emissions, which clearly are the responsibility of the company.

THE CARBON RANKINGS HAVE BEEN
DESIGNED SPECIFICALLY TO ENCOURAGE
DISCLOSURE AND VERIFICATION

COMPANIES WITH EXTERNALLY VERIFIED
DATA WILL ALWAYS FIND THEMSELVES
RANKED ABOVE THOSE WITH
UNVERIFIED DATA

COMPANIES THAT DO NOT HAVE ANY
PUBLICLY AVAILABLE DATA ARE
BENCHMARKED AGAINST THE HIGHEST
INTENSITY FROM THE WORST PERFORMING
COMPANY WITHIN THEIR SECTOR

CARBON RANKING 12

METHODOLOGY

Scope 3 Categories:

Upstream

1. Purchased goods and services
2. Capital goods
3. Fuel- and energy-related activities (not included in scope 1 or scope 2)
4. Upstream transportation and distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Upstream leased asset

Downstream

9. Downstream transportation and distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Downstream leased assets
14. Franchises
15. Investment

The EIO's current approach is to give a **50% weighting** to any **fully reported Scope 3 emissions total reported according to the 15 categories of the new Scope 3 standard**. This is then added to the Scope 1 and 2 total that has already been reported. Whenever a company does not report a complete Scope 3 total, exactly the same inference method described for Scope 1 and 2 is employed for Scope 3 emissions.

The company in the relevant sector **across the full universe of ET Rankings** with the highest reported Scope 3 figure is identified and used to infer a figure for the remaining companies, thus avoiding penalising a company for being honest enough to report a high figure. The only route by which a company can avoid having an inferred figure allocated to them is to report its own complete figure, and if that happens to be lower than the existing benchmark, then it gains the advantage of a higher ranking position by virtue of its lower emission total. If it is higher, then all the remaining non disclosing companies are benchmarked against it.

In summary, combined emissions intensity across the three Scopes is calculated according to the following formula: 100% of Scope 1 & 2 emissions intensity (disclosed or inferred) + 50% of Scope 3 emissions intensity (disclosed or inferred).

Step 3: Ranking

First companies are categorised according to the completeness and verification of their Scope 1 & 2 data. Secondly, companies are ranked within the Disclosure Categories, according to their combined emissions intensity across Scopes 1, 2 and 3; with the exception of any company reporting complete Scope 3 data across all 15 GHG Protocol Scope 3 Standard categories in addition to having complete and verified Scope 1 & 2 data. Companies falling into the latter category will rank above all other companies in the Rankings, and will be differentiated according to combined intensity. Please refer to the inference method as described in the previous section for details on how companies not providing complete data are treated.

IT IS KEY THAT SCOPE 3 EMISSIONS ARE IDENTIFIED, REPORTED AND ULTIMATELY REDUCED

CARBON RANKING 13

METHODOLOGY

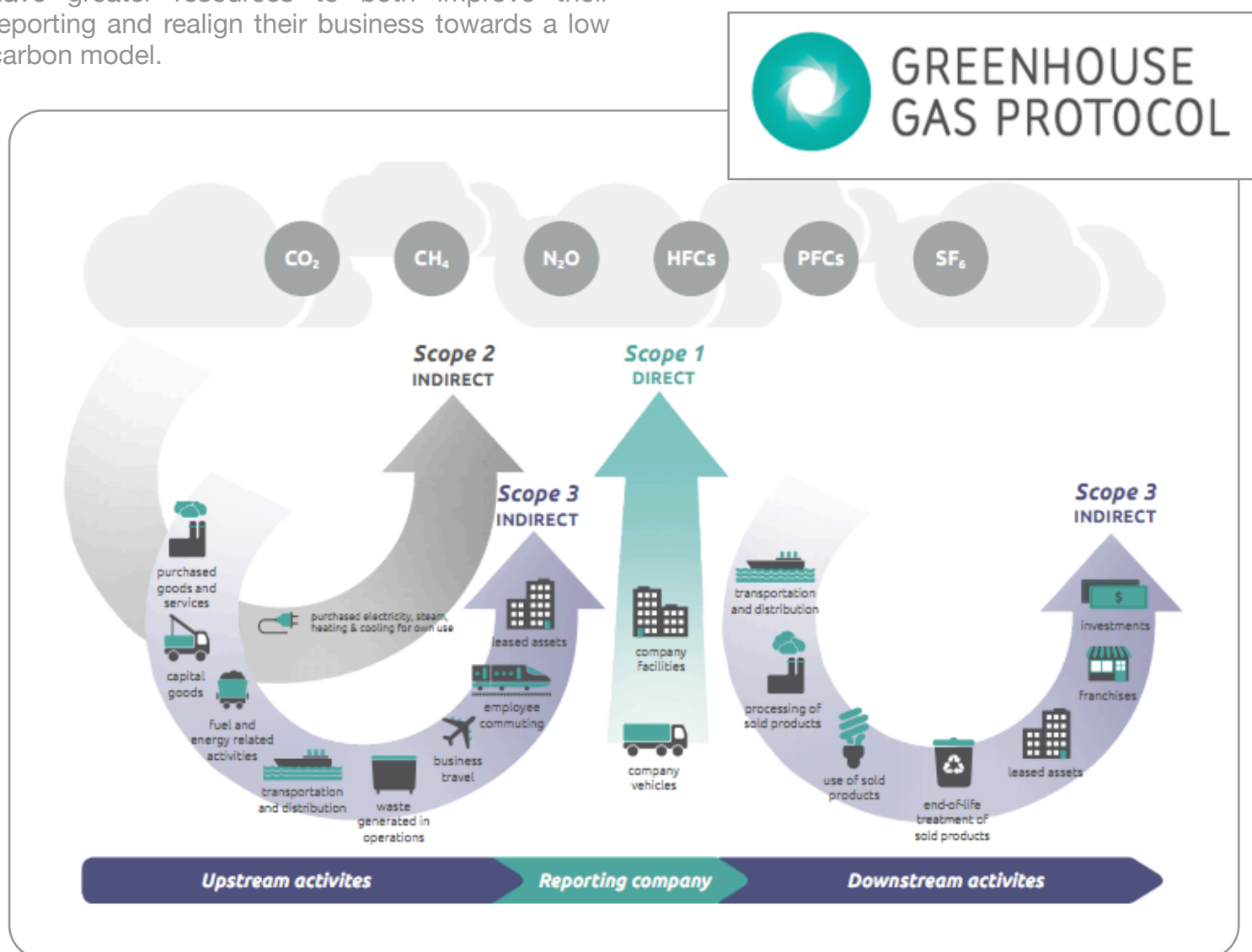
Accounting for size

Emissions intensity is calculated using turnover figures from the same financial year as their latest publicly available (at time of publication) reported emissions.

Whilst there is no universally accepted system of establishing relative company size, turnover is generally accepted within the field of carbon accounting as a reasonable metric to determine company size.

Where one or more companies have the same emissions intensity within the Rankings, smaller market capitalisation is given an advantage. The justification for this is simple: larger companies have greater resources to both improve their reporting and realign their business towards a low carbon model.

FOR A COMPLETE EXPLANATION OF THE METHODOLOGY BEHIND THE ET CARBON RANKINGS PLEASE VISIT EIO.ORG.UK

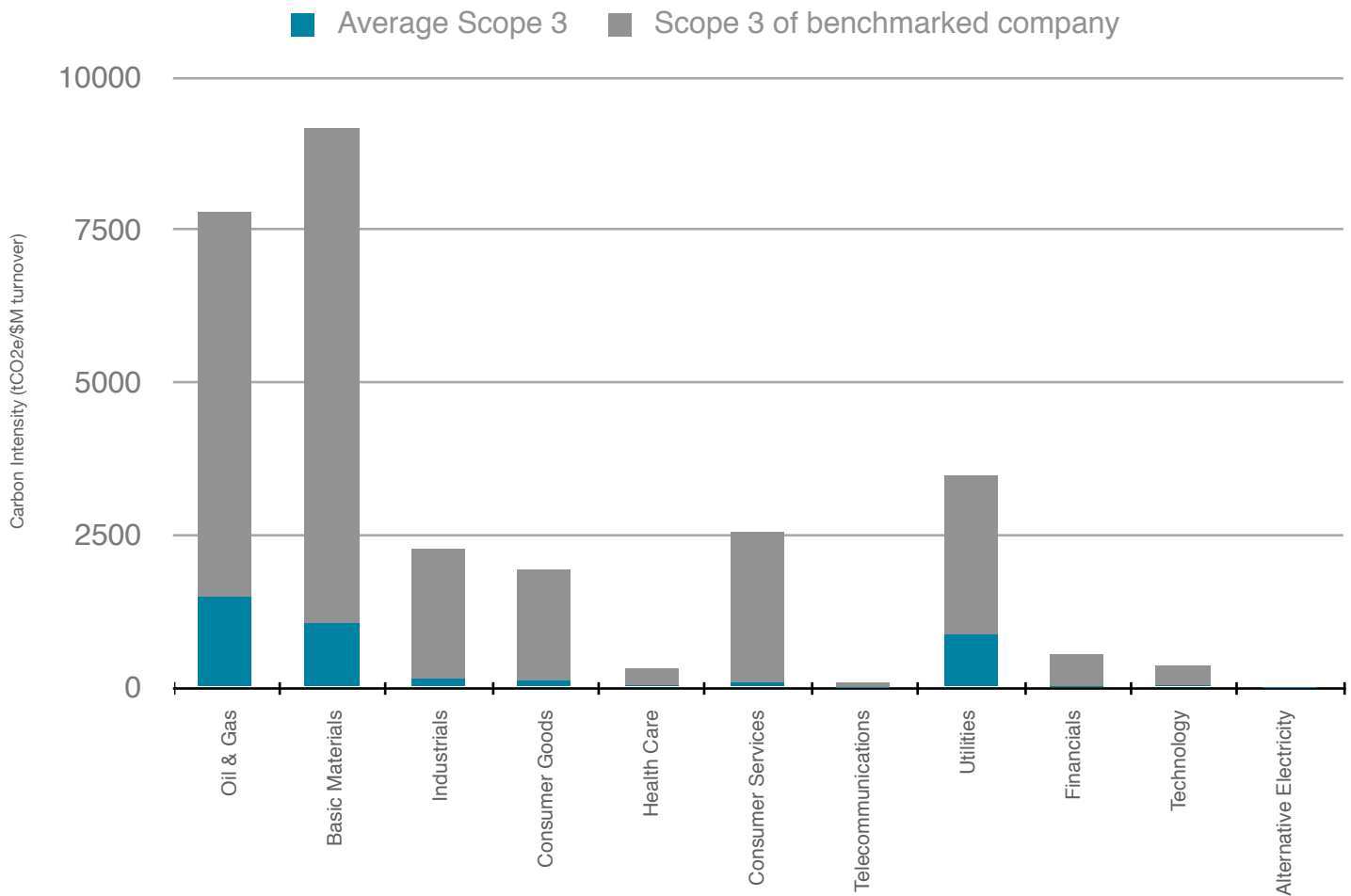


SPOTLIGHT ON 14

SCOPE 3

Global Scope 3 Analysis

Figure 5.



Global Scope 3 Benchmark companies

Figure 6.

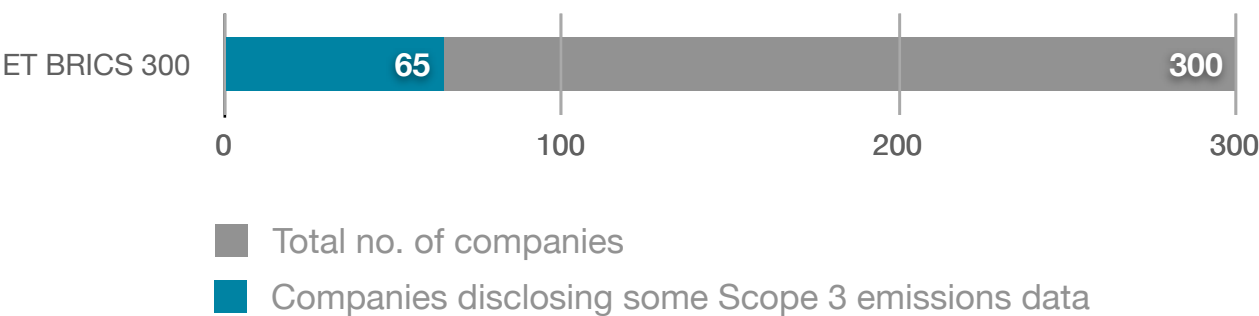
Sector	Benchmark Company Name	No. of Scope 3 Categories Disclosed	Scope 3 Intensity	Sector Scope 3 Intensity Average
Oil & Gas	Santos	1	6,319.81	1,473.57
Basic Materials	Rio Tinto	3	8,120.15	1,047.41
Industrials	Honda Motor	1	2,130.92	129.73
Consumer Goods	Panasonic	2	856.03	109.11
Health Care	Baxter Intl	12	291.54	23.43
Consumer Services	Intercontinental Hotels Gp.	2	2,475.03	72.80
Telecommunications	Sprint Nextel	5	71.44	7.35
Utilities	PG&E	1	2,610.97	861.67
Financials	British Land	3	531.72	9.96
Technology	Intel	3	314.82	36.16
Alternative Energy	Cemig	3	0.45	0.45

SPOTLIGHT ON 15

SCOPE 3

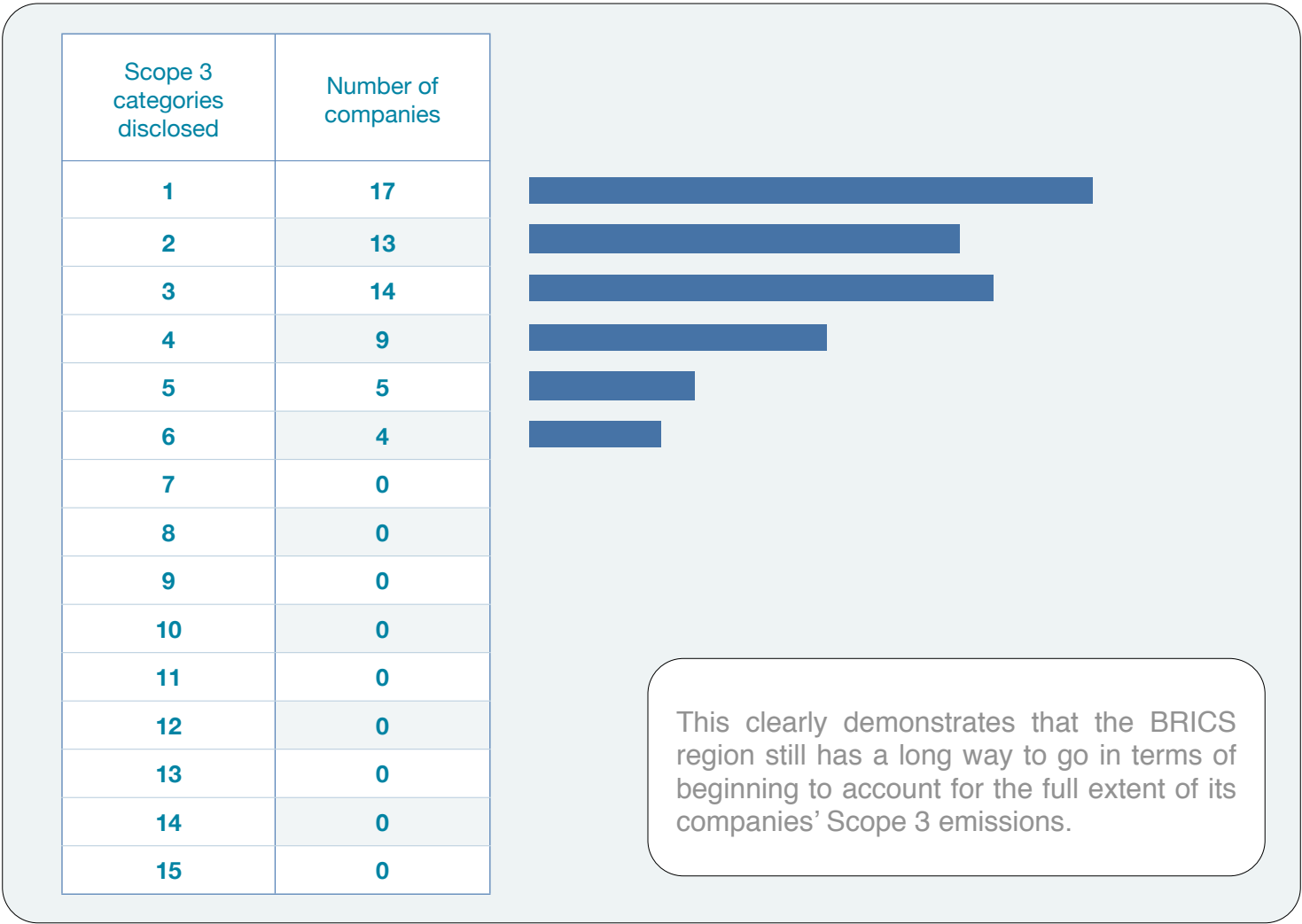
BRICS 300 Scope 3 Analysis

Figure 7.



BRICS 300 Extent of Scope 3 Disclosure

Figure 8.



INFERENCE: SCOPE 3

NB. Example taken from ET Global 800

Figure 9.

As these three companies from the **Basic Materials** sector fail to disclose all 15 Scope 3 categories as defined by the GHG Protocol Corporate Value Chain (Scope 3) Standard, their disclosed Scope 3 figures are considered to be incomplete, and therefore they are **given an inferred Scope 3 figure**.

Disclosure & Verification status	Carbon Rank	Company Name	No. of S3 Categories Disclosed	Total Scope 3 Emissions	Disclosed Scope 3 Intensity	Inferred Scope 3 Intensity
No Public Data	777	Mfrisco	-	No Public Data	-	8,120.15
No Public Data	778	Silver Wheaton	-	No Public Data	-	8,120.15
No Public Data	779	China Shenhua	-	No Public Data	-	8,120.15

Rio Tinto is one of the Scope 3 benchmark companies for the **ET Global Universe**, which means it is the company with the highest disclosed Scope 3 intensity within the **Basic Materials** sector.

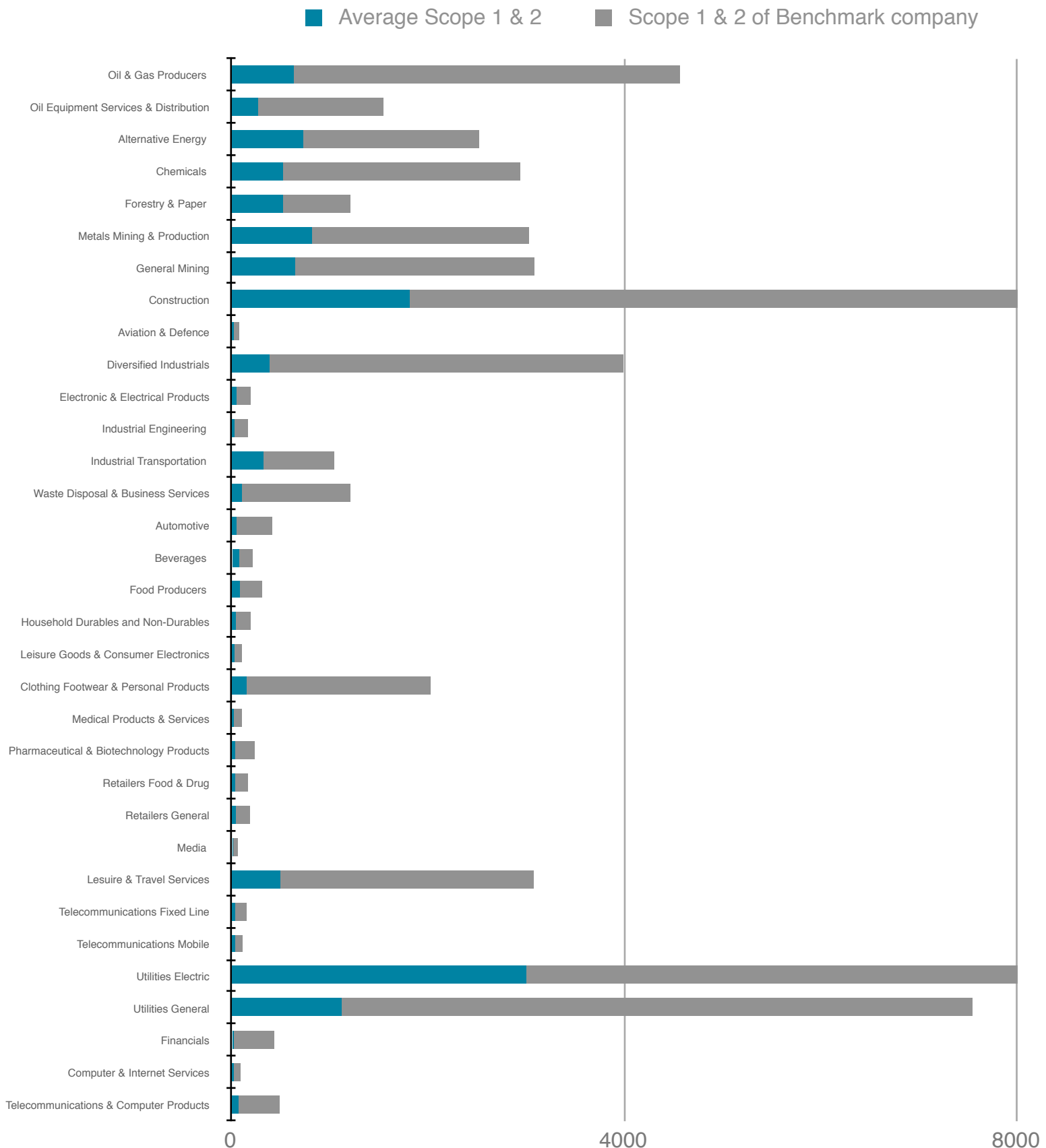
Sector	Benchmark Company Name	Scope 3 Intensity
Oil & Gas	Santos	6,319.81
Basic Materials	Rio Tinto	8,120.15
Industrials	Honda Motor	2,130.92
Consumer Goods	Panasonic	856.03
Health Care	Baxter Intl	291.54
Consumer Services	Int. Continental Hotels Group	2,475.03
Telecommunications	Sprint Nextel	71.44
Utilities	PG&E	2,610.97
Financials	British Land	531.72
Technology	Intel	314.82
Alternative Energy	Cemig	0.45

SPOTLIGHT ON 17

SCOPE 1 & 2

Global Scope 1 & 2 Analysis

Figure 10.



SPOTLIGHT ON 18

SCOPE 1 & 2

Global Scope 1 & 2 Benchmark companies

Figure 11.

Sector	Benchmark Company Name	Scope 1 & 2 Intensity	Sector Scope 1 & 2 Intensity Average
Oil & Gas Producers	Sasol	3,926.62	637.62
Oil Equipment, Services & Distribution	Transcanada	1,274.87	274.59
Alternative Energy	Tractebel	1,792.34	732.14
Chemicals	Air Prds& Chems	2,412.22	527.69
Forestry & Paper	Mondi	685.07	528.76
Metals Mining & Production	Usiminas	2,203.99	825.31
General Mining	Harmony Gold Mng	2,434.17	652.35
Construction	ACC	16,462.39	1,818.72
Aviation & Defence	Meggitt	54.67	25.31
Diversified Industrials	Swire Pacific	3,602.58	393.03
Electronic & Electrical Products	Samsung Elto.Mechanics	139.38	54.13
Industrial Engineering	Mahindra & Mahindra	130.66	33.84
Industrial Transportation	A P Moller - Maersk	720.44	328.55
Waste Disposal & Business Services	Waste Man	1,099.20	110.08
Automotive	Astra International	360.96	56.47
Beverages	Sabmiller	139.63	77.65
Food Producers	Monsanto	222.05	87.10
Household Durables and Non-Durables	Steinhoff Intl	146.90	49.53
Leisure Goods & Consumer Electronics	Samsung Electronics	73.34	34.27
Clothing, Footwear & Personal Products	Colgate-Palmolive India	1,870.83	157.14
Medical Products & Services	Mediclinic International	77.42	29.46
Pharmaceutical & Biotechnology Products	Novozymes	198.15	38.83
Retailers Food & Drug	Lawson	130.51	39.56
Retailers General	The Foschini Group	142.70	46.36
Media	Dai Nippon Printing	53.33	15.97
Lesuire & Travel Services	Int. Continental hotels gp	2,576.05	498.77
Telecommunications Fixed Line	Chunghwa Telecom	121.62	36.84
Telecommunications Mobile	Taiwan Mobile	70.96	40.01
Utilities Electric	American Elec Power	9,036.54	3,007.06
Utilities General	Duke Energy	6,421.64	1,124.00
Financials	Weyerhaeuser	418.28	22.78
Computer & Internet Services	Wipro	63.80	28.49
Telecommunications & Computer Products	United Micro Eltn	413.39	76.90

INFERENCE: SCOPE 1 & 2

Figure 12.

American Electric Power is the company with the highest emissions intensity disclosing complete data within the Electricity Industry across the entire **ET Global Universe**.

Disclosure & Verification status	Carbon Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Emissions Intensity (tCO ₂ e/\$M turnover)	No. of S3 Categories Disclosed
Complete & Unverified	297	Duke Energy	93,300,000.00	6,421.64	-
Complete & Unverified	298	Xcel Energy	79,300,000.00	7,446.89	-
Complete & Unverified	299	American Elec Power	136,000,000.00	9,036.54	-

Disclosure & Verification status	Carbon Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Emissions Intensity (tCO ₂ e/\$M turnover)	No. of S3 Categories Disclosed
No Public Data	799	Edison Intl.	No Public Data	9,036.54	-
No Public Data	800	Fiirst Energy	No Public Data	9,036.54	-

NB. Example taken from ET Global 800

Here, Edison International and First Energy have been benchmarked against the highest disclosing company with complete data from the Electricity industry. This means they have been given an *inferred* intensity of 9,036.54 tCO₂e/\$M turnover. This is not an approximation of their emissions but a means of making sure that the highest *disclosing* company in the sector is not penalised for being honest enough to report a large figure.

As both companies have the same *inferred* intensity figure, the company with the largest market capitalisation is placed lower down the Ranking.

ANALYSIS

Highest and Lowest Absolute Emitters:

Scope 1 & 2

Taken from the 56 Companies reporting complete data

Lowest Absolute Emitters (Scope 1 & 2 Only)

Figure 15.

Absolute Rank	ET Rank	Company Name	Scope 1+2 emissions (tCO ₂ e)	Scope 1+2 Intensity	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	7	BMF Bovespa	773	0.75	266.61	Complete & Verified
2	43	Anhanguera	1,355	2.25	1,239.77	Complete & Unverified
3	42	Clicks Group	2,977	1.64	1,239.15	Complete & Unverified
4	44	Lojas Renner	4,211	2.66	1,240.18	Complete & Unverified
5	9	Natura	7,927	2.90	430.92	Complete & Verified

Figure 15 lists the five lowest absolute emitters from those disclosing complete Scope 1 & 2 information. Verification status is included on the right but does not affect the ranking.

BMF Bovespa has the lowest recorded absolute emissions, and also ranks in the top 10 of the main Ranking. Natura also makes the top 10 in

both Rankings. The remaining companies, whilst showing low absolute figures, do not fair so well by emissions intensity (tCO₂e/\$M turnover) indicating a low degree of efficiency relative to other companies within the Ranking.

Highest Absolute Emitters (Scope 1 & 2 Only)

Figure 16.

Absolute Rank	ET Rank	Company Name	Scope 1+2 emissions (tCO ₂ e)	Scope 1+2 Intensity	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
52	18	OC Rosneft	43,800,000	702.17	3,862.07	Complete & Verified
53	26	CLP Holdings	44,450,000	3,759.82	5,065.31	Complete & Verified
54	30	Sasol	65,920,000	3,926.62	7,086.52	Complete & Verified
55	55	Inter Rao Ues	77,000,000	4,386.43	5,691.92	Complete & Unverified
56	52	Gazprom	133,400,000	878.81	4,038.71	Complete & Unverified

Figure 16 lists the five largest absolute emitters from those disclosing complete Scope 1 & 2 information, ignoring verification status.

The absolute highest emitters of the BRICS 300, rank relatively well in the main Ranking as they have all disclosed complete and fully verified data.

Sasol, with the third highest absolute emissions for Scope 1 and 2, ranks at 30th place as it discloses complete and verified data.

Inter Rao Ues and Gazprom occupy similar positions in both rankings, although Gazprom demonstrates a higher degree of carbon efficiency.

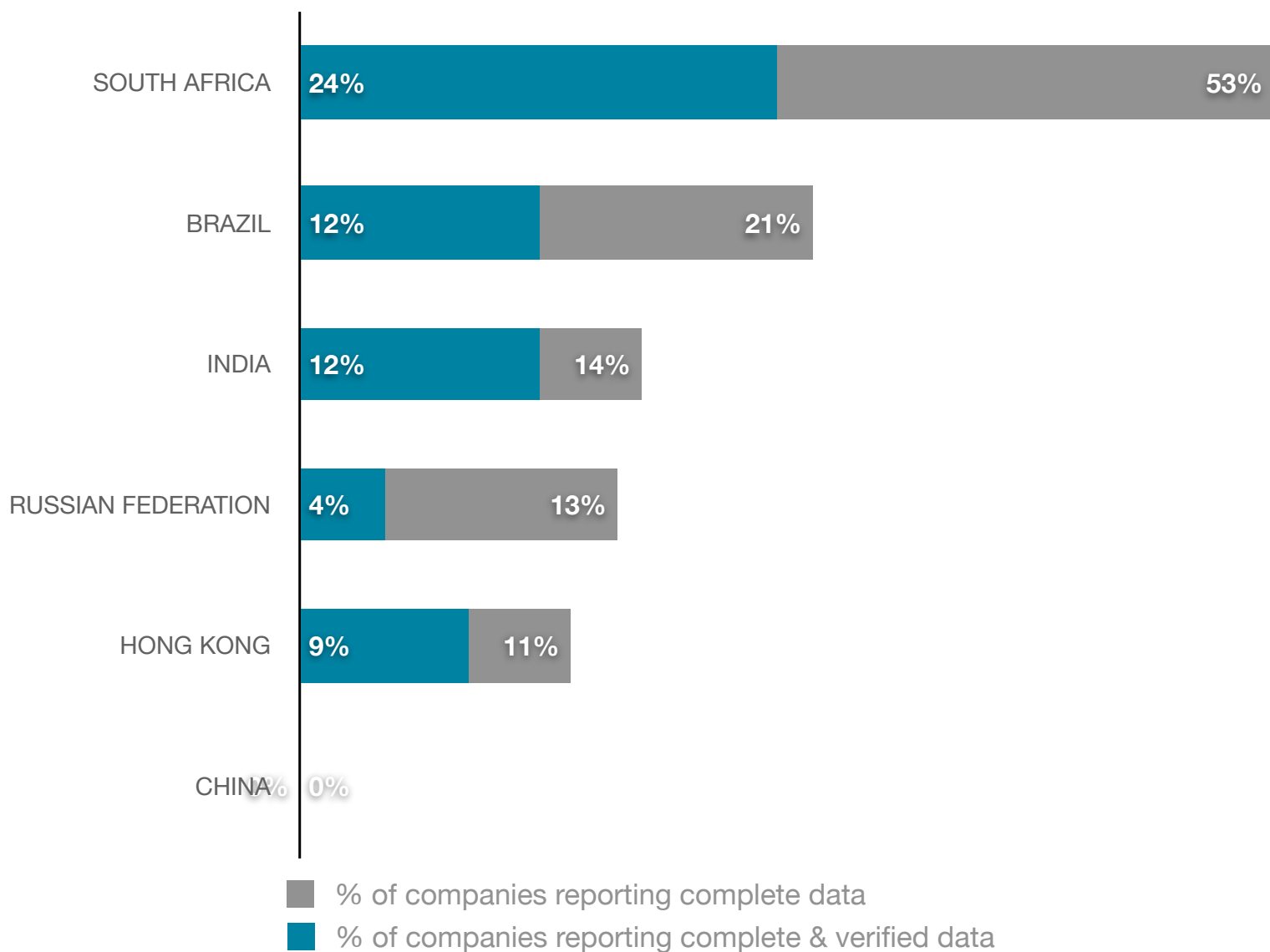
GEOGRAPHICAL 21

ANALYSIS

Summary

Countries leading the field of disclosure

Figure 17.



It is interesting to note that the percentage of companies reporting complete data is below 60%, even in the country with the highest degree of reporting, South Africa. This is indicative that although the BRICS are making progress in terms of GHG emissions reporting, there is still a long way to go.

The degree to which there is independent verification of data by third party is particularly

low in Russia and China, both showing only 4% and 0% verified data, respectively. This places South Africa and Brazil well in the lead of regional emissions reporting and verification.

However, all five of the BRICS countries show significant room for improvement.

GEOGRAPHICAL 22

ANALYSIS

Spotlight on: Brazil

Top 5

Figure 18.

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	1	Cemig	192,668	24.95	3	25.17	Complete & Verified
2	7	BMF Bovespa	773	0.75	4	266.61	Complete & Verified
3	9	Natura	7,927	2.90	1	430.92	Complete & Verified
4	13	Grupo Pão de Açúcar	133,506	5.87	2	1,243.38	Complete & Verified
5	14	CPFL Energia	211,854	33.98	3	1,339.47	Complete & Verified

Bottom 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
53	258	Gerdau	No Public Data	2,203.99	-	6,264.06	No Public Data
54	271	Ogx Petroleo	No Public Data	3,926.62	-	7,086.52	No Public Data
55	282	Sabesp	No Public Data	6,421.64	-	7,727.13	No Public Data
56	283	Mpx Energia On	No Public Data	9,036.54	-	10,342.03	No Public Data
57	285	Taesu Unt	No Public Data	9,036.54	-	10,342.03	No Public Data

Spotlight on: Russia

Top 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	18	Oc Rosneft	43,800,000	702.17	2	3,862.07	Complete & Verified
2	52	Gazprom	133,400,000	878.81	0	4,038.71	Complete & Unverified
3	55	Inter Rao Ues	77,000,000	4,386.43	0	5,691.92	Complete & Unverified
4	79	Sberbank Of Russia	557,361	17.53	0	283.39	Incomplete
5	114	Uralkali	Incomplete	2,412.22	0	6,472.29	Incomplete

Bottom 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
19	272	Bashneft	No Public Data	3,926.62	-	7,086.52	No Public Data
20	273	Tatneft	No Public Data	3,926.62	-	7,086.52	No Public Data
21	277	Surgutneftegas	No Public Data	3,926.62	-	7,086.52	No Public Data
22	278	Oil Company Lukoil	No Public Data	3,926.62	-	7,086.52	No Public Data
23	286	Fedgrid Coof Ungsy	No Public Data	9,036.54	-	10,342.03	No Public Data

GEOGRAPHICAL 23

ANALYSIS

Spotlight on: China Top 5

Figure 18. continued

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	126	China Telecom	No Public Data	121.62	-	157.34	No Public Data
2	135	Tsingtao Brewery	No Public Data	139.63	-	567.65	No Public Data
3	148	China Vanke	No Public Data	418.28	-	684.14	No Public Data
4	150	Haitong Securities Co.	No Public Data	418.28	-	684.14	No Public Data
5	151	Citic Securities	No Public Data	418.28	-	684.14	No Public Data

Bottom 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
32	291	China Railway Con.	No Public Data	16,462.39	-	17,527.85	No Public Data
33	292	China Railway Group	No Public Data	16,462.39	-	17,527.85	No Public Data
34	294	China Natbldgmrah	No Public Data	16,462.39	-	17,527.85	No Public Data
35	295	China Commsconh	No Public Data	16,462.39	-	17,527.85	No Public Data
36	297	Anhui Conch Cement	No Public Data	16,462.39	-	17,527.85	No Public Data

Spotlight on: Hong Kong (China) Top 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	3	Lenovo Group	91,593	4.23	4	161.64	Complete & Verified
2	8	HK Exs & Clear	11,137	11.73	2	277.59	Complete & Verified
3	10	Hopewell Holdings	37,382	187.84	1	453.70	Complete & Verified
4	16	Cathay Pacific Airways	16,340,400	1,287.04	0	2,524.56	Complete & Verified
5	22	Swire Pacific	16,865,559	3,602.58	0	4,668.04	Complete & Verified

Bottom 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
77	281	Guangdong Investment	No Public Data	6,421.64	-	7,727.13	No Public Data
78	288	China Respower Holdings	No Public Data	9,036.54	-	10,342.03	No Public Data
79	289	Cheung Kong Infrhdg	No Public Data	9,036.54	-	10,342.03	No Public Data
80	296	China Ste.Con.Intl.Hdg.	No Public Data	16,462.39	-	17,527.85	No Public Data
81	299	Nws Holdings	No Public Data	16,462.39	-	17,527.85	No Public Data

GEOGRAPHICAL 24

ANALYSIS

Spotlight on: India

Top 5

Figure 18. continued

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	4	Infosys	178,952	35.65	2	193.06	Complete & Verified
2	5	HCL Technologies	170,758	59.48	2	216.89	Complete & Verified
3	6	Wipro	361,603	63.80	6	221.21	Complete & Verified
4	12	Larsen & Toubro	672,481	71.02	2	1,136.48	Complete & Verified
5	17	Reliance Industries	25,698,523	531.23	-	3,691.14	Complete & Verified

Bottom 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
53	287	Power Grid Corpof India	No Public Data	9,036.54	-	10,342.03	No Public Data
54	290	NTPC	No Public Data	9,036.54	-	10,342.03	No Public Data
55	293	Jaiprakash Associates	No Public Data	16,462.39	-	17,527.85	No Public Data
56	298	Grasim Industries	No Public Data	16,462.39	-	17,527.85	No Public Data
57	300	Asian Paints	No Public Data	16,462.39	-	17,527.85	No Public Data

Spotlight on: South Africa

Top 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	2	Vodacom Group	491,563	68.15	1	103.87	Complete & Verified
2	11	Barloworld	197,489	28.62	2	1,094.08	Complete & Verified
3	20	Kumba Iron Ore	910,000	159.02	3	4,219.09	Complete & Verified
4	23	Anglogold Ashanti	4,445,000	788.17	0	4,848.24	Complete & Verified
5	24	Afnrainbow Mrls	1,737,068	840.73	3	4,900.80	Complete & Verified

Bottom 5

Country Rank	ET Rank	Company Name	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
41	152	Redefine Properties	No Public Data	418.28	-	684.14	No Public Data
42	157	Rand Merchant Hldgs	No Public Data	418.28	-	684.14	No Public Data
43	164	Growthpoint Props	No Public Data	418.28	-	684.14	No Public Data
44	171	RMB	No Public Data	418.28	-	684.14	No Public Data
45	214	Shoprite	No Public Data	130.51	-	1,368.03	No Public Data

SECTORAL 25 ANALYSIS

Sector: Oil & Gas

Figure 19.

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Reliance Industries	IN	25,698,523	531.23	0	3,691.14	Complete & Verified
2	OC Rosneft	RU	43,800,000	702.17	2	3,862.07	Complete & Verified
3	Sasol	ZA	65,920,000	3,926.62	1	7,086.52	Complete & Verified

Sector: Basic Materials

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Sterlite Inds	IN	293,427	53.16	0	4,113.23	Complete & Verified
2	Kumba Iron Ore	ZA	910,000	159.02	3	4,219.09	Complete & Verified
3	Vale	BR	16,900,000	335.31	5	4,395.39	Complete & Verified

Sector: Industrials

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Barloworld	ZA	197,489	28.62	2	1,094.08	Complete & Verified
2	Larsen & Toubro	IN	672,481	71.02	2	1,136.48	Complete & Verified
3	Swire Pacific	HK	16,865,559	3,602.58	0	4,668.04	Complete & Verified

Sector: Consumer Goods

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Natura	BR	7,927	2.90	1	430.92	Complete & Verified
2	Li & Fung	BR	32,120	1.60	0	429.61	Complete & Unverified
3	Steinhoff Intl	ZA	745,195	146.90	0	574.91	Complete & Unverified

Sector: Health Care

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Mediclinic International	ZA	169,950	77.42	3	223.19	Complete & Unverified
2	Amil On	BR	902	0.24	1	146.01	Incomplete
3	Aspen Phmcrhdg	ZA	48,044	33.29	0	179.07	Incomplete

SECTORAL 26

ANALYSIS

Sector: Consumer Services

Figure 19. continued

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Grupo Pão de Açúcar	BR	133,506	5.87	2	1,243.38	Complete & Verified
2	Cathay Pacific Airways	HK	16,340,400	1,287.04	0	2,524.56	Complete & Verified
3	Clicks Group	ZA	2,977	1.64	1	1,239.15	Complete & Unverified

Sector: Telecommunications

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Vodacom Group	ZA	491,563	68.15	1	103.87	Complete & Verified
2	Tim Part	BR	12,685	1.52	4	37.24	Incomplete
3	Oi	BR	76,712	15.30	0	51.03	Incomplete

Sector: Utilities

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	CPFL Energia	BR	211,854	33.98	3	1,339.47	Complete & Verified
2	CLP Holdings	HK	44,450,000	3,759.82	0	5,065.31	Complete & Verified
3	Power Assets Holdings	HK	8,630,000	6,557.23	0	7,862.71	Complete & Verified

Sector: Financials

Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	BMF Bovespa	BR	773	0.75	4	266.61	Complete & Verified
2	HK Exs & Clear	HK	11,137	11.73	2	277.59	Complete & Verified
3	Hopewell Holdings	HK	37,382	187.84	1	453.70	Complete & Verified

Sector: Technology

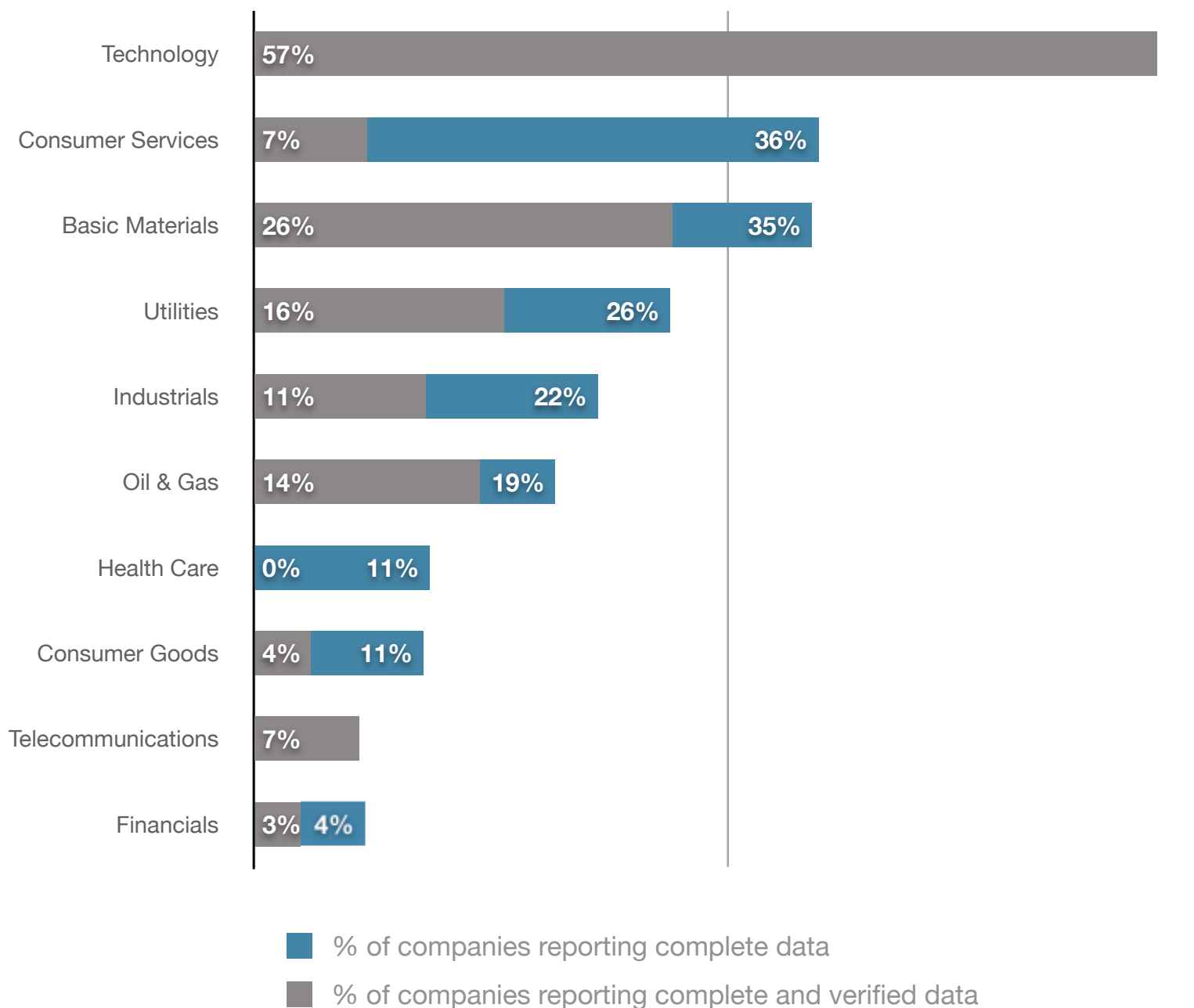
Sector Rank	Company Name	Cntry	Absolute Emissions tCO ₂ e (Scope 1+2)	Scope 1+2 Intensity	Scope 3 Categories disclosed	Scope 1+2 + 50% Inferred S3 Intensity	Disclosure & Verification status
1	Lenovo Group	HK	91,593	4.23	4	161.64	Complete & Verified
2	Infosys	IN	178,952	35.65	2	193.06	Complete & Verified
3	HCL Technologies	IN	170,758	59.48	2	216.89	Complete & Verified

SECTORAL 27 ANALYSIS

Summary

Sectors leading the field of disclosure

Figure 20.



The Rankings show that there is vast room for improving GHG emissions reporting and verification throughout the BRICS and its dominant industry sectors.

Technology and Telecoms are the only sectors within which 100% of companies reporting complete data have it verified by an external

source. Although whilst Technology companies report an impressive 57% complete data, only 7% of Telecoms companies are complete.

The sector with the lowest percentage of companies reporting complete data is Financials. The Health Care sector contains no verified data at all.

DISCUSSION 28

KEY POINTS

WITHOUT COMPLETE AND VERIFIED DATA
WE CANNOT ACCURATELY PAINT A PICTURE
OF THE EMISSIONS LANDSCAPE

CONSIDERING BUSINESS' MOTIVATION TO
PROVIDE SHAREHOLDER RETURN, WE CAN
INCENTIVISE CHANGE THROUGH AFFECTING
A COMPANY'S SHARE PRICE

Non-Sectoral approach

The ET Carbon Ranking methodology is based on a non-sectoral approach as it is intended to create incentives for disclosure and emissions reduction across the board. Under this wider Environmental Tracking system, companies with higher intensities will experience greater downward pressure than those with low intensities, reflecting the science behind climate change mitigation dictating that absolute emissions have to be reduced.

Disclosure & Verification before intensity

It could be argued that the present Ranking does not accurately reflect the emissions landscape as the key determinant of positioning is disclosure and verification before intensity. However, without complete and verified data we cannot accurately paint a picture of the emissions landscape.

High intensity by definition

By definition some companies pollute more than others, moreover, many of these companies provide valuable and vital services to society. Yet without strong incentives to change, they will continue to carry out their activities in a way which is detrimental to the environment. Virtually all the technological advances needed to tackle climate change are already in existence, or are only a few years away with the necessary investment.

The only way we can expect these companies to invest in new technologies and employ new environmentally friendly policies is to provide them with an incentive to do so. The EIO argues that within the framework of the existing system this incentive must accord with a company's *raison d'être*: to maximise share price return. This can only be achieved by creating a system which influences share price according to the environmental costs of a company's actions.

REPORTING 29

LANDSCAPE

Global Reporting landscape

Despite significant action being taken in the past twenty years, we still have a long way to go. With large differences between regions, large differences between developed and developing countries as well as large differences between companies, there is vast room for improvement, innovation and collaboration. But in order to improve, we should first know where we are. That is why monitoring of and (complete) reporting on GHG emissions is crucial to taking the next steps.

Sustainability Reporting

Sustainability reporting has grown rapidly over the past two decades as companies supplement their annual reports with issues pertaining to corporate social responsibility.

However, the lack of a universally accepted or mandatory standard concerning corporate responsibility disclosure means both reporting formats and content vary widely.

A large number of Europe's top companies follow the framework set out by the Global Reporting Initiative. This clearly defines the disclosure of environmental, social and governance indicators, including Greenhouse Gas emissions expressed as metric tonnes of CO₂ equivalent (tCO₂e). (See page 36 for more details). However, following GRI guidelines does not specifically require clear Scope 1 and 2 reporting.

The internationally recognised and accepted standard for Greenhouse Gas (GHG) reporting has been established by the Greenhouse Gas Protocol, and defines Greenhouse Gas emissions reporting by Scope 1, 2 and 3 emissions. However, as this report highlights companies do not always apply the standard correctly. Important issues of coverage and key calculation and reporting requirements are often not clearly stated or are hidden within the main document.

In 2000 the Carbon Disclosure Project launched an initiative to encourage corporate GHG disclosure. However, this information is not always included in sustainability reports or placed in the public domain.

SUSTAINABILITY REPORTING HAS GROWN RAPIDLY OVER THE PAST TWO DECADES AS COMPANIES SUPPLEMENT THEIR ANNUAL REPORTS WITH ISSUES PERTAINING TO CORPORATE SOCIAL RESPONSIBILITY

AS THE ET BRICS 300 CARBON RANKING HIGHLIGHTS, THERE ARE MAJOR DISCREPANCIES BETWEEN COMPANIES IN REGARD TO THE QUALITY OF REPORTING

► Scope 1 emissions:

All direct emissions

► Scope 2 emissions:

Indirect emissions generated from the purchase of electricity

► Scope 3 emissions:

All other indirect emissions, such as distribution of goods, transportation of purchased goods, transportation of waste, disposal of waste, employee commuting, business travel

REPORTING 30

LANDSCAPE

THERE ARE CURRENTLY WIDE VARIATIONS IN INTERPRETATION OF METHODS FOR THE MAJORITY OF VOLUNTARY SCHEMES

ERM (2010) NOTES THAT THERE ARE FEW INITIATIVES PROVIDING INCENTIVES SUCH AS LEAGUE TABLES OR FINANCIAL PENALTIES/REWARDS - A GAP THE EIO SEEKS TO ADDRESS DIRECTLY THROUGH ITS ET CARBON RANKINGS AND INDEX SERIES

Variations

As pointed out by the ERM (2010) study on GHG reporting methods and initiatives, “Voluntary methods are open to varying degrees of interpretation by the user whilst mandatory methods tend to be much more prescriptive. An example of this can be seen on the issue of boundary setting. Voluntary methods such as the WBCSD/WRI GHG Protocol, and voluntary reporting schemes such as CDP, allow the user to select the boundary based on a number of options (e.g. operational or financial control; equity share), to ensure maximum flexibility. By way of contrast, mandatory schemes and their associated calculation methods, such as those for the UK Carbon Reduction Commitment and the schemes linked to trading of emissions allowances or permits (e.g. EU ETS; JVETS), define quite precisely the boundary, to ensure consistency in reporting between organisations covered by the scheme.”

Gaps

Interestingly, the report notes that “few methods or initiatives provide incentives such as benchmarks, league tables and financial penalties/rewards”. This is a gap the EIO seeks to address through its Environmental Tracking (ET) Carbon Rankings and Index Series.

The report also draws attention to the “lack of clear statement of a ‘mandatory minimum’ GHG reporting requirements in most of the voluntary methods and initiatives”, suggesting that “most voluntary methods have shied away from being prescriptive on key issues or have put complex arrangements in place to ensure adaptability” in order to encourage maximum uptake (ERM 2010).

Please see the Reporting guidance section (pages 42-43) for suggestions on the EIO’s recommendations for how companies can report their GHG emissions more clearly.

EXEMPLARY 31

REPORT

Direct, Indirect Greenhouse Gas GRI EN16

Total direct and indirect greenhouse gas emissions by weight.

Direct and Indirect Greenhouse Gas (GHG) Emissions (in metric tonnes CO2 equivalent)	2011	2010	2009	2008	Company has targets for year:	C1
CO2 Direct	197,914	276,721	235,656	296,768		
CO2 Indirect Scope 2	2,199,564	2,125,986	2,380,946	2,381,447		
CH4 Direct						
N2O Direct	29,224	17,441	11,235	5,386		C5
HFCs Direct	65,637	42,289	14,566	13,060		C6
PFCs Direct	221,074	232,290	181,907	256,667		C7
CF6 Direct	13,960	9,549	13,291	8,452		
Total Direct (Scope 1)	527,809	578,290	456,655	580,333		
Scope 1 data coverage (e.g. as % of revenues, employees, etc...):	100	100	100	100		
Owned and leased operations						
Scope 1 estimated total (for 100% data coverage)						
Scope 1 emissions intensity per 100K revenue						
Total direct GHG emissions factored against base figure (please specify base figure here, e.g., revenue, volume or production, floor space area, etc):						
Total Indirect (Scope 2)	2,199,564	2,125,986	2,380,946	2,381,447		
Scope 2 data coverage (e.g. as % of revenues, employees, etc...):	100	100	100	100		
Owned and leased operations						
Scope 2 estimated total (for 100% data coverage)						
Scope 2 emissions intensity per 100K revenue						
Total Direct and Indirect GHG Emissions	2,727,373	2,704,276	2,837,601	2,961,780		
Subtotal Scope 3 (from GRI EN17 "GHG Scope 3 Emission")						
Total GHG Emissions	2,727,373	2,704,276	2,837,601	2,961,780		

Taken from IBM's website, this template clearly shows Scope 1 & 2 emissions and is easily accessible from the company's online GRI index (see next page), under the EN16 link.

IBM also provides its Scope 3 emissions information which is clearly referenced under EN17.

IBM ranks 50th in the ET North America 300 and 187th in the Global 800.

TEMPLATE



3.6 Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.

3.7 State any specific limitations on the scope or boundary of the report⁸.

If boundary and scope do not address the full range of material economic, environmental, and social impacts of the organization, state the strategy and projected timeline for providing complete coverage.

3.8 Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.

3.9 Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.

Explain any decisions not to apply, or to substantially diverge from, the GRI Indicator Protocols.

ASSURANCE

3.13 Policy and current practice with regard to seeking external assurance for the report. If not included in the assurance report accompanying the sustainability report, explain the scope and basis of any external assurance provided. Also explain the relationship between the reporting organization and the assurance provider(s).

Using a Global Reporting Initiative index helps anyone reading a report to navigate it quickly and easily.

To the left are the key indicators the EIO focuses on to determine:

- ✓ the scope of a company report
- ✓ whether or not any material elements have been excluded
- ✓ whether it has been assured by a third-party
- ✓ whether the company is reporting its Scope 1, 2 and 3 emissions.

ASPECT: EMISSIONS, EFFLUENTS, AND WASTE

CORE **EN16** Total direct and indirect greenhouse gas emissions by weight.

CORE **EN17** Other relevant indirect greenhouse gas emissions by weight.

REPORTING 33

EXAMPLES

Overview of Scope 3 emissions by the BASF Group for 2012 (in accordance with the GHG Protocol)

Nr.	Category	GHG Emissions
		[CO ₂ equivalents in millions of tons]
1	Purchased goods and services	46.7
2	Capital goods	1.4
3	Fuel- and energy-related activities	2.8
4	Upstream transportation and distribution	1.9
5	Waste generated in operations	0.6
6	Business travel	0.3
7	Employee commuting	0.3
8	Upstream leased assets	0.2
9	Downstream transportation and distribution	1.3
10	Processing of Sold Products	Undetermined*
11	Use of sold products	57.4
12	End-of-life treatment of sold products	16.4
13	Downstream leased assets	Not relevant***
14	Franchises	Not relevant***
15	Investments	0,0****

Explanations:

*For a chemicals company at the beginning of the value chain, such as BASF, the effort to determine Scope 3 emissions from the further processing of our products (Category 11 Processing of Sold Products) is not reasonable.

** Expert estimate. The activities of BASF as a lessee account for less than 20% of our activities in the area of Leased Assets Upstream (Category 8).

*** BASF does not engage in franchising activities.

**** Data from 2009.

We have summarized the procedure and assumptions in the calculation of emissions in the named categories in our emission report based on the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standards template

» [Read more...](#) (pdf, 134 kb)

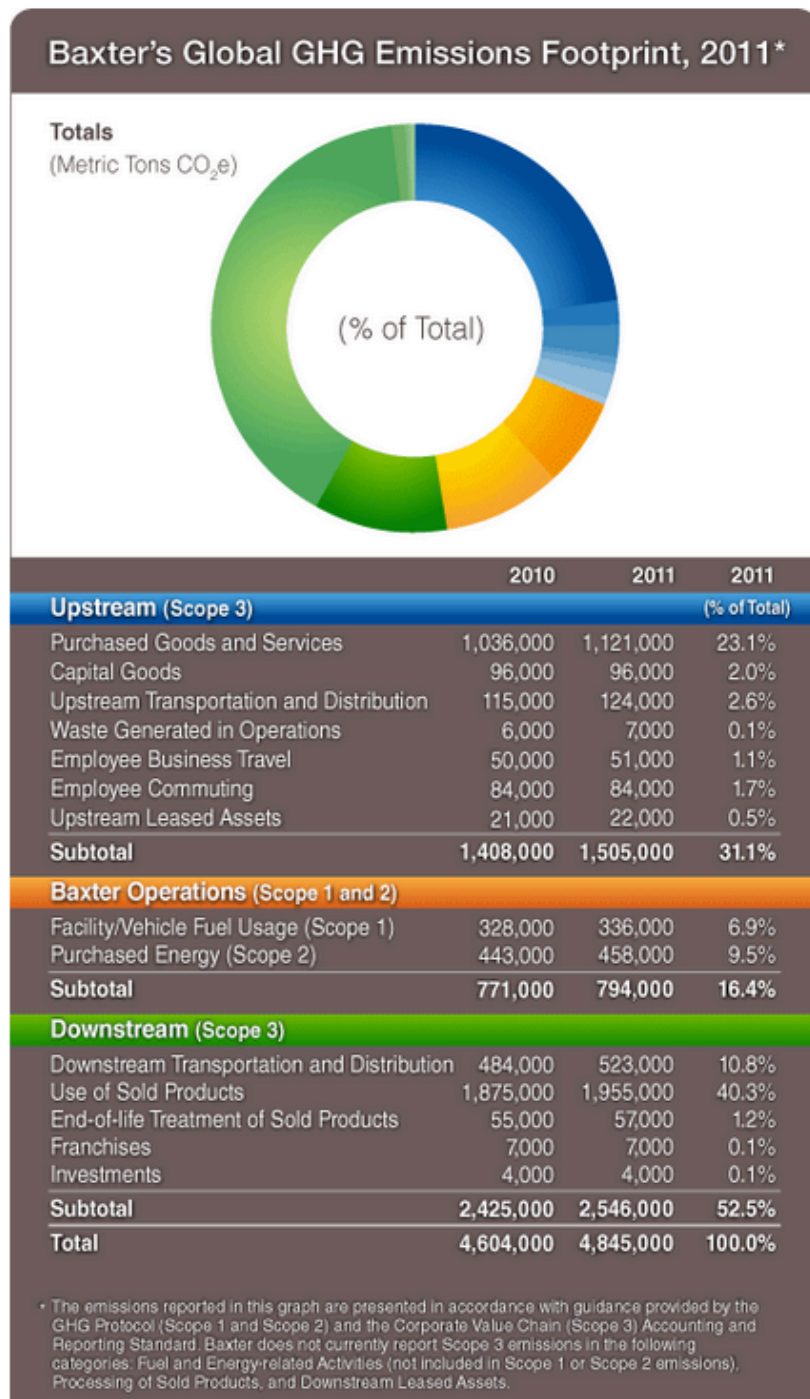
» [Standards Greenhouse Gas Protocol standards](#)

In this example we see the company disclose fully on all 15 GHG Protocol Scope 3 categories. The company clearly identifies each category, reports its emissions and explains any omissions.

BASF is the only company in the ET Carbon Rankings series to report on all 15 Scope 3 categories, and therefore enjoys pole position in both the ET Global 800 and ET Europe 300 for the second time running.

REPORTING 34

EXAMPLES



Here we see a very good example of clear reporting, across all Scopes adhering to the GHG Protocol terminology and presenting information over multiple years for ease of comparison.

Baxter International ranks 35th in the ET Global 800 and 13th in the ET North American 300.

- ▶ **Report Scope 1, 2 & 3 emissions following GHG protocol guidelines**
- ▶ **Ensure emissions data is publicly available in CSR/Sustainability reports/Integrated Annual report and online**
- ▶ **Have emissions data verified by an independent third party to a recognised standard**
- ▶ **Ensure verification certificates are public**

Companies can easily improve their standings within the ET Carbon Rankings by following several simple steps:

1. Publishing emissions data for Scopes 1, 2 and 3 in the public domain, in a clear and accessible manner, either on the company website or in a Sustainability Report, Annual report, Integrated Annual report or ideally, all of those that apply.
2. Ensuring this information has been externally verified to a reasonable standard of assurance, ideally against a specific GHG standard such as ISO 14064-3, but at least in accordance with a general assurance standard, such as ISAE 3000 (the International Standard on Assurance Engagement).
3. Calculate Scope 3 emissions comprehensively according to the new GHG protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. The latest information on verification of Scope 3 can be found at the GHG Protocol and ISO websites.
4. Ensure that any verification statement is publicly available and included in the relevant Sustainability Report or Annual Report, as well as ensuring it can be easily found on your company's website.

One of the primary aims of the EIO's series of Rankings is to ensure that reliable GHG emissions data is publicly available and we applaud all companies making a serious effort to reach this standard.

Encouraging clearer reporting

The key areas which are identified by the various bodies of research carried out in the field of GHG emissions reporting, including by the EIO, suggest that there is an urgent need for:

- ▶ Standardised reporting
- ▶ More emphasis on the verification of GHG emissions data reported by companies

The following page outlines the EIO's proposal for the ET Reporting template initiative.

ET REPORTING 36

TEMPLATE



The EIO, is seeking sponsorship for its forthcoming Environmental Tracking (ET) Reporting Template initiative. The ET Reporting Template will provide companies with a cloud-based, simple, straightforward and standardised way of reporting their greenhouse gas emissions in the public domain. The EIO is offering sponsors the opportunity to showcase their brand while supporting a cutting edge and urgently needed piece of infrastructure in the carbon reporting landscape.

Below is an example of the points the template will seek to cover.

ENVIRONMENTAL TRACKING REPORTING TEMPLATE

Reporting Period:

1 January 2011 to 31 December 2012: Yes/No? _____

If other please specify _____

	Metric tonnes of CO2e (tCO2e)	
Scope 1		
Scope 2		
Scope 3		
Scope 3 Upstream		
Purchased goods and services		
Capital Goods		
Fuel - and Energy - related Activities not included in Scope 1+2		
Transportation & Distribution (Upstream)		
Waste Generation in Operations		
Business Travel		
Employee Commuting		
Leased Assets (Upstream)		
Investments		
Scope 3 Downstream		
Transportation & Distribution (Downstream)		
Processing of Sold Products		
Use of Sold Products		
End-of-Life Treatment of Sold products		
Leased Assets (Downstream)		
Franchises		
Total gross emissions		
Green tariff Energy Purchased		-
Total net emissions		

ET REPORTING 37 TEMPLATE



While many companies disclose their greenhouse gas emissions through third party databases such as the Carbon Disclosure Project, there is currently no standardised reporting template available for companies to disclose their emissions on their websites, corporate social responsibility reports and/or annual reports. With many variations and inconsistencies in reporting styles and practices, the vast majority of information disclosed by companies on their greenhouse gas emissions is extremely difficult to interpret and makes cross comparison virtually impossible. In order to address this issue the EIO is proposing its ET Reporting Template initiative.

ENVIRONMENTAL TRACKING REPORTING TEMPLATE (Continued)

Other greenhouse gases

Does your company produce any greenhouse gases which are not covered by the Kyoto basket of 6 gases? Yes/No?

If you have answered yes to the previous question what percentage do they represent of the total and have they been included in the Scope 1, 2 and 3 calculations listed above?

Boundary setting:

What reporting boundary method have you adopted under the terms of the GHG Protocol?

Scope of Reporting: Scope 1 & 2

Do the gross emissions reported for Scope 1 & 2 as defined by the GHG Protocol represent 100% of your company's emissions for these Scopes? Yes/No?

If you have answered no to the previous question, what percentage of your company's operations do they represent?

Scope of Reporting: Scope 3

How many Scope 3 categories does your company disclose data for?

Please attach a full breakdown with the percentage coverage for each

Verifications/Assurance (to be completed by an independent third party)

Name of Verifier: _____

Which standard has been used to assure the data? (E.g. ISO14064, AA1000AS etc)

Which Scopes have been verified? _____

If the company is reporting Scope 3 emissions, has it covered all of the Scopes accurately (for Scope 3 please refer to the GHG Protocol new Corporate Value Chain (Scope 3) Accounting and Reporting Standard), including any GHGs not covered by the GHG Protocol which may be material? Yes/No?

Are there any material issues with the numbers represented for the company under Scope 1, 2 or 3? Yes/No?

Is the data presented by the company representative of the company's entire scope of operations? Yes/No? If no approximately what % does it cover?

Please state any other further comments or qualifications

Please attach the verification full statement.

EMISSIONS 38

LANDSCAPE

BRICS versus BASICs

The **BRICS** (Brazil, Russia, India, China, and South Africa) is a grouping of emerging economies that have shown particularly rapid economic development in recent years, and have adopted regulatory policies aimed at liberalising their economies. Already, the BRICS represent over 25% of world GDP, up from 18% in 1990. In 2008, these five countries represented 31% of global energy use and 35% of CO₂ emissions from fuel combustion. These shares are likely to rise further in coming years if their strong economic performance continues (IEA, 2010).

Russia has a different profile from the other members of this grouping, from both an economic and an emissions perspective, having industrialised far earlier than the other BRICS. It has a much higher GDP per capita as well as higher standards of living and education, and being an Annex 1 country in the Kyoto Protocol bound Russia to make GHG emissions reductions during the first commitment period while the other BRICS would not be obligated until the second phase beginning in 2012. The latter fact aligns Russia more closely with developed countries than the other BRICS when it comes to climate change mitigation.

Recognising the common climate challenges facing them, Brazil, South Africa, India and China are now part of a geo-political alliance known as **BASIC** (Building and Strengthening Institutional Capacities on Climate Change: www.basic-project.net). This is a forum for collaboration among experts from various developing countries working on adaptation and mitigation action plans. These countries have taken a united position on emission reductions, supporting the establishment of quantified emission reduction commitments for the continuation of the Clean Development Mechanism (CDM) with no gap between the first and second commitment periods.

Domestically the BASICs are all exploring market-based mechanisms. For example, India is currently setting up a Perform-Achieve-Trade (PAT) scheme promoting energy efficiency, and Brazil is considering the development of regional carbon markets.

THE BRICS (BRAZIL, RUSSIA, INDIA, CHINA AND SOUTH AFRICA) IS A GROUPING OF EMERGING ECONOMIES THAT HAVE SHOWN PARTICULARLY RAPID ECONOMIC DEVELOPMENT IN RECENT YEARS

RECOGNISING THE COMMON CLIMATE CHALLENGES FACING THEM, BRAZIL, SOUTH AFRICA, INDIA AND CHINA ARE NOW PART OF A GEO-POLITICAL ALLIANCE KNOWN AS BASIC (BUILDING AND STRENGTHENING INSTITUTIONAL CAPACITIES ON CLIMATE CHANGE

EMISSIONS 39

LANDSCAPE

AN INTERNATIONAL STANDARD FOR THE MEASUREMENT, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSIONS, IS ON THE AGENDA FOR THE DURBAN TALKS IN 2011

IN TERMS OF TOTAL CARBON DIOXIDE EMISSIONS, CHINA AND INDIA ARE THE FIRST AND THIRD LARGEST EMITTERS GLOBALLY, THOUGH ON A PER CAPITA BASIS BOTH ARE FAR DOWN THE LIST

The BASIC governments also agree that without support from the developed world, it will not be possible for developing countries to implement policies and take appropriate measures to mitigate climate change.

In 2010, the Cancun summit established the Green Climate Fund (GCF) for this purpose. The GCF handles the funds and is charged with its distribution, but has not provided a mechanism to raise the money - its goals of \$30 billion for 2010-2012 and \$100 billion annually by 2020 are making slow progress. The final details of the administration of the GCF, as well as the need for the internationally standardised measurement, reporting and verification of greenhouse gas emissions, are on the agenda for COP17 in Durban in November 2011.

Asian giants

In terms of total carbon dioxide emissions, China and India are the first and third largest emitters globally, according to data published by the US Energy Information Administration (US EIA), though on a per capita basis both are far down the list. Asian neighbours China and India are often cited together in the climate change debate, with similarities such as a large population, expanding economies and significant production activities of developed countries being outsourced to these countries. However, significant differences exist, such as the fact that China's total and per capita carbon dioxide emissions are much higher than India's, as is its GDP per capita.

Despite their rapid economic growth, both China and India are relatively poor countries compared with developed countries, making raising incomes a high priority and hence it seems unlikely that either country will accept binding stringent emission reductions targets in the foreseeable future. Both countries have indicated a preference for intensity targets (GHGs emissions per unit of GDP) over absolute targets: China has pledged to reduce the emissions intensity of its economy by 40/45% in 2020 compared to 2005, and India by 20/25%. In both cases these emissions intensity targets appear to be part of a national strategy to increase energy efficiency rather than part of a deliberate plan to reduce global warming (Masseti, 2011).

EMISSIONS 40

LANDSCAPE

Chinese Emission Landscape

China has historically argued that industrialised countries should lead in mitigating emissions since they bear primary responsibility for the historical build-up of GHGs. This principle of 'common but differentiated' responsibilities was agreed in the United Nations Framework Convention on Climate Change.

However, China is also taking significant domestic action to reduce its own GHG emissions and to participate in the CDM regime. In June 2007, China released its National Climate Change Program, outlining activities, incentives, and targets to mitigate GHG emissions and to adapt to the consequences of potential climate change, including lowering its energy intensity, increasing renewable energy use by 2020, increasing energy efficiency standards, promoting the development of nuclear power, and development of a coal-bed methane capture industry.

National climate change goals have continued to be included in China's Five-Year Plan framework. In 2009 the Chinese government announced the target to cut the country's CO₂ emissions per unit GDP in 2020 by 40% - 45% compared to the level of 2005, and Climate Action Tracker (www.climateactiontracker.org) reports that recent energy and emissions data indicates that China will exceed this pledge, though faster than expected economic growth is likely to lead to total emissions in 2020 being higher than previous estimates. Revised targets for the period 2011-2015 aim for a decrease of 17% in China's carbon dioxide emissions per unit of GDP, an increase in the share of non-fossil fuels in primary energy consumption, and a decrease of 16% in energy consumption relative to GDP.

China's commitments for emissions control over the next decade are not contingent on the international negotiations or on commitments by any other country. It is exploring new policy options, including carbon taxes and carbon markets, and new market-based mechanisms to control the increase in GHGs. In July 2011 the Chinese government announced that it will pilot a

CHINA HAS HISTORICALLY ARGUED THAT INDUSTRIALISED COUNTRIES SHOULD LEAD IN MITIGATING EMISSIONS SINCE THEY BEAR PRIMARY RESPONSIBILITY FOR THE HISTORICAL BUILD-UP OF GHGS

CHINA'S COMMITMENTS FOR EMISSIONS CONTROL OVER THE NEXT DECADE ARE NOT CONTINGENT ON THE INTERNATIONAL NEGOTIATIONS OR ON COMMITMENTS BY ANY OTHER COUNTRY

EMISSIONS 41

LANDSCAPE

IN JULY 2011 THE CHINESE GOVERNMENT ANNOUNCED THAT IT WILL PILOT A CARBON TRADING SCHEME AND BUILD A MARKET FOR EMISSIONS TRADING TO MEET POLLUTION GOALS

INDIA HAS REJECTED ATTEMPTS AT IMPOSING AN EMISSIONS VERIFICATION SCHEME AND IS INSTEAD PUSHING FOR RELAXED RESTRICTIONS ON INTELLECTUAL PROPERTY RIGHTS FOR CLIMATE MITIGATION AND ADAPTATION TECHNOLOGIES

INDIA ANNOUNCED ITS FIRST NATIONAL ACTION PLAN ON CLIMATE CHANGE IN 2008, LISTING TECHNOLOGY POLICIES BUT NO TARGETS FOR REDUCTION OF EMISSIONS TOTAL OR INTENSITY

carbon trading scheme and build a market for emissions trading to meet pollution goals. To get the scheme going, Beijing will widen the difference in electricity tariffs between power-intensive sectors and other industries, improve laws, regulation and taxation policies to encourage energy conservation, and ask financial groups to fund low-carbon emission projects.

Indian Emissions Landscape

Like China, **India** has consistently resisted any attempts for hard limits on its own GHG emissions expecting developed countries to take the lead. India has also rejected attempts at imposing an emissions verification scheme and is instead pushing for relaxed restrictions on intellectual property rights for climate mitigation and adaptation technologies, equitable access to sustainable development practices, and unilateral trade measures.

India announced its first National Action Plan on Climate Change in 2008, listing technology policies such as energy efficiency, mandatory energy audits for large energy consuming industries, and development of solar energy, but no targets for reduction of emissions total or intensity. Domestic policy has continued to develop with an Expert Group on Low Carbon Strategies for Inclusive Growth, a multi-stakeholder group given the mandate to develop a roadmap for India to achieve low-carbon development. The government is also trying to incentivise industry to move towards better energy efficiency and lower emission procedures by introducing market-driven initiatives, such as the Perform, Achieve & Trade (PAT) system, which aims to enhance cost effectiveness of improvements in energy efficiency in energy - intensive large industries and facilities through certification of energy savings that could be traded, and a federal approach to mitigation and adaptation with State-level Action Plans that require states to implement concrete actions to address climate change.

India has not mandated any GHG emissions reduction targets for industrial sectors to date but Indian businesses appear to have been proactive

EMISSIONS 42

LANDSCAPE

in setting their own voluntary targets. The majority of Carbon Disclosure Project (CDP) respondents have assigned a senior level committee to develop their climate change strategy, and are increasingly participating in advocacy on climate change.

Brazilian Emission Landscape

Brazil has the lowest total CO₂ emissions of any of the BRICS. Its major sources of GHG emissions are unsustainable land use, large livestock numbers, and large scale use of fossil fuels in its mineral processing industries as well as deforestation. Brazil's energy sector actually contributes little to its GHG emissions since the majority of its power comes from hydroelectricity, of which Brazil is one of the world's largest producers. Brazil's energy matrix is one of the cleanest in the world with renewables accounting for 44% of its total primary energy supply (IEA, 2010).

In a similar stance to China and India, until recently the Brazilian government took the view that since the accumulation of GHG in the atmosphere was principally the fault of the developed countries, they must take the majority of necessary actions to tackle the problem. As Brazil's vulnerability to climate change became more apparent it established a 'National Plan on Climate Change' in 2008 that aimed to increase energy efficiency, maintaining a high proportion of Brazil's electricity supply from renewable sources, increase use of biofuels in the transport sector, reduce the rate of de-forestation, and eliminate net loss of forest coverage. A Business Council for Sustainable Development aims to turn these goals into practical initiatives.

The Brazilian National Fund on Climate Change was established in December 2009 to allocate a portion of the government's revenue from oil production to mitigate the impact of oil production and combat climate change by providing grants and loans to adaptation and mitigation initiatives. The fund is overseen by the Ministry of Environment and operated by the National Social and Economic Development Bank.

BRAZIL HAS THE LOWEST TOTAL CO₂ EMISSIONS OF ANY OF THE BRICS

BRAZIL'S ENERGY MATRIX IS ONE OF THE CLEANEST IN THE WORLD WITH RENEWABLES ACCOUNTING FOR 44% OF ITS TOTAL PRIMARY ENERGY SUPPLY

THE BRAZILIAN NATIONAL FUND ON CLIMATE CHANGE WAS ESTABLISHED IN DECEMBER 2009 TO ALLOCATE A PORTION OF THE GOVERNMENT'S REVENUE FROM OIL PRODUCTION TO MITIGATE THE IMPACT OF OIL PRODUCTION AND COMBAT CLIMATE CHANGE

EMISSIONS 43

LANDSCAPE

US EIA DATA FOR 2009 PLACES SOUTH AFRICA TWELFTH IN THE RANKING OF COUNTRIES BY THEIR TOTAL CARBON DIOXIDE EMISSIONS, WITH THE COUNTRY AS A WHOLE RESPONSIBLE FOR 451 MILLION TONS CO₂

SOUTH AFRICA HAS LAID OUT A NATIONAL CLIMATE CHANGE RESPONSE STRATEGY, WHICH OUTLINES GUIDELINES AND A SUSTAINABLE ENERGY PROGRAMME FOR KEEPING AN INVENTORY OF GHG EMISSIONS

THE STATUS OF SOUTH AFRICA AS THE MOST ECONOMICALLY DEVELOPED AND LARGEST EMITTER OF GHG EMISSIONS AMONG SADC NATIONS, PLACES IT AS THE DE FACTO LEADER OF SUSTAINABILITY POLICY IN SUB-SAHARAN AFRICA

South African Emission Landscape

South Africa acknowledges the threat posed by climate change due to GHG emissions and has begun to address the issue through national regulations, regional coordination with other Southern African Development Community (SADC) nations, and participation in international initiatives. US EIA data for 2009 places South Africa twelfth in the ranking of countries by their total carbon dioxide emissions, with the country as a whole responsible for 451 million tons CO₂. The last year that the South African Department of Environmental Affairs and Tourism published emissions data by sector was 1994, which indicated that the energy sector was responsible for the bulk of the total emissions, due in large part to South Africa's reliance on domestic coal for fuel. The industrial sector, transportation, agricultural processes, and waste management account for approximately a quarter of the total carbon equivalent emissions.

In 1997, South Africa ratified and adopted the United Nations Framework Convention on Climate Change and the Kyoto Protocol. It has created a National Committee on Climate Change and laid out a National Climate Change Response Strategy, which outlines guidelines and a sustainable energy programme for keeping an inventory of GHG emissions.

South Africa now publishes an annual Environmental Sustainability Indicators Technical Report, which defines the efforts and actions the government and industry must take to create an effective framework for the monitoring and reporting of GHG emissions along with identifying areas of progress and problems. The report touches on 20 environmental sustainability indicators gleaned through analysis of a wide array of data sets.

The status of South Africa as the most economically developed and largest emitter of GHG emissions among Southern African Development Community (SADC) nations, places it as the de facto leader of sustainability policy in Sub-Saharan Africa. The current focus of the SADC is on mitigating the effects of climate change already present in Southern Africa while establishing a system of linking sustainability methodologies and regulations between countries.

EMISSIONS 44

LANDSCAPE

Russian Emission Landscape

Russia is the world's fourth highest carbon dioxide emitter based on US EIA data, ranking third amongst the BRICS in 2009, below both China and India. On a per capita basis, however, Russia has the highest CO₂ emissions of the BRICS countries with 11.2 tons CO₂ per capita in 2009 (EIA, 2010). A significant amount of Russia's GHG emissions derive from its large petroleum industry, particularly from its natural gas extraction and distribution processes.

In October 2004, the Russian Parliament ratified the country's signature of the Kyoto Protocol, agreeing to limit its GHG emissions by the end of the Protocol's first commitment period (2008-2012) at the level of country's emissions in 1990. However, Russia's GHG emissions fell by 34% between 1990-1998, due to the economic downturn after the collapse of the former Soviet Union. Gradual increases as a result of economic recovery are expected to be sustained, and future emission predictions for Russia suggest that the 'Business as Usual' scenario will result in emissions in 2020 being 25% below 1990 levels (Wagner et al., 2009). Therefore, even Russia's revised Kyoto pledge in 2010, to reduce emissions by 15-25% relative 1990 levels by 2020, will likely require no additional investments or structural reforms (World Bank, 2008).

Domestic policy in Russia has lagged that of the other BRICS, though it has a number of energy efficiency policies, including the 2009 Energy Efficiency Legislation, and substantial participation in Joint Implementation Mechanism projects under the Kyoto Protocol. In December 2009, a non legally binding Climate Doctrine was approved. It set out national strategic guidelines and targets and formed a foundation for future climate change-related policy.

Although Russia has participated in international climate negotiations to date, in 2011 the Russian government indicated that it would not join a new Kyoto agreement post 2012, as it would be unlikely to require emissions cuts from developing countries.

ON A PER CAPITA BASIS RUSSIA HAS THE HIGHEST CO₂ EMISSIONS OF THE BRICS COUNTRIES WITH 11.2 TONS CO₂ PER CAPITA IN 2009

RUSSIA'S REVISED KYOTO PLEDGE IN 2010, TO REDUCE EMISSIONS BY 15-25% RELATIVE 1990 LEVELS BY 2020, WILL LIKELY REQUIRE NO ADDITIONAL INVESTMENTS OR STRUCTURAL REFORMS

IN 2011 THE RUSSIAN GOVERNMENT INDICATED THAT IT WOULD NOT JOIN A NEW KYOTO AGREEMENT POST 2012

ET INDEX 45

SERIES



Moving forward: The ET Index Series

The ET Carbon Rankings represent the first phase of the Environmental Tracking concept, paving the way for the ET Index Series, which will follow soon after.

The ET Index Series has been designed to provide the investment community with a tool to encourage transparency and emission reductions on a global scale. Through the creation of a mainstream financial product, in the form of a series of broad market indexes, the world's largest companies can be incentivised to cut their emissions. This is done by re-weighting companies in the index series, either positively or negatively, on a sliding scale, according to their position in the ET Carbon Ranking.

As pointed out by the recent Mercer report on Climate Change Scenarios and the Implications for Asset Allocation (Mercer 2011), the use of sustainability themed indices in passive portfolios is identified as one way investors can take action to improve their portfolio resilience to climate-related risks.

However, the key question, which the EIO seeks to address through its Index series, is how to create an investable index which can have sufficient appeal to investors, evidently concerned with the bottom line. This is why the ET Index Series has been created to mirror the risk/reward profile of their non weight-adjusted counterparts, whilst still applying pressure to companies across the board to reduce their emissions.

The potential of ET Index Series to tackle GHG emissions rests on the logic that if a significantly large pool of investors track the indexes, it will alter the supply and demand for these companies' shares based on their position in our Ranking. This effectively increases the cost of emitting Greenhouse Gases, incentivising companies to take action.

NATIONAL INDEXES:

ET UK 100

REGIONAL INDEXES:

ET EUROPE 300

ET NORTH AMERICA 300

ET ASIA-PACIFIC 300

ET BRICS 300

GLOBAL INDEXES:

ET GLOBAL 800

THROUGH APPLYING PRESSURE TO A
COMPANY'S SHARE PRICE, THE ET
INDEX SERIES AIMS TO RAISE THE
COST OF CARBON FOR COMPANIES

GLOSSARY 46

OF TERMS

BAU: Business As Usual

BASIC: Building and Strengthening Institutional Capacities on Climate Change

BRICS: Brazil, Russia, India, and China, and South Africa

CCC: Committee on Climate Change

CDM: Clean Development Mechanism

CED: Clean Energy Dialogue

CO₂e: Greenhouse Gas emissions expressed as Carbon Dioxide (CO₂) Equivalents, meaning calculated to express their global warming potential in terms of CO₂.

CRC: Carbon Reduction Commitment

C(S)R: Corporate (Social) Responsibility

DECC: Department of Energy and Climate Change

EIO: Environmental Investment Organisation

ET: Environmental Tracking

EU ETS: EU Emissions Trading Scheme

GCF: Green Climate Fund

GDP: Gross Domestic Product

GHG: Greenhouse Gas

GRI: Global Reporting Initiative

GWP: Global Warming Potential

IMF: International Monetary Fund

ISAE: International Standard on Assurance Engagements

ISO: International Organization for Standardization

JVETS: Japanese Voluntary Emissions Trading Scheme

kWh: kilowatt hours

Mt: Mega tonnes

OECD: Organisation for Economic Co-operation and Development

RGGI: Regional Greenhouse Gas Initiative

JI: Joint Implementation

tCO₂e: Metric Tonnes Carbon Dioxide Equivalent

ROC: Renewable Obligation Certificates

Scope 1 (or S1): All direct GHG emissions.

Scope 2 (or S2): Indirect GHG emissions from consumption of purchased electricity, heat or steam.

Scope 3 (or S3): Other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity related activities (e.g. T&D losses) not covered in Scope 2, outsourced activities, waste disposal, etc.

UNFCCC: United Nations Framework Convention on Climate Change

WBCSD/WRI: World Business Council for Sustainable Development / World Resources Institute

WCI: Western Climate Initiative

BIBLIOGRAPHY 47

OF SOURCES

BP (2011) BP Statistical Review of World Energy June 2011, October 2011. Available from: <http://www.bp.com/statisticalreview>

CDP (2011) Carbon Disclosure Project Brazil Report 2011. Available from: <https://www.cdproject.net/CDPResults/CDP-2010-Brazil-Report-portuguese.pdf>

CDP (2010) Carbon Disclosure Project 2010 China Report. Available from: https://www.cdproject.net/CDPResults/CDP_2009_China_Report_English.pdf

CDP (2010) Carbon Disclosure Project 2010 India Report. Available from: https://www.cdproject.net/CDPResults/CDP_Report-Final_India.pdf

CDP (2010) Carbon Disclosure Project 2010 Russia Report. Available from: <https://www.cdproject.net/CDPResults/CDP-2010-Russia50-Report.pdf>

De Sepibus, Joelle and Tuerk, Andreas (2011) New Market-Based Mechanisms Post 2012: Institutional Options and Governance Challenges when Establishing a Sectoral Crediting Mechanism. Available from <http://ssrn.com/abstract=1935802>

Department of Environmental Affairs (2009) Environmental Sustainability Indicators, Technical Report 2009. Department of Environmental Affairs, Pretoria.

EIA (2009) International energy statistics. Available from: <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8>

GHG Protocol, 2011. Corporate Value Chain (Scope 3) Accounting and Reporting Standard. [Online] Available at: [http://www.ghgprotocol.org/files/ghgp/Corporate%20Value%20Chain%20\(Scope%203\)%20Accounting%20and%20Reporting%20Standard.pdf](http://www.ghgprotocol.org/files/ghgp/Corporate%20Value%20Chain%20(Scope%203)%20Accounting%20and%20Reporting%20Standard.pdf)

Integrated Reporting Committee (IRC) of South Africa (2011) Framework for integrated reporting and the integrated report: Discussion paper. Available at: <http://www.sustainabilitysa.org/Portals/0/IRC%20of%20SA%20Integrated%20Reporting%20Guide%20Jan%202011.pdf>

International Energy Agency (2010) IEA statistics: CO2 emissions from fuel combustion highlights. Available from <http://www.iea.org/co2highlights/co2highlights.pdf>

International Energy Agency (2006) Optimizing Russian Natural Gas- Reform and Climate Policy. Available from www.iea.org/textbase/nppdf/free/2006/russiagas2006.pdf (page 15)

Lutz , Preuss and Ralf, Barkemeyer (2011) CSR priorities of emerging economy firms: is Russia a different shape of BRIC? Corporate Governance, Vol. 11 Iss: 4, pp.371 – 385

Massetti, Emanuele (2011) A Tale of Two Countries: Emissions Scenarios for China and India, FEEM Working Paper No. 24.2011; CMCC Research Paper No. 105. Available from <http://ssrn.com/abstract=1788229>

Mintzer, Irving, J. Amber Leonard, and Iván Darío Valencia (2010) Counting the Gigatonnes: Building trust in greenhouse gas inventories from the United States and China. World Wildlife Fund, Washington D.C.

Nielson, Leslie (2009) Parliament of Australia Economics Section, Climate change policy: Brazil, China, India and Russia. Available from <http://www.aph.gov.au/library/pubs/bn/2008-09/ClimateChange.htm>

The Pew Centre on Global Climate Change (2008) Climate Change Mitigation Measures in India: International Brief 2. Available from <http://www.pewclimate.org/docUploads/India-FactSheet-09-08.pdf>

The Pew Centre on Global Climate Change (2007) Climate Change Mitigation Measures in the Peoples Republic of China: International Brief 1. Available from <http://www.pewclimate.org/docUploads/International%20Brief%20-%20China.pdf>

BIBLIOGRAPHY 48

OF SOURCES

SADC, SARDC, IUCN & UNEP (2008) Southern Africa Environment Outlook, SADC, SARDC, IUCN & UNEP, Gaborone/Harare/Nairobi,

Department of Environmental Affairs: Republic of South Africa. South African Department of the Environment Affairs: State of the Environment: <http://soer.deat.gov.za>

United Nations Development Programme (2011) Blending Climate Finance Through National Climate Funds. Available from:

http://asia-pacific.undp.org/documents/Blending_Climate_Finance_Through_National_Climate_Funds.pdf

United Nations Development Programme (2009) National Human Development Report in the Russian Federation: Energy Sector and Sustainable Development. Available from <http://www.undp.ru/documents/180-eng2-01-04.pdf>

United Nations (2008) Millennium development goals indicators: The official United Nations site for MDG indicators. Available from <http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=749&crid=>

Wagner, Fabian and Amann, Markus (2009) Greenhouse Gas - Air Pollution Interactions and Synergies (GAINS), Analysis of the proposals for GHG reductions in 2020 made by UNFCCC Annex 1 Countries: Implications of the Economic Crisis. Available from http://gains.iiasa.ac.at/gains/reports/Annex1-pledges_WEO2009.pdf

World Bank (2008) Energy efficiency in Russia: Untapped reserves. Available from [http://www.ifc.org/ifcext/rsefp.nsf/AttachmentsByTitle/FINAL_EE_report_Engl.pdf/\\$FILE/Final_EE_report_engl.pdf](http://www.ifc.org/ifcext/rsefp.nsf/AttachmentsByTitle/FINAL_EE_report_Engl.pdf/$FILE/Final_EE_report_engl.pdf)

World Resources Institute (2009) Mitigation actions in China: Measurement, reporting and verification. Available from http://pdf.wri.org/working_papers/china_mrv.pdf



T: +44 208 801 0570

E: info@eio.org.uk

www.eio.org.uk

Report Authors:

Beata Imre

Nathan Shaw

Ryan Mizzen

Su Arnall

Sam Gill

Sebastian Hoeg

Michael Gill

Report Researchers:

Abdel Coulibaly, Amanda Choy, Antoine Fredericq,

Antoniya Seizova, Apostolos Korkolis, Bryony Parrish,

Carl Assmundson, Christine Ackerson, Christine Bryant,

Daniel Mullick, Divya Adusumilli, Ellen Ryan,

Ellie Richards, Emily Bell, Esther Cowdery,

George Blacksell, Hongbin Gu, James Cheung,

Joanne Maxted, Jonathan Morier, Krysia Woroniecka,

Liam Campbell, Maria Rozanova, Michael Johnson, Michael Mann,

Nathan Shaw, Ronnie MacPherson, Ryan Mizzen,

Sarah Lafond, Sholto West, Sihong Chen, Tonderayi Madzima, Yewon Kim

© 2013 EIO. All rights reserved.

All information within this report is subject to the terms and conditions on the EIO website.