



Environmental Tracking

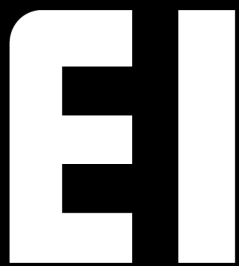
Carbon Rankings

REPORT: ET ASIA-PACIFIC 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 Asia-Pacific 300 Report, examining the greenhouse gas emissions and transparency of the largest 300 companies in the region. 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 this particular number has not received greater attention. It does not require 'an Einstein' to



Foreword

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

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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.

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SUMMARY

Key Findings

- ▶ **12% of companies publicly disclose complete and independently verified Scope 1 and 2 emissions data**
- ▶ **32% of companies do not publicly disclose their emissions data**
- ▶ **72 companies report one or more Scope 3 emissions categories**
- ▶ **Only 1 out of 300 companies reported 5 or more Scope 3 categories**
- ▶ **Singapore Telecom tops the Asia-Pacific Carbon Ranking with the lowest combined carbon intensity across all Scopes**
- ▶ **The biggest Scope 1 & 2 absolute emitter, for which information was available was South Korea based Posco, followed by Japan based JFE Holdings, with Scope 1 & 2 emissions of 78,200,000 and 55,000,000 (tCO₂e), respectively**

The top three companies in the 2013 ET Asia-Pacific 300 Carbon Ranking are Singapore Telecom, SK Telecom and Telstra. This is explained due the inherently low Scope 1 & 2 Intensity within the telecoms industry, and the low inferred Scope 3 benchmark for this sector.

Only 12% of the Asia-Pacific 300 companies fall under the Public, Complete and Verified category. 32% of companies do not make any data publicly available.

Interestingly, another Telecoms company, Nippon Telg & Tel, tops the second Disclosure Category: Public, Complete but Unverified.

The top ten companies feature three Australian companies, highlighting the country's generally good approach to emissions reporting. Two companies from Singapore, South Korea and Taiwan also make the top 10. Whilst the 2011 Asia Pacific Ranking top ten was dominated by Australian companies, 2013 sees a general trend towards improved disclosure level across the region, which is reflected at the top of the table.

Sony remains the top ranked Japanese firm with a combined emissions intensity of £446.07 tCO₂e/\$M turnover and drops two places to 9th in the region. The next best placed Japanese companies are Sumitomo and Komatsu, who rank 12th and 15th, respectively.

SK Telecom, Samsung Electronics and Samsung Engineering lead the way for South Korea and also break into the top 15, ranking 2nd, 10th and 13th, respectively.

In terms of verified Scope 1 & 2 emissions data the lowest absolute emitters in the region were Asustek Computer, Transurban Group and Samsung Engineering with absolute Scope 1 & 2 emissions of 13,060, 59,254 and 80,713 tCO₂e, respectively.

In terms of comparative country analysis of reporting trends across the region, Australian companies still lead, with 43% of companies disclosing Complete Data followed closely by South Korea with 40% disclosing Complete Data. Japan comes in 3rd place with 25% of companies reporting complete data, yet only 7% have this data verified by an independent

EXECUTIVE 7

SUMMARY

auditor compared to 27% for Australia and South Korea.

The Philippines occupies 4th place with 21% of companies reporting complete data; yet none of its companies have their data independently verified.

Within the ET Carbon Rankings, no company from Indonesia or Malaysia disclosed any complete data.

These Rankings highlight that carbon reporting in the Asia-Pacific region is still, with a few exceptions, highly inconsistent. Only 80 out of 300 companies publicly report complete Scope 1 and 2 data in accordance with the GHG protocol standard. Of these companies only 38 are reporting on Scope 1, 2 and some Scope 3 emissions and only 22 companies take the additional step of having at least their Scope 1 & 2 emissions data independently verified.

The company that reported on the most Scope 3 categories in the region was Westfarmers. The Australian company disclosed the largest number of Scope 3 categories with a total of 5 out of 15, and came 24th overall.

With just under a third of companies not reporting any data at all, there is clearly significant room for improvement in the Asia-Pacific emissions reporting landscape.

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 Asia-Pacific 300 Top 10

Figure 1.

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
1	Singapore Telecom	181,965	11.81	2	47.53	Complete & Verified
2	SK Telecom	608,056	40.84	0	76.56	Complete & Verified
3	Telstra	1,428,204	54.52	4	90.24	Complete & Verified
4	Chunghwa Telecom	910,879	121.62	0	157.34	Complete & Verified
5	Asustek Computer	13,060	0.99	1	158.40	Complete & Verified
6	Stockland	144,511	68.31	2	334.17	Complete & Verified
7	CFS Retail Property Trust	102,260	133.23	2	399.09	Complete & Verified
8	Capitaland	441,134	178.45	0	444.31	Complete & Verified
9	Sony	1,501,358	18.06	3	446.07	Complete & Verified
10	Samsung Electronics	11,304,000	73.34	3	501.36	Complete & Verified

Topping the 2013 ET Asia-Pacific 300 Carbon Ranking are Singapore Telecom and SK Telecom, followed by Telstra.

As no company in the Asia-Pacific region fully disclosed its Scope 3 emissions, covering all 15 categories, ranking positions are determined by a combined Scope 1 & 2 intensity plus a 50% weighting of inferred Scope 3 emissions.

Since the telecommunications sector is the sector with the lowest Scope 3 benchmark figure and generally has a low Scope 1 & 2

emissions intensity, 4 out of the top 5 companies are from the Telecoms sector.

The remaining top 10 companies, stem from the Technology sector (Asustek), Financials sector (Stockland, CFS and Capitaland), in addition to two Consumer Goods firms (Sony and Samsung).

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

RANKING 9

HIGHLIGHTS

ET Asia-Pacific 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	GS Holdings	No public data	3,926.62	-	7,086.52	No public data
292	SK Holdings	No public data	3,926.62	-	7,086.52	No public data
293	Formosa Petrochemical	No public data	3,926.62	-	7,086.52	No public data
294	Perusahaan Gas Negara	No public data	6,421.64	-	7,727.13	No public data
295	Origin Energy	No public data	6,421.64	-	7,727.13	No public data
296	Tohoku Electric Power	No public data	9,036.54	-	10,342.03	No public data
297	Manila Electric	No public data	9,036.54	-	10,342.03	No public data
298	Taiwan Cement	No public data	16,462.39	-	17,527.85	No public data
299	Daito Tstconstruction	No public data	16,462.39	-	17,527.85	No public data
300	Samsung C & T	No public data	16,462.39	-	17,527.85	No public data

All of the bottom 10 companies within the ET Asia-Pacific 300 fall under the No Public Data category and have been consequently benchmarked against the highest disclosing company within their sector.

For non-disclosing companies that have been given the same inferred intensity figure, the advantage has been 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.

At the bottom with inferred intensities of 17,527.85 are three Construction firms, followed by two Electric Utility firms with intensities of 10,342.03, two Multi-Utility firms with 7,727.13 and three Oil & Gas Producers with 7,086.52 tCO₂e/\$M turnover.

These ten companies are amongst the 32% of companies from the Asia-Pacific that do not publicly disclose their emissions data.

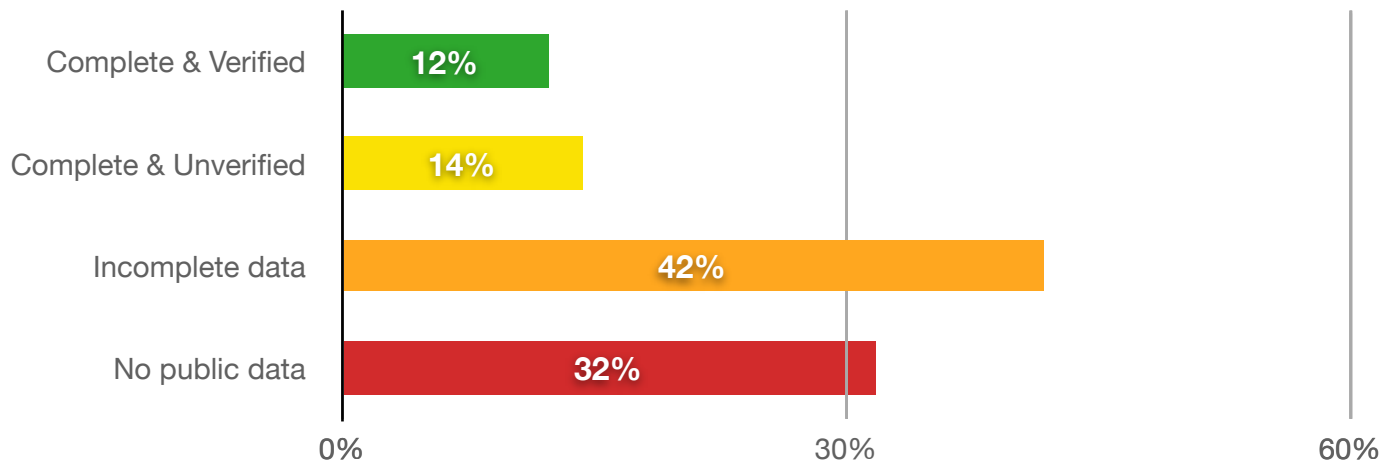
(Emissions Intensity is measured in tCO₂e/\$M turnover)

DISCLOSURE 10

OVERVIEW

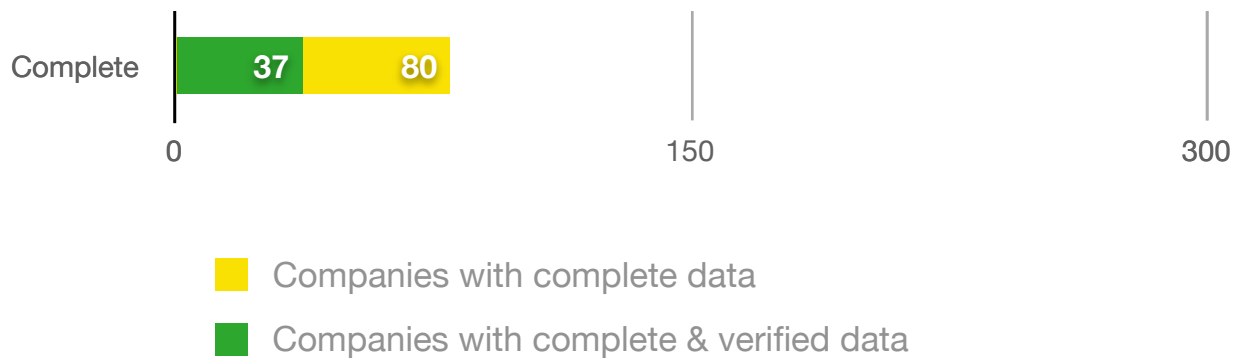
The disclosure and verification landscape of the ET Asia-Pacific 300

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

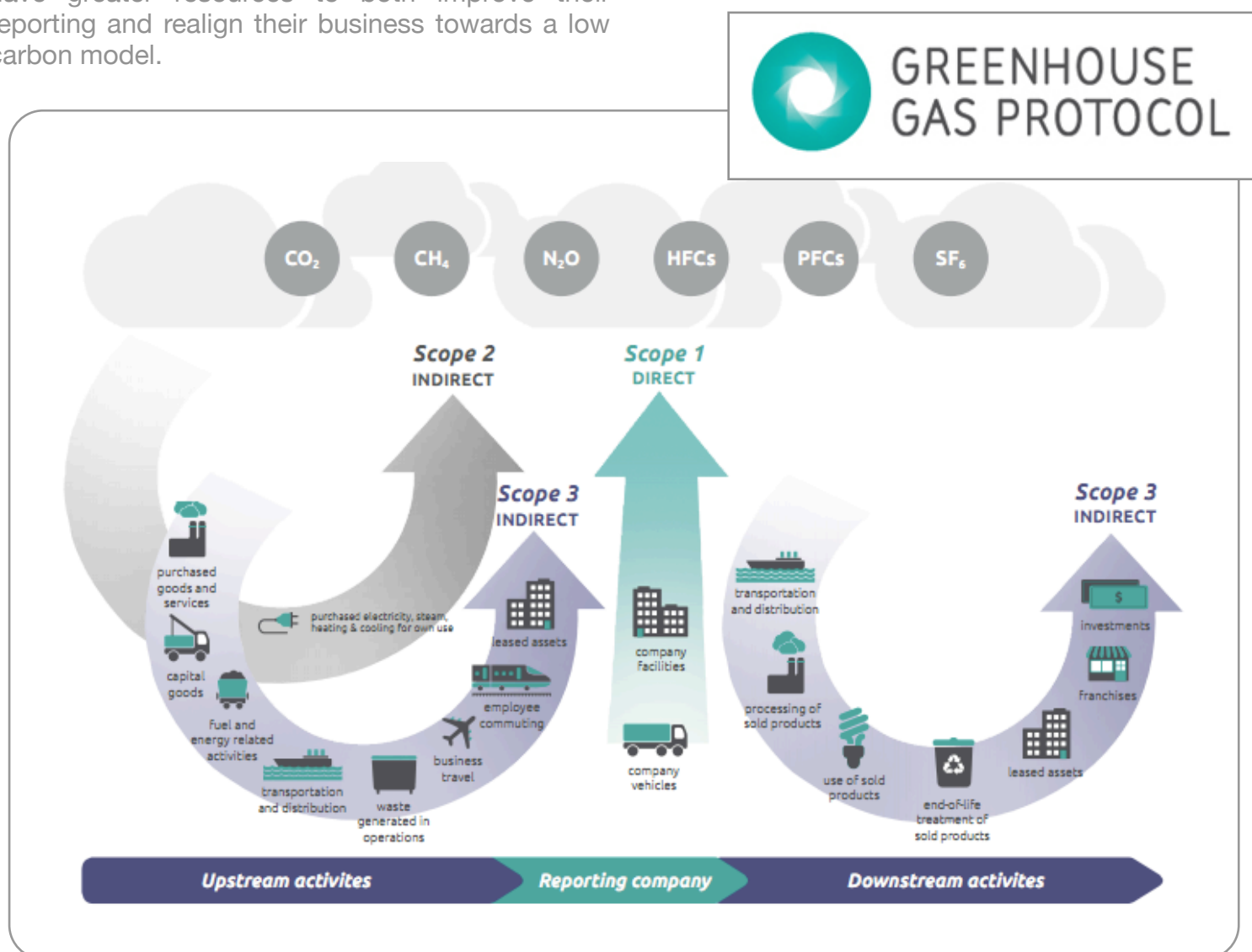
Accounting for size

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

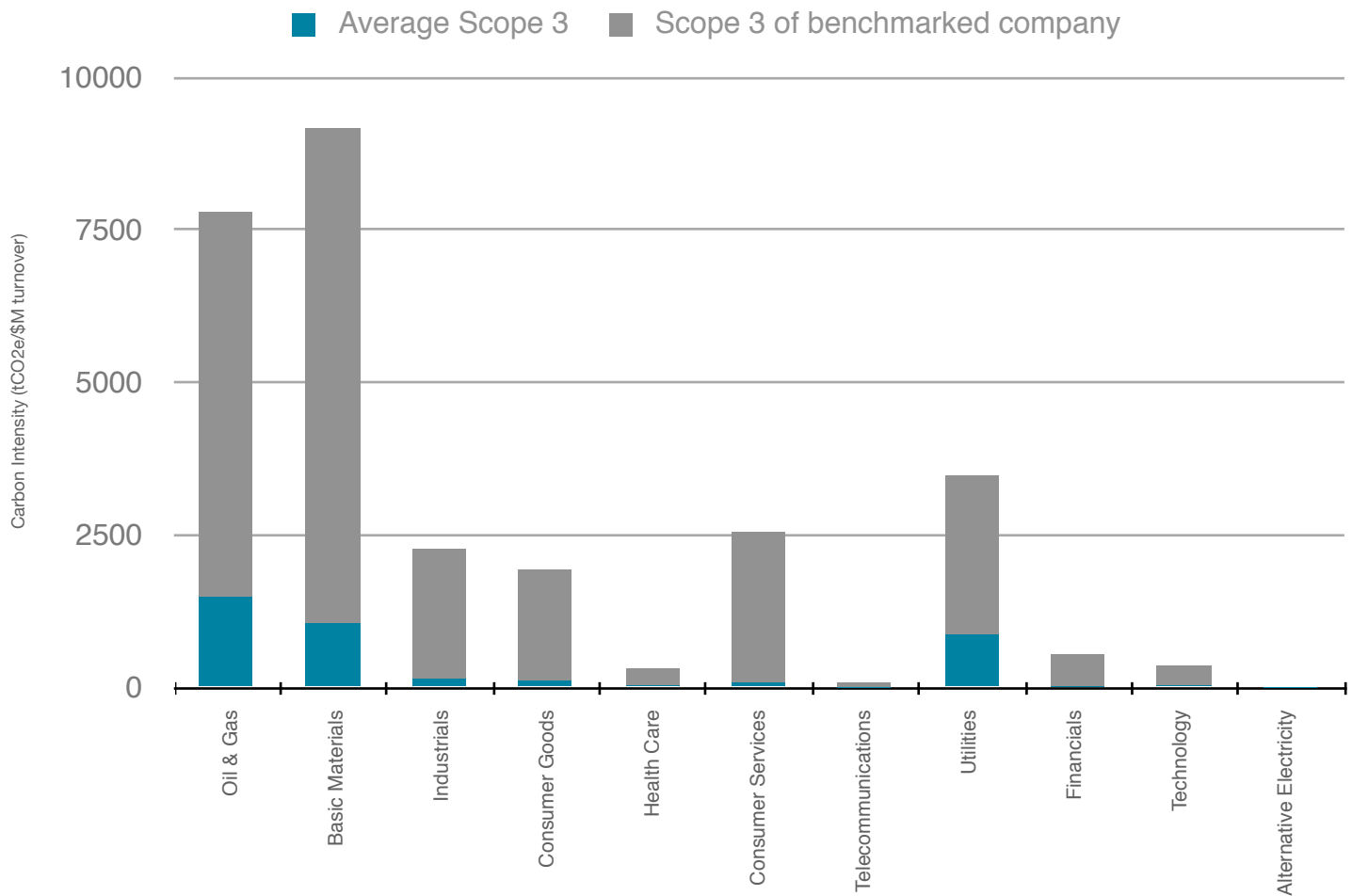


SPOTLIGHT ON 14

SCOPE 3

Global Scope 3 Analysis

Figure 6.



Global Scope 3 Benchmark companies

Figure 7.

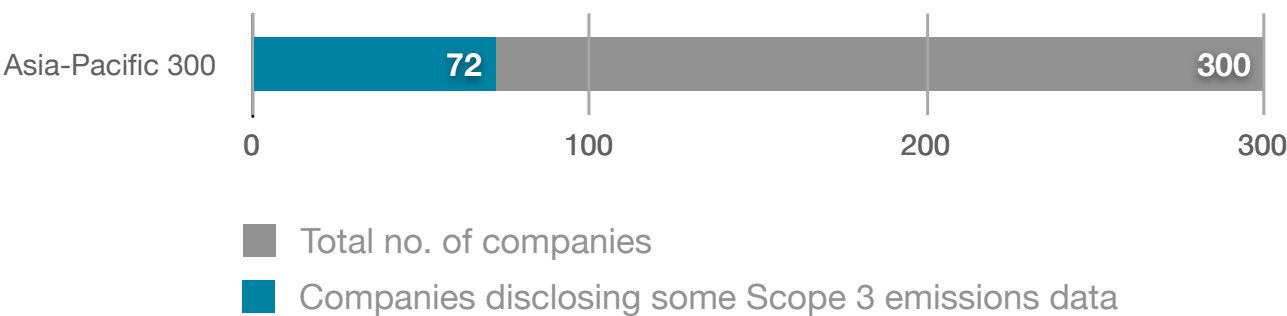
Sector	Benchmark Company Name	No. of Scope 3 Categories Disclosed	Scope 3 Intensity	Sector Scope 3 Intensity Average
Oil & Gas	Santos	1	6,319.81	1,473.57
Basic Materials	Rio Tinto	3	8,120.15	1,047.41
Industrials	Honda Motor	1	2,130.92	129.73
Consumer Goods	Panasonic	2	856.03	109.11
Health Care	Baxter 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

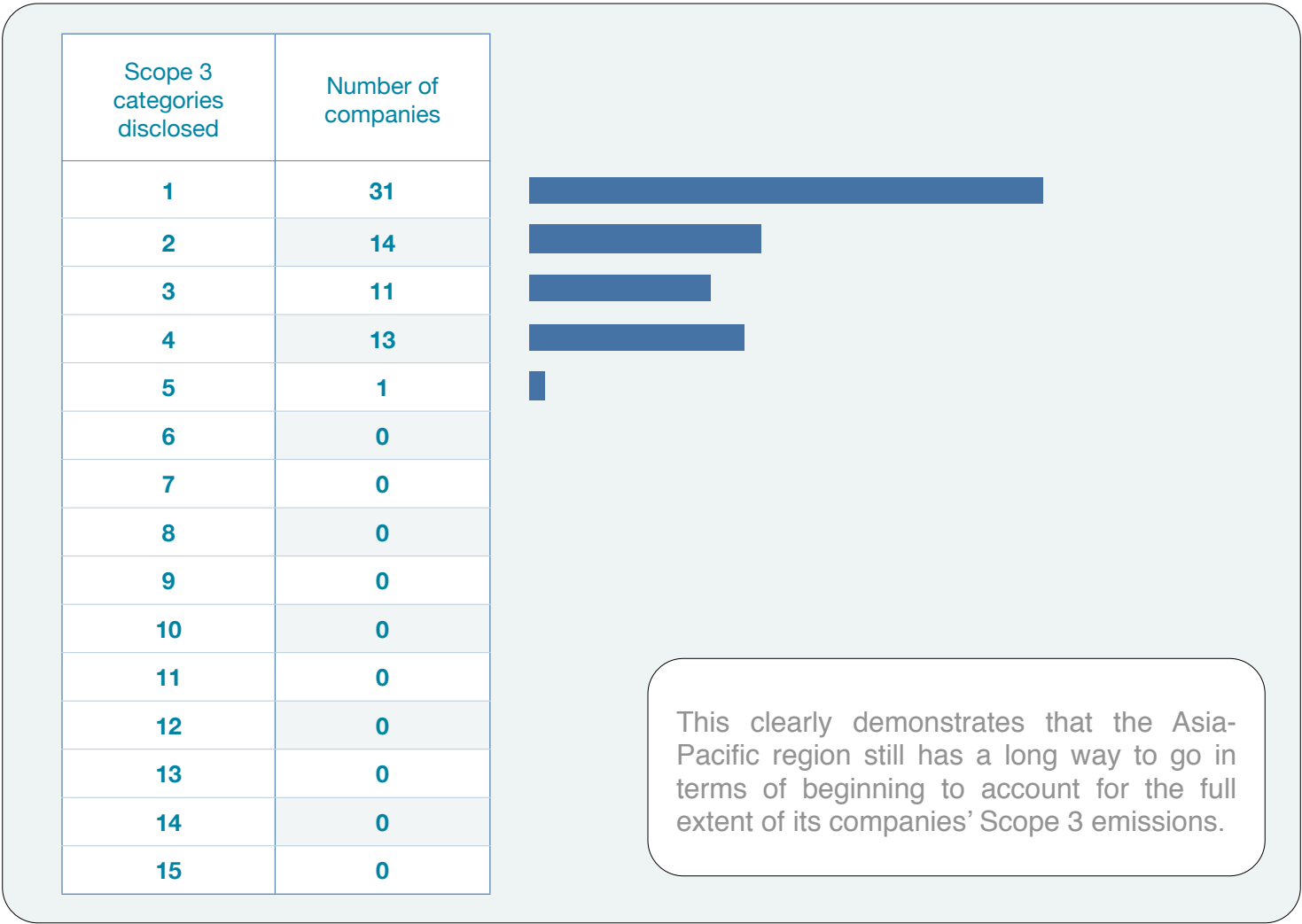
Asia-Pacific 300 Scope 3 Analysis

Figure 8.



Asia-Pacific 300 Extent of Scope 3 Disclosure

Figure 9.



INFERENCE: SCOPE 3

NB. Example taken from ET Global 800

Figure 10.

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.

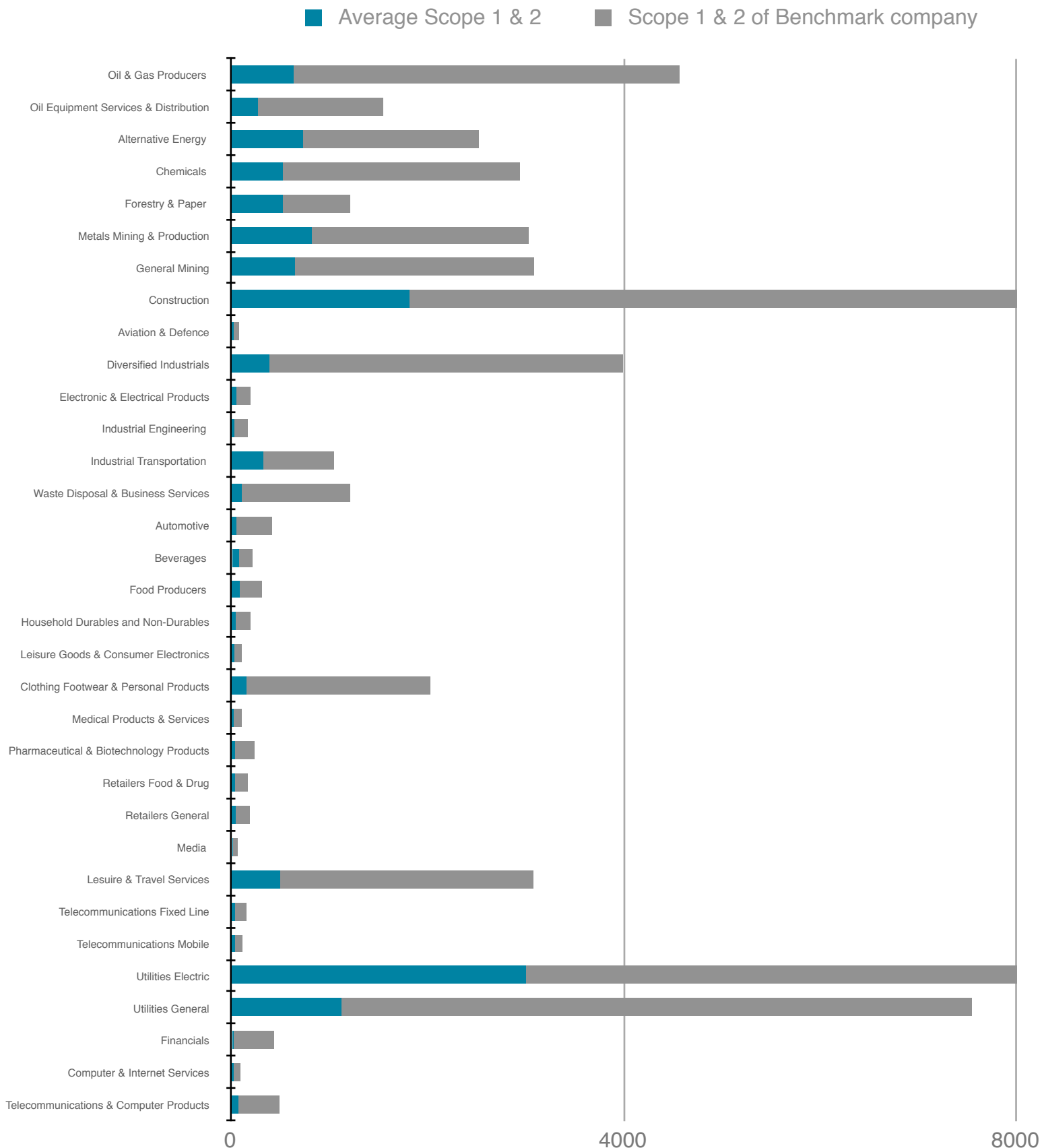
Sector	Benchmark Company Name	Scope 3 Intensity
Oil & Gas	Santos	6,319.81
Basic Materials	Rio Tinto	8,120.15
Industrials	Honda Motor	2,130.92
Consumer Goods	Panasonic	856.03
Health Care	Baxter Intl	291.54
Consumer Services	Int. Continental Hotels Group	2,475.03
Telecommunications	Sprint Nextel	71.44
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 11.



SPOTLIGHT ON 18

SCOPE 1 & 2

Global Scope 1 & 2 Benchmark companies

Figure 12.

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 13.

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	First 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.

RANKING 20

ANALYSIS

Highest and Lowest Absolute Emitters:

Scope 1 & 2

Taken from the 80 Companies reporting complete data

Lowest Absolute Emitters (Scope 1 & 2 Only)

Figure 14.

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	5	Asustek Computer	13,060	0.99	158.40	Complete & Verified
2	68	Tatts Group	28,308	7.46	1,244.97	Complete & Unverified
3	19	Transurban Group	59,254	71.41	1,136.87	Complete & Verified
4	41	Sonic Healthcare	61,974	18.14	163.91	Complete & Unverified
5	53	Shiseido	65,705	8.47	436.48	Complete & Unverified

Figure 14 lists the five lowest absolute emitters from those disclosing complete Scope 1 & 2 emissions data. Verification status is included on the right but does not affect this ranking.

Asustek Computer features not only top when ranked by absolute intensity, but also ranks fifth in the ET Carbon Rankings due to its low intensity combined and the fact its emissions are externally verified.

Highest 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
70	26	Siam Cement	23,000,000	1,908.87	2,974.33	Complete & Verified
71	33	BHP Billiton	41,000,000	544.98	4,605.05	Complete & Verified
72	34	Rio Tinto	44,700,000	726.81	4,786.89	Complete & Verified
73	80	JFE Holdings	55,000,000	1,488.18	5,548.26	Complete & Unverified
74	36	Posco	78,200,000	1,214.40	5,274.48	Complete & Verified

Figure 15 lists the five largest absolute emitters from those disclosing complete Scope 1 & 2 emissions data, ignoring verification status.

Each of the bottom four companies are from the carbon-intensive Basic Materials sector, with Siam Cement representing the Industrials sector.

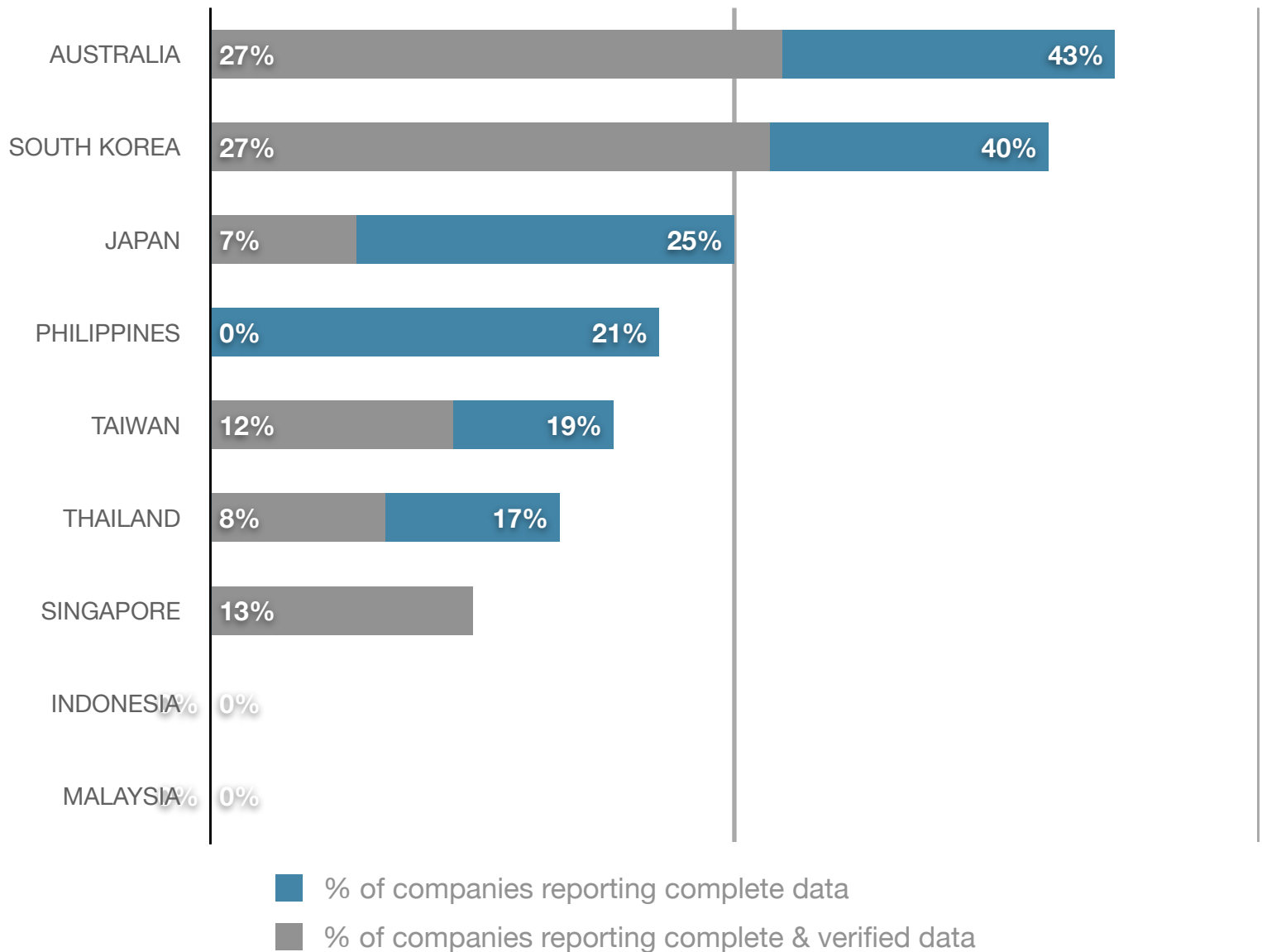
Of note: despite all of the bottom five having large Scope 1 & 2 totals, all but JFE Holdings are reporting Complete & Verified emissions and thereby gain an advantage in the main Ranking.

GEOGRAPHICAL ANALYSIS 21

Summary

Countries leading the field of disclosure

Figure 16.



Australia and South Korea lead the field when it comes to reporting complete data, with more than 50% of the complete data sets being verified. It is of note that less than 25% of all other companies within the region report complete data. 100% of complete data is verified for Singaporean companies, whilst Indonesia and Malaysia report no data.

This is indicative that although Asia-Pacific is making progress in terms of GHG emissions reporting, there is still a long way to go.

GEOGRAPHICAL 22

ANALYSIS

Spotlight on: Australia

Top 5

Figure 17.

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	Telstra	1,428,204	54.52	4	90.24	Complete & Verified
2	6	Stockland	144,511	68.31	2	334.17	Complete & Verified
3	7	CFS Retail Property Trust	102,260	133.23	2	399.09	Complete & Verified
4	11	Gpt Group	172,775	268.63	0	534.49	Complete & Verified
5	19	Transurban Group	59,254	71.41	4	1,136.87	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
40	228	ASX	-	418.28	0	684.14	No Public Data
41	245	Zurich Financial Svs	-	418.28	0	684.14	No Public Data
42	268	Aurizon Holdings	-	720.44	0	1,785.90	No Public Data
43	270	Computershare	-	1,099.20	0	2,164.66	No Public Data
44	295	Origin Energy	-	6,421.64	0	7,727.13	No Public Data

Spotlight on: Japan

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	9	Sony	1,501,358	18.06	3	446.07	Complete & Verified
2	12	Sumitomo	247,202	6.89	3	1,072.36	Complete & Verified
3	15	Komatsu	571,900	26.83	0	1,092.29	Complete & Verified
4	18	Sumitomo Electric Ind	1,268,000	53.91	1	1,119.37	Complete & Verified
5	23	Dai Nippon Printing	980,300	53.33	1	1,290.85	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
140	279	Odakyu Electric	No Public Data	2,576.05	-	3,813.57	No Public Data
141	280	Japan Airlines	No Public Data	2,576.05	-	3,813.57	No Public Data
142	282	Central Japan Railway	No Public Data	2,576.05	-	3,813.57	No Public Data
143	296	Tohoku Electric Pwr	No Public Data	9,036.54	-	10,342.03	No Public Data
144	299	Daito Tstconstruction	No Public Data	16,462.39	-	17,527.85	No Public Data

GEOGRAPHICAL 23

ANALYSIS

Spotlight on: Philippines

Top 5

Figure 17. 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	51	Ayala Land	84,321	83.98	0	349.84	Complete & Unverified
2	67	Ayala	361,749	157.97	0	1,223.43	Complete & Unverified
3	71	Aboitiz Equity Vent	503,000	286.88	0	1,352.34	Complete & Unverified
4	117	Bank Of The Philp.Isle.	27,675	20.82	2	286.68	Incomplete
5	126	Aboitiz Power	503,000	379.15	0	379.38	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
10	226	Metropolitan Bk.& Tst.	No Public Data	418.28	-	684.14	No Public Data
11	233	Bdo Unibank	No Public Data	418.28	-	684.14	No Public Data
12	236	Sm Prime Holdings	No Public Data	418.28	-	684.14	No Public Data
13	264	Sm Investments	No Public Data	142.70	-	1,380.21	No Public Data
14	297	Manila Electric	No Public Data	9,036.54	-	10,342.03	No Public Data

Spotlight on: Singapore

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	1	Singapore Telecom	181,965	11.81	2	47.53	Complete & Verified
2	8	Capitaland	441,134	178.45	0	444.31	Complete & Verified
3	146	Singapore Exchange	Unclear	418.28	1	684.14	Incomplete
4	189	Keppel	430,179	52.12	0	3,212.02	Incomplete
5	193	Singapore Airlines	Unclear	2,576.05	0	3,813.57	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
12	256	Dbz Group Holdings	No Public Data	418.28	-	684.14	No Public Data
13	261	Singapore Press Hdgs	No Public Data	53.33	-	1,290.85	No Public Data
14	283	Fraser And Neave	No Public Data	3,602.58	-	4,668.04	No Public Data
15	285	Jardine Strategic Hdgs	No Public Data	3,602.58	-	4,668.04	No Public Data
16	286	Jardine Matheson Hdgs	No Public Data	3,602.58	-	4,668.04	No Public Data

GEOGRAPHICAL 24

ANALYSIS

Spotlight on: South Korea

Top 5

Figure 17. 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	2	SK Telecom	608,056	40.84	0	76.56	Complete & Verified
2	10	Samsung Electronics	11,304,000	73.34	3	501.36	Complete & Verified
3	13	Samsung Engineering	80,713	9.29	2	1,074.75	Complete & Verified
4	14	Kia Motors	814,000	20.18	0	1,085.64	Complete & Verified
5	16	Hyundai Motor	2,283,790	31.43	0	1,096.89	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
26	237	Hana Financial Group	No Public Data	418.28	-	684.14	No Public Data
27	287	Korea Zinc	No Public Data	2,203.99	-	6,264.06	No Public Data
28	291	Gs Holdings	No Public Data	3,926.62	-	7,086.52	No Public Data
29	292	Sk Holdings	No Public Data	3,926.62	-	7,086.52	No Public Data
30	300	Samsung C & T	No Public Data	16,462.39	-	17,527.85	No Public Data

Spotlight on: Taiwan

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	4	Chunghwa Telecom	910,879	121.62	0.00	157.34	Complete & Verified
2	5	Asustek Computer	13,060	0.99	1.00	158.40	Complete & Verified
3	37	China Steel	22,860,348	1,655.36	0.00	5,715.43	Complete & Verified
4	39	Taiwan Mobile	198,829	70.96	0.00	106.68	Complete & Unverified
5	54	Taiwan Semiconmng	4,286,217	291.44	0.00	448.85	Complete & Unverified

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
22	288	Formosa Chems& Fibre	No Public Data	2,412.22	-	6,472.29	No Public Data
23	289	Nan Ya Plastics	No Public Data	2,412.22	-	6,472.29	No Public Data
24	290	Formosa Plastics	No Public Data	2,412.22	-	6,472.29	No Public Data
25	293	Formosa Petrochemical	No Public Data	3,926.62	-	7,086.52	No Public Data
26	298	Taiwan Cement	No Public Data	16,462.39	-	17,527.85	No Public Data

GEOGRAPHICAL 25 ANALYSIS

Spotlight on: Thailand

Top 5

Figure 17. 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	26	Siam Cement	23,000,000	1,908.87	0	2,974.33	Complete & Verified
2	74	PTT Global Chemical	2,502,315	153.00	0	3,312.90	Complete & Unverified
3	190	PTT	10,171,743	128.14	1	3,288.05	Incomplete
4	192	Ptt Exploration & Prdn	2,751,403	496.12	1	3,656.03	Incomplete
5	208	Advanced Info Ser	No Public Data	70.96	-	106.68	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
8	239	Krung Thai Bank	No Public Data	418.28	-	684.14	No Public Data
9	243	Bangkok Bank	No Public Data	418.28	-	684.14	No Public Data
10	246	Kasikornbank	No Public Data	418.28	-	684.14	No Public Data
11	252	Siam Commercial Bank	No Public Data	418.28	-	684.14	No Public Data
12	262	CP All	No Public Data	130.51	-	1,368.03	No Public Data

Intensity is measured as tCO₂e/\$Million turnover

SECTORAL 26

ANALYSIS

Figure 18.

Sector: Oil & Gas

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	JX Holdings	JP	19,330,000	173.48	0	3,333.38	Complete & Verified
2	Santos	AU	3,619,880	1,378.13	1	4,538.03	Complete & Verified
3	Woodside Petroleum	AU	7,898,603	1,653.47	0	4,813.38	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	Sumitomo Chemical	JP	4,111,000	179.30	0	4,239.38	Complete & Verified
2	Sumitomo Metal Mining	JP	2,437,000	243.86	1	4,303.94	Complete & Verified
3	Asahi Kasei	JP	5,890,000	318.62	1	4,378.69	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	Sumitomo	JP	247,202	6.89	3	1,072.36	Complete & Verified
2	Samsung Engineering	KR	80,713	9.29	2	1,074.75	Complete & Verified
3	Kia Motors	KR	814,000	20.18	0	1,085.64	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	Sony	JP	1,501,358	18.06	3	446.07	Complete & Verified
2	Samsung Electronics	KR	11,304,000	73.34	3	501.36	Complete & Verified
3	Shiseido	JP	65,705	8.47	0	436.48	Complete & Verified

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	Astellas Pharma	JP	189,000	17.13	3	162.90	Complete & Unverified
2	Sonic Healthcare	AU	61,974	18.14	0	163.91	Complete & Unverified
3	Takeda Pharmaceutical	JP	407,000	24.79	0	170.57	Complete & Unverified

Intensity is measured as tCO₂e/\$Million turnover

SECTORAL 27

ANALYSIS

Sector: Consumer Services

Figure 18. (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	Woolworths	AU	2,913,246	51.83	2	1,289.34	Complete & Verified
2	Dai Nippon Printing	JP	980,300	53.33	1	1,290.85	Complete & Verified
3	Wesfarmers	AU	5,382,275	89.87	5	1,327.39	Complete & Verified

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	Singapore Telecom	SG	181,965	11.81	2	47.53	Complete & Verified
2	SK Telecom	KR	608,056	40.84	0	76.56	Complete & Verified
3	Telstra	AU	1,428,204	54.52	4	90.24	Complete & Verified

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	Tokyo Gas	JP	249,000	14.02	4	1,319.51	Complete & Unverified
2	Agl Energy	AU	2,000,000	272.38	1	1,577.87	Incomplete
3	Osaka Gas	JP	7,652,000	557.33	1	1,862.82	Incomplete

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	Stockland	AU	144,511	68.31	2	334.17	Complete & Verified
2	CFS Retail Property Trust	AU	102,260	133.23	2	399.09	Complete & Verified
3	Capitaland	SG	441,134	178.45	0	444.31	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	Asustek Computer	TW	13,060	0.99	1	158.40	Complete & Verified
2	Ricoh	JP	426,300	18.98	2	176.39	Complete & Unverified
3	Canon	JP	944,001	22.94	3	180.35	Complete & Unverified

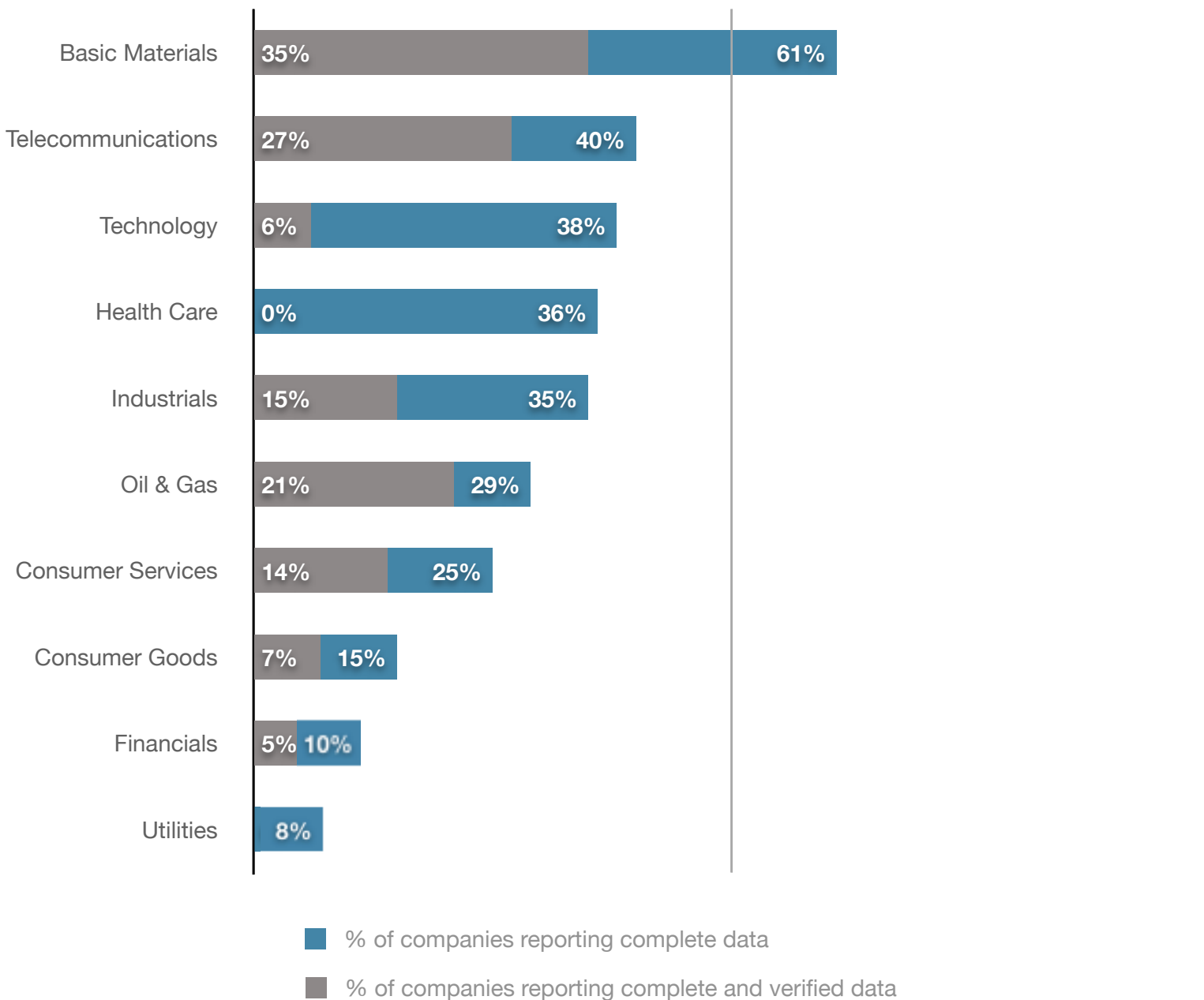
Intensity is measured as tCO₂e/\$Million turnover

SECTORAL 28 ANALYSIS

Summary

Sectors leading the field of disclosure

Figure 19.



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

The Basic Materials and Telecommunications sectors have the highest levels of disclosure and

verification in the region. Perhaps surprisingly in the case of Basic Materials considering its carbon-intensive nature.

The Health Care sector has the 4th highest disclosure rate yet no companies independently verified their data.

DISCUSSION 29

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 30

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 ASIA-PACIFIC 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 31

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 for suggestions on the EIO’s recommendations for how companies can report their GHG emissions more clearly.

EXEMPLARY 32

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 34

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)

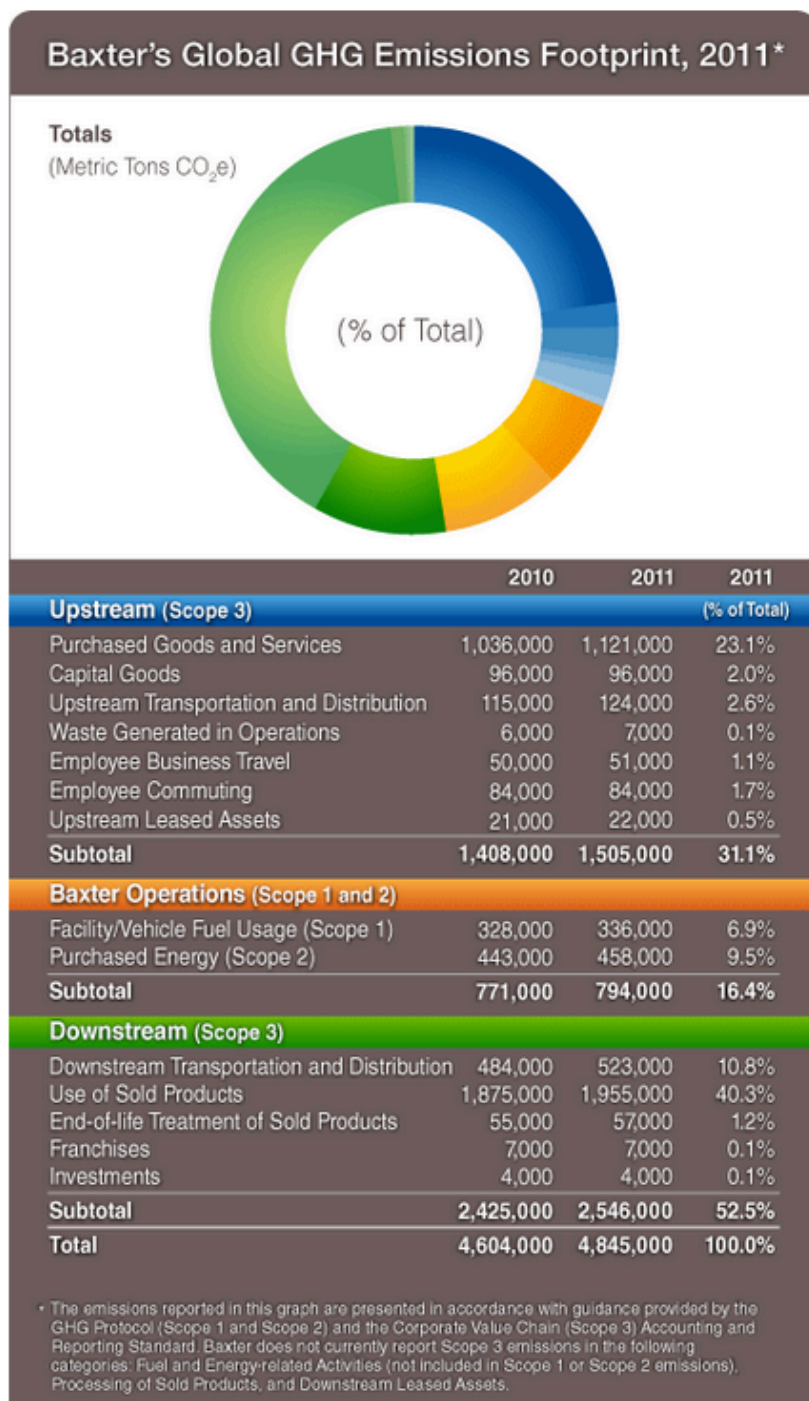
» [Standards Greenhouse Gas Protocol standards](#)

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 35

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.

REPORTING 36

GUIDANCE

- ▶ **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 37

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 38

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.

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Introduction

Within the Asia-Pacific region only three countries are Annex I signatories (those countries classified by the Kyoto Protocol as developed) to the Kyoto Protocol: Australia, Japan and New Zealand. The following section reviews the approaches and progress that these countries have delivered and made in pursuit of their Kyoto obligations. The section also takes a broader look at emissions-related initiatives and policies across the wider Asia-Pacific region.

Australia

Under the Kyoto Protocol, Australia committed to achieving greenhouse gas emissions of no more than 8% above 1990 levels by the end of the first commitment period (2008-2012)[1]. It appears on track to meet this target, with its current emissions at 6% above 1990 levels. Australia's current objective, as ratified by the Labour party and its opposition, the Liberal party, is to reduce its carbon emissions to 5% below 2000 levels by the year 2020. Australia is currently the largest carbon emitter per capita in the developed world and its emissions are already 5% above 2000 levels.

Carbon pricing mechanism:

In July 2012, the Australian government initiated a carbon pricing mechanism (CPM) or carbon 'tax'. Carbon prices for Australia's top 500 emitters will now be fixed at \$23 dollars per tonne of carbon dioxide equivalent gas emitted, and will rise at 2.5% each year until 2015, when the tax will transition into an emissions trading scheme with a flexible, market-determined price[2]. Since industries in the energy and waste disposal sectors are most likely to be affected by the CPM, it is thought that 90% of households will face higher energy bills. However, some of the money generated by the CPM will be fed back to energy consumers through tax cuts and benefits, to reduce energy bills. The government will also direct some of the money towards investments in renewable energy, clean technology projects[3] and the Carbon Farming Initiative (see below).

Just before implementing the tax in 2012, several radical changes were made from the initial proposition. For example, Australian businesses will be able to purchase carbon credits from the

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European Union Emissions Trading System (EU ETS) as of 2015, until arrangements to further synchronise the mechanisms are developed and implemented in 2018. At the behest of big business, the government also abandoned its initial plan for a minimum floor price of \$15 for each carbon credit, choosing instead to support the price of carbon by placing a limit on how many cheap offsets businesses can purchase from overseas. Foreign credits can make up no more than 12.5% of businesses' liabilities[4]. The arguments supporting these moves are that removing the floor price will remove an administrative headache for big businesses, and the link to the EU ETS will allow access to a much larger market. Indeed, businesses can start buying EU permits now in anticipation of joining the market in 2015.

Voluntary Initiatives:

In July 2012, the Australian government complemented the carbon pricing mechanism with a Carbon Farming Initiative (CFI), to enable farmers, forest-growers and landowners to participate in the Australian carbon market. Some CFI activities that do not count towards national Kyoto targets, such as soil carbon, feral animal management, improved forest management and nonforest revegetation, can earn Australian Carbon Credit Units. From July 2013 an AU\$250million CFI Carbon Fund will be operational, where the government will purchase some of those credits under competitive tender, using some of the revenue obtained from companies paying the carbon price [5].

Corporate Reporting:

Under the National Greenhouse and Energy Reporting (NGER) Act 2007, corporate groups or facilities that reach a certain threshold (see table below) for energy consumption, energy production and greenhouse gas emissions are required to report their Scope 1 and Scope 2 emissions to the NGER scheme. NGER reports for the industrial processes, energy, and waste sectors are supplemented with data from the Australian Bureau of Statistics (ABS) and the Bureau of Resources and Energy Economics (BREE). [6]

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The NGER reports require strict accuracy. Companies are not permitted to exclude facilities that collectively emit more than 5% of the emissions total, and all results must be signed off by the company's Chief Executive Officer. The penalty for non-compliance is a fine of \$220,000 or a jail sentence[7]. In April 2012, the role of monitoring the NGER accounts was handed over from the Department of Climate Change and Energy Efficiency to the Clean Energy Regulator. However, the Department of Climate Change retains formal oversight of the scheme and continues to track Australia's emissions with respect to its Kyoto target[8].

Threshold	Reporting Year ended		
	30 June 2009	30 June 2010	30 June 2011
Facility > Carbon Emissions > Energy consumption/ production	25,000 tonnes	25,000 tonnes	25,000 tonnes
	100 terajoules	100 terajoules	100 terajoules
Corporation > Carbon Emissions > Energy consumption/ production	125,000 tonnes	87,500 tonnes	50,000 tonnes
	500 terajoules	500 terajoules	500 terajoules

Japan

Japan is the largest greenhouse gas emitter in the Asia-Pacific region, except for China. In 2010 Japan introduced the Bill for the Basic Law on Climate Change Countermeasures, which included a target to reduce its greenhouse gas emissions by 25% from 1990 levels by 2020, and 80% by 2050. However, progress towards this target was significantly hampered by the consequences of the Fukushima disaster, which occurred in March 2011 when a tsunami inundated the Fukushima-1 nuclear power station[9]. In the aftermath of the disaster greenhouse gas emissions surged as a result of the considerably increased reliance on fossil fuels as all but a few Japanese nuclear plants were taken offline[10]. However, the then incumbent government's longer term zero-nuclear scenario - and renewable energy's role within that scenario - aimed to place Japan's emissions

reduction objectives back on track[11]. With a new government coming to power in early 2013, however, it is not clear whether Japan will continue with its complete nuclear phase-out plans, and therefore what the exact implications will be for greenhouse gas emissions levels.[12]

Given that nuclear plants supplied 26% of the country's power generating capacity in 2010, Japan would have to increase the renewable energy share in its power generation from 10% to 35% by 2030 to make up the shortfall in a zero-nuclear scenario. Japan is promoting additional renewables capacity and generation to compensate for lower nuclear power output as part of the United Nations' Sustainable Energy for All Initiative[13].

In October 2012 Japan proposed the phasing in of a carbon tax on fossil fuels from 2016, having postponed the launch of a national emissions trading scheme in December 2010[13]. This will supplement Japan's existing voluntary domestic emissions trading scheme, JVETS, which was launched in 2005[14].

New Zealand

Overview

Under the Kyoto Protocol, New Zealand was committed to stabilising its average emissions between 2008 and 2012 at the level recorded in 1990[15]. As of August 2012, government projections suggested that this target would be met, with absolute emissions during 2008-12 projected to be around 10% lower than required through the Kyoto target[16]. This represents a considerably different picture from 2009, when the same projections implied that New Zealand would miss its Kyoto target[17]. The intervening period has seen lower agricultural emissions and less deforestation than was predicted, but the sizeable increase in anticipated carbon sequestration in forests was observed can be partially attributed to changes to storage calculation methods[18].

If these emissions are decomposed by sector, agriculture was the largest contributor to overall emissions from 2008-2012 (47% of total emissions), closely followed by energy (c. 44%). At the same time, the forestry sector delivers a considerable positive contribution when carbon

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removals are taken into account, effectively reducing New Zealand's absolute emissions by around 23%^[19].

Emissions trading

New Zealand's primary mechanism for addressing its Kyoto obligations is the New Zealand Emissions Trading Scheme (NZ ETS), which is similar in principle to many other cap-and-trade schemes in setting a progressively lower allowance cap on the volume of emissions that each regulated facility or sector (e.g. the forestry and waste sectors) can emit each year^[20]. The scheme's own carbon allowance unit (the NZU) benefitted from a relatively stable initial trading period, but its value dropped from NZ\$20 in 2011 to less than NZ\$3 in October 2012^[21].

A key factor in this price drop is the fact that unlike other Emissions Trading Schemes (ETSs) comparatively few restrictions are placed on the use of 'external', non-NZU carbon credits within the market, thereby allowing market participants to meet their obligations through Kyoto-generated credits such as Certified Emission Reductions (CERs), issued under the Clean Development Mechanism (CDM), and ERUs, issued through Joint Implementation projects. This approach is perhaps understandable given the relatively small size of the NZ ETS and a corresponding need to find ways of maintaining market liquidity.

However, the approach has recently seen a sizeable influx of non-NZU carbon credits: in 2010, less than 5% of credits surrendered to the ETS were from outside NZ22 but by 2011 the proportion of non-NZU credits had rocketed to over 70% ^[22]. This increase in supply has led to an overall drop in price of the NZUs, reducing the incentive to cut emissions. Furthermore, it has reduced the value of NZUs attainable through 'positive' emissions contributions such as planting of new forestry.

Partly in response to the price shift, the government of New Zealand is currently legislating to reform the NZ ETS, but critics have claimed that scheme's ability to impact on emissions reductions is being diluted^[23]. The continuing absence of agriculture's participation in the scheme is viewed by some as a particular weak point, given that

sector's huge contribution to New Zealand's absolute emissions[24].

Nonetheless, a number of commentators have praised the scheme's openness as this could help forge links with other carbon markets, such as European and Australian markets, in future[25].

GHG reporting

New Zealand companies that are covered by the ETS are required to report their emissions, although all monitoring, reporting and verification can be undertaken on a self-assessment basis [26]. Companies that are not covered by the ETS are not legally obliged to report their emissions, but the government has produced clear guidance (including emissions factors) for companies that choose to report on a voluntary basis[27].

Regional outlook

Statutory emissions trading

A number of other nations in the Asia-Pacific region are developing or assessing the feasibility of their own legally-binding emissions trading schemes, such as the Republic of Korea and Vietnam, though the Vietnamese plans are still in the early stages of conception [28].

South Korea's planned ETS appears to be particularly ambitious. To be introduced in 2015, the scheme garnered near unanimous support when passed through parliament, and will cover up to 70% of the country's emissions. By way of comparison, the EU ETS only covers around 43% of EU emissions [29]. Korea as a non-Annex I country announced to voluntarily reduce its greenhouse gas emissions by 30 per cent by 2020 relative to a 'business-as-usual' baseline, implying a 4 per cent cut from the 2005 level [30]. At present, it is building its national inventory reporting system in order to commit to this objective as well as in preparation of the ETS and mandatory emissions reduction in future.

Across the East China Sea, Taiwan is also planning to introduce a carbon offset scheme, although details are limited at this stage and it appears to be less formal than a fully fledged ETS[31].

Thailand is also looking to introduce a scheme, although early indications are that this will only be

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voluntary in nature[32]. While the Singaporean government have not taken steps to inaugurate an ETS, the Minister for the Environment and Water Resources endorsed a global emissions trading scheme in 2011[33]. As one of the world's largest financial hubs, this could be seen as significant.

Reducing Emissions from Deforestation and Forest Degradation plus (REDD+):

The forests and peatlands of the Asia-Pacific region represent significant carbon sinks. The region contains nearly one fifth, or 743 million hectares, of the world's forests[34]. Expansion of commercial plantations and agricultural crops are the main driving forces behind deforestation. Steps taken to prevent deforestation, improve forest management and enhance carbon stocks through the REDD+ mechanism could help contribute towards significant global emissions reductions by 2050[35]. A 50% reduction in deforestation rates in the ten developing countries with the most significant forest coverage, such as Malaysia, Indonesia and Cambodia, could prevent the release of 551 million tonnes of carbon dioxide. If \$5 was paid for each tonne of carbon sequestered in these preserved trees, forest managers could collectively earn \$2.8 billion USD[36].

Principally, REDD+ is a financing mechanism, funded mostly through developed countries, used to incentivise developing countries to shift policies and forest management practices in favour of better forest governance and practices. In addition to deforestation and degradation, REDD+ covers sustainable forestry management, biodiversity conservation and the growth of carbon sinks. Through market mechanisms and these financial incentives, the aim of the REDD+ process is to place a financial value on the carbon stored in trees that would exceed the market value of the timber. Most countries in the Asia-Pacific are undergoing Phase 1 of the REDD+ process which requires putting forward a national action plan to demonstrate the country's 'readiness' for REDD+. Phase 2 will involve the implementation of REDD+ through capacity-building and technology transfer, and Phase 3 will allow for results-based action towards removing emissions. These stages, Phase 3 especially, will require a stringent Measurement

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of Reporting and Verification (MRV) system for monitoring purposes, and an established Benefit Distribution System (BDS) to ensure that the benefits are correctly and fairly allocated. Underlying these phases will be a number of environmental and social 'safeguards' to ensure that local communities, biodiversity and other vulnerable players are protected from the negative impacts of land management practice changes[37].

There are currently 12 countries in the Asia-Pacific region being supported by the REDD programme, to prepare them for the land management changes, of which Cambodia, Indonesia and four others have adopted their own National REDD+ programmes. Vietnam was one of the first countries to join the REDD+ scheme. Phase 1 was scheduled to finish in 2011 but was extended to June 2012. The administrative structure for REDD+ was only officially established in January 2011 [38]. Cambodia's Readiness Preparation Proposal for the World Bank's Forest Carbon Partnership Facility has been approved and in August 2011 it signed its UN-REDD National Programme Document to receive a total budget of \$4,201,350 between 2011 and 2013 to prepare Cambodia for REDD+ implementation via institution, policy and capacity development[39].

In 2009, the Government of Indonesia declared it would reduce its emissions by 26% unilaterally, and by 41% with international help, by the year 2020. In 2011, in its Forest Moratorium on better forest governance, Indonesia introduced new permits preventing the further clearance of primary forests with the help of \$1billion from Norway under an Indonesia-Norway REDD+ partnership. Between 2011-2013, Indonesia will receive \$3.6million from UN-REDD to prepare for readiness – including the implementation of MRV systems, data collection and general capacity building[40]. In 2010, the Philippines also implemented a National Framework Strategy on Climate Change (NFSCC) which is overseeing governance framework for REDD+ in the Philippines[41].

ET INDEX 47

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 OF 48 TERMS

BAU: Business As Usual

CCC: Committee on Climate Change

CCX: Chicago Climate Exchange

CDM: Clean Development Mechanism

CED: Clean Energy Dialogue

CRC: Carbon Reduction Commitment

C(S)R: Corporate (Social) Responsibility

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

DECC: Department of Energy and Climate Change

EIO: Environmental Investment Organisation

EPA: Environmental Protection Agency (US)

ET: Environmental Tracking

EU ETS: EU Emissions Trading Scheme

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

Jl: 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

- [1] <http://www.climatechange.gov.au/government/reduce/national-targets/~media/government/reduce/NationalTarget-Factsheet-20111201-PDF.pdf>
- [2] <http://www.climatechange.gov.au/government/initiatives/carbon-farming-initiative/handbook/cfi.aspx>
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- [9] <http://www.hse.gov.uk/nuclear/fukushima/final-report.pdf>
- [10] See IEA's article (<http://www.iea.org/newsroomandevents/news/2012/may/name,27216,en.html>) and BP Historical Data (http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2011/STAGING/local_assets/spreadsheets/statistical_review_of_world_energy_full_report_2012.xlsx) for Japan's 2011 emissions projection. Based on the national emissions projection in 2011, the Ministry of Environment of Japan has expressed its concerns about its emissions increase of around 15 percent compared to the 1990 baseline year level (<http://news.yahoo.com/japan-shuts-down-nuclear-power-emissions-rise-064616407--finance.html>).
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- [13] World Energy Outlook 2012, OECD Publishing, p. 212.
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- [15] <http://www.env.go.jp/en/earth/ets/jvets090319.pdf>
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T: +44 208 801 0570

E: info@eio.org.uk

www.eio.org.uk

Report Authors:

Ronnie MacPherson

Esther Cowdery

Yewon Kim

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

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