

**Private Sector Scope 1 & 2 Carbon Emissions**



**EARTH FOCUS**  
FOUNDATION

# Executive Summary

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## Introduction

For the purposes of this report the term Carbon includes and is equivalent to all Greenhouse Gases (GHG), on a CO<sub>2</sub> equivalent/ CO<sub>2</sub>e/ CO<sub>2</sub>eq basis, unless otherwise specified. This report considers only scope 1 (direct) and 2 (indirect) carbon emissions reported to the Carbon Disclosure Project (CDP) by the Global 500 and that have been disclosed publicly for 2010<sup>1</sup> and 2011<sup>2</sup>. The focus should be on non-disclosers (see Appendices A and B) to disclose publicly rather than the accuracy of publicly disclosed figures. Statistically and methodologically speaking disclosed Carbon emissions should not be added up or compared from one Global 500 company to another. This report does so for **pedagogical purposes only** and to have an approximate idea of “where’s the carbon?”.

## Global 500 2010 and 2011 Non-disclosers

Of the Global 500, 153 companies did not to disclose publicly their 2010 carbon emissions and 169 companies did not disclose their 2011 emissions to CDP.

## Global 500 2010 Carbon Emissions

According to an analysis of the the Carbon Disclosure Project’s (CDP) report<sup>1</sup>, 347 of the Global 500 world’s largest companies have disclosed publicly to CDP their scope 1 and 2 carbon emissions. The biggest carbon emitters include cement and steel manufacturers, energy and utilities companies which accounted for a disproportionate amount of carbon emission (the top 20 emitters accounted for 58% of total emissions for 347 companies). Baseline 2010 carbon emissions were established for the Global 500 and were compared with 2011 carbon emissions for the 291 companies that disclosed publicly in 2010 and 2011.

## Global 500 2011 vs 2010 Carbon Emissions Reductions

Of the 347 companies disclosing in 2010 companies 291 companies also disclosed publicly their Carbon emissions for 2011 to CDP. These 291 companies emitted in total 0.4% more Carbon in 2011 compared with 2010. According to their disclosures (without verification and accounting for acquisitions, divestitures, changes in reporting practices etc which can have a very significant impact on changes in carbon emissions from year to year) 129 companies reported a decrease of better than -1.7% Carbon emissions and 162 equal to or worse than -1.7%.

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<sup>1</sup> CDP Global 500 Report 2011 Accelerating Low Carbon Growth

<sup>2</sup> CDP Global 500 Climate Change Report 2012

## 1. INTRODUCTION

For the purposes of this report the term Carbon includes and is equivalent to all Greenhouse Gases (GHG), on a CO<sub>2</sub> equivalent/ CO<sub>2</sub>e/ CO<sub>2</sub>eq basis, unless otherwise specified. Carbon dioxide (CO<sub>2</sub>) accounts for 77% of Greenhouse Gases, followed by Methane (CH<sub>4</sub>) 14% and Nitrous oxide (8%)<sup>3</sup>.

This report considers only scope 1 (direct) and 2 (indirect) carbon emissions reported to the Carbon Disclosure Project (CDP) by the Global 500 and that have been disclosed publicly for 2010<sup>4</sup> and 2011<sup>5</sup>.

Statistically speaking, disclosed Carbon emissions Global 500 should not be added up or compared from one Global 500 company to another (as companies use different methodologies, ways of defining Scope 1 and 2 and have different levels of independent verification). This report does so for **pedagogical purposes only** and to have an approximate idea of “where’s the carbon?”. This report is not intended for decision-making or benchmarking purposes (see 6. Legal Disclaimer).

The advantage of adding up self-reported emissions (whose quality can vary tremendously from company to company) is that in all likelihood they are conservative and on the lower side. We can therefore feel realistically confident that the numbers reported are not inflated.

## 2. Global 500 2010 and 2011 Non-disclosers

Of the Global 500, 153 companies did not disclose publicly their 2010 carbon emissions to CDP and 169 companies did not disclose publicly their 2011 emissions (either because they disclosed to CDP and required they not be disclosed publicly or because they did not disclose scope 1 and 2 to CDP, or in some rare cases because they were acquired and disclosed as part of the acquirers’ disclosure).

The non-disclosing companies for 2010 include large corporations such as Apple, Berkshire Hathaway, Canon, Costco, EADS, Japan Tobacco, Lowe’s, Petrochina and Rosneft (for a complete list of non- publicly disclosing companies to CDP see Appendices A and B).

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<sup>3</sup> IPCC 2007

<sup>4</sup> CDP Global 500 Report 2011 Accelerating Low Carbon Growth

<sup>5</sup> CDP Global 500 Climate Change Report 2012

### 3. THE BASELINE: Review of Global 500 CDP publicly reported carbon emissions for 2010

The Carbon Disclosure Project (CDP) has reported<sup>6</sup> the 2010 carbon emissions for the Global 500<sup>7</sup>. Out of the Global 500, 347 companies reported carbon emissions for public use and 157 companies did not disclose publicly. The total Carbon emissions of these 347 companies were just over 3.7 billion metric tonnes of CO<sub>2</sub> equivalents (3'710'045'559 metric tonnes of CO<sub>2</sub> equivalents), which corresponds to 11% of 33.5 billion metric tonnes of global CO<sub>2</sub> emissions as reported by the Global Carbon Project<sup>8</sup> or 7.6 % of the approximately 49 billion metric tonnes of CO<sub>2</sub> equivalents<sup>9</sup>.

#### The top 20 carbon emitters from 347 companies

The 347 companies were ranked by total carbon emissions (total scope 1 + 2 carbon emissions). The Top 20 are listed in the table below:-

Rank	Company	Sector	2010 Total Scope 1 & 2 emissions (tonnes of CO <sub>2</sub> e)
1	Arcelor Mittal	Materials	184'825'000
2	RWE	Utilities	170'200'000
3	Exxon Mobil	Energy	147'000'000
4	American Electric Power	Utilities	138'294'800
5	E.ON AG	Utilities	132'326'014
6	The Southern Company	Utilities	132'000'000
7	Gazprom	Energy	131'219'300
8	ENEL	Utilities	116'649'738
9	GDF Suez	Utilities	112'575'205
10	Holcim	Materials	108'334'034
<b>TOTAL TOP 10</b>			<b>1'373'424'091</b>
11	Lafarge	Materials	104'663'099
12	Duke Energy	Utilities	90'612'245
13	Royal Dutch Shell	Energy	85'000'000
14	Electricite de France (EDF)	Utilities	81'246'570
15	Sasol	Energy	74'981'000
16	BP	Energy	74'920'000
17	POSCO	Materials	71'679'000
18	ConocoPhillips	Energy	68'005'000
19	Chevron	Energy	66'619'864
20	Eni	Energy	62'561'965
<b>TOTAL TOP 20</b>			<b>2'153'712'834</b>
<b>TOTAL 347 Disclosers/Global 500</b>			<b>3'710'045'559</b>

<sup>6</sup> CDP Global 500 Report 2011 Accelerating Low Carbon Growth

<sup>7</sup> The Global 500 are the largest companies by market capitalization included in the FTSE Global Equity Index Series

<sup>8</sup> Global Carbon Project (<http://co2now.org/Current-CO2/CO2-Now/global-carbon-emissions.html>)

<sup>9</sup> OECD Environmental Outlook to 2050, Climate Change Chapter, Figure 3.16. Alternative emission pathways, 2010-2100

Out of the top 20 carbon emitters 8 are energy companies (oil and gas), another 8 are utilities (electricity, gas and water) and 4 are materials (steel and cement) companies, as steel and cement manufacturing is highly energy intensive). Utilities depend on how carbon intensive their provision of electricity, gas and water is (included in their Scope 1 and 2 emissions). For the oil and gas industry, however, by far the most significant part of carbon emissions comes from the use of its products (75 to 80% according to a 2010 report from Accenture<sup>10</sup>) which are **NOT** included in Scope 1 and 2 emissions but rather in Scope 3. The fact that there are still 8 energy companies in the top 20 scope 1 and 2 emitters is testament to how carbon intensive exploration, transport, refining and distribution of the oil and gas industry remain (and is growing in carbon intensity due to shale/sands extraction and more complex processing of low sulphur grades<sup>4</sup>).

The top 20 companies out of 347 were responsible for 58.1% and the top 10 for 38% of reported emissions. **Just as with countries it is the largest businesses and the most carbon intensive industries which account for a disproportionate volume of carbon emissions.** Although reducing carbon emissions is the responsibility of all the greatest gains are to be found where carbon intensity and the size of business is greatest.

#### 4. The Role of the Private Sector

International negotiations have so far failed to produce a global and binding commitment to reduce carbon emissions. It is up to the private sector to take the lead in achieving a 33% decrease in Carbon emissions by 2020 and 80% decrease in carbon emissions by 2050, using 2010 as a baseline. The private sector is responsible for a very significant part of carbon emissions so is well placed to reduce them. In addition to the many social benefits of decreasing carbon emissions there are many other benefits for the private sector itself including:-

- Lower costs (production and energy costs), less wastage and higher productivity
- New businesses (green economy, renewable energy, new business models, circular industrial ecology etc.)
- Improved climate change risk management
- Better image and stakeholder management

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<sup>10</sup> Review of Carbon Accounting and Reporting in the Oil and Gas Industry  
Key Findings © Accenture 2010

## 5. Global 500 2011 vs 2010 Carbon Emissions Reductions

Of the 347 companies which disclosed publicly in 2010 291 companies also disclosed their carbon emissions for 2011.<sup>11 12</sup> These 291 companies emitted in total 0.4% more carbon in 2011 vs 2010 whereas to keep within a 2° C change requires businesses to reduce emissions by 1.7% year on year. According to their disclosures (without verification and accounting for acquisitions, divestitures, changes in reporting practices etc which can have a very significant impact on changes in carbon emissions from year to year) 129 companies reported a decrease of better than -1.7% Carbon emissions and 162 equal to or worse than -1.7%.

“...to achieve the 450 ppm stabilisation target, global emission reductions of 12% will be needed by 2020 and 70% by 2050 compared to the Baseline (for 2050 this means 52% below 2005 levels, and 42% below 1990 levels). Emissions would therefore have to decrease at an average rate of 1.7% per year between 2010 and 2050....”<sup>13</sup>

If one considers the top 20 companies which disclosed in both 2010 and 2011 (excluding GDF Suez which made a significant acquisition that is known about), 10 companies managed a better performance than -1.7% compared with 10 which did less well than the required -1.7% reduction (before verification for divestitures, changes in reporting practices, methodologies etc)

Company	Country	Sector	2011 Total Scope 1 & 2 emissions (tonnes of CO2 e)	% vs 2010
Arcelor Mittal	Luxembourg	Materials	179'930'000	-2.6%
RWE	Germany	Utilities	166'220'000	-2.3%
Exxon Mobil	USA	Energy	150'000'000	2.0%
Gazprom	Russia	Energy	137'184'240	4.5%
American Electric Power	USA	Utilities	135'671'200	-1.9%
E.ON AG	Germany	Utilities	134'896'340	1.9%
ENEL	Italy	Utilities	123'871'830	6.2%
The Southern Company	USA	Utilities	121'000'000	-8.3%
Holcim	Switzerland	Materials	113'055'295	4.4%
Duke Energy	USA	Utilities	85'271'807	-5.9%
Royal Dutch Shell	Netherlands	Energy	84'000'000	-1.2%
POSCO	South Korea	Materials	78'227'000	9.1%
Sasol	South Africa	Energy	74'777'000	-0.3%
Electricite de France (EDF)	France	Utilities	71'016'962	-12.6%
BP	United Kingdom	Energy	70'790'000	-5.5%
ConocoPhillips	USA	Energy	70'200'000	3.2%
Chevron	USA	Energy	65'908'005	-1.1%
Dominion Resources	USA	Utilities	57'069'809	-3.8%
Petrobras	Brazil	Energy	56'200'187	-8.2%
Eni	Italy	Energy	52'290'272	-16.4%
<b>TOTAL</b>			2'027'579'947	-1.4%

<sup>11</sup> CDP Global 500 Report 2011 Accelerating Low Carbon Growth

<sup>12</sup> CDP Global 500 Climate Change Report 2012

<sup>13</sup> OECD Environmental Outlook to 2050, Climate Change Chapter, Figure 3.16. Alternative emission pathways, 2010-2100



## 6. Legal disclaimer

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## 7. Appendices

### Appendix A: Global 500 2010 non-publicly disclosing companies to CDP

2010 Global 500 Non-publicly disclosing companies		
Akbank	General Dynamics	PETROCHINA
Alcon	Genting Singapore	Ping An of China
Amazon.com	Genzyme	PKO Bank Polski
América Móvil	Great West Lifeco	Power Financial
Apple Inc.	Grupo Mexico	Precision Castparts Corp.
Archer Daniels Midland	Hang Lung Properties	Priceline.com
Astra International	Hermes International	PTT
BAE Systems	High Tech Computer	Public Storage
Banco Santander Chile	Hon Hai Precision Industry	Reliance Industries
Bank Central Asia	Honeywell International	Rosneft
Bank Mandiri	Hong Kong and China Gas	S.A.C.I. Falabella
Bank of China	Hong Kong Exchanges & Clearing	Saipem
Bank of Communications (H)	Housing Development Finance	Samsung Life Insurance
Belle International	Hutchison Whampoa	Sandvik AB
Berkshire Hathaway	Hyundai Heavy Industries	Sberbank
Bharat Heavy Electricals	Illinois Tool Works	Shin Etsu Chemical
Bharti Airtel	Indian Oil	Sime Darby Berhad
BOC Hong Kong	Industrial and Commercial Bank of China	Singapore Telecom
BYD Company	Infosys Technologies	SoftBank
Canon	Japan Tobacco	Southern Copper Corporation
Charles Schwab	Jardine Matheson	State Bank of India
Cheung Kong	Jardine Strategic	Steel Authority of India
China Construction Bank (H)	JFE Holdings	Stryker
China Life Insurance (H)	Kansai Electric Power	Sumitomo Mitsui Financial Group
China Mobile	Korea Electric Power (Kepco)	Sun Hung Kai Properties
China Overseas Land & Investment	Kyocera	Surgutneftegas
China Telecom	Las Vegas Sands	Sysco
China Unicom	Li & Fung	T. IS BANKASI
Christian Dior	Lowe's	Telekom Indonesia
Chubu Electric Power	Lukoil	Tenaris
CIMB Group Holdings	Malayan Banking	Tencent Holdings
CME Group	Manulife Financial	The Tokyo Electric Power (TEPCO)
Comcast	MasterCard	Thermo Fisher Scientific
Compagnie Financière Richemont	McDonald's	Thomson Reuters
Costco Wholesale	MetLife	Time Warner Cable
Cummins India	Mitsubishi Estate	TransCanada
Danaher	Mitsui & Co	Tyco International
DBS Group Holdings	MMC Norilsk Nickel	UnitedHealth Group
Denso	Mobile TeleSystems OJSC	United Overseas Bank
DIRECTV Group	Nan Ya Plastics	Viacom
Dongfeng Motor Group	Naspers	Visa
EADS	National Oilwell Varco	Volvo
Emerson Electric	National Thermal Power (NTPC)	VTB Bank
Empresas Copec	NextEra Energy	Wharf Holdings
EOG Resources	Nintendo	Wilmar International
Eurasian Natural Resources	Nippon Steel	Wipro
Express Scripts	NLMK	Xstrata
FANUC	NMDC	Yahoo Japan
Formosa Petrochemical	OGX Petróleo e Gás Participações	Yahoo!
Fresenius Medical Care KGaA	Oversea-Chinese Banking	Yum! Brands
Gazprom Neft	PACCAR	Zurich Financial



## Appendix B: Global 500 2011 non-publicly disclosing companies to CDP

2011 Global 500 Non-publicly disclosing companies				
AIA	China Telecom	Hon Hai Precision Industry	NextEra Energy	Souza Cruz (see British American Tobacco)
Amazon.com	China Unicom	Hong Kong and China Gas	Nintendo	Standard Bank
América Móvil	Chow Tai Fook Jewellery	Hong Kong Exchanges & Clearing	Nippon Steel	State Bank of India
American International Group	CIMB	Housing Development Finance	Novatek	Stryker
American Tower	CME	Hutchison Whampoa	OGX Petróleo e Gás Participações	Sumitomo
Annaly Capital Management	CNOOC (Red Chip)	Hyundai Heavy Industries	Oil & Natural Gas	Sumitomo Mitsui Financial Group
Apple Inc.	Coach	ICICI Bank	Oracle	Sun Hung Kai Properties
Archer Daniels Midland	Coal India	Illinois Tool Works	Otsuka Holdings	Surgutneftegas
ASML Holding	Comcast	Industrial and Commercial Bank of China	Oversea-Chinese Banking	Svenska Handelsbanken
Astra International	Compagnie Financière Richemont	International Power (see GDF Suez)	Pernod-Ricard	Synthes
Bank Central Asia	Compass	Intuitive Surgical	PETROCHINA	Sysco
Bank Mandiri	Cummins India (see Cummins)	Itochu	Petronas Chemicals Group	Telefonica Brasil (see Telefonica)
Bank of China	Danaher	Japan Tobacco	Picc Property & Casualty	Telekom Indonesia
Bank of Communications	DBS	Jardine Matheson	Ping An of China	Tenaris
Bank Rakyat Indonesia	East Japan Railway	Jardine Strategic	Power Financial Corporation	Tencent Holdings
BB&T	El Paso <sup>4</sup>	Kia Motors	PPL	Thomson Reuters
Berkshire Hathaway	Empresas COPEC	Kyocera	Precision Castparts	Time Warner Cable
Bharti Airtel	EOG Resources	Las Vegas Sands	Priceline.com	Tingyi (Cayman Islands) Holdings
BlackRock	Equity Residential	Li & Fung	Progress Energy	Tyco
BOC Hong Kong	FANUC	Lukoil	PTT	Unilever Indonesia (see Unilever)
BRF Brasil Foods	Fast Retailing	LyondellBasell Industries	Public Service Enterprise	United Overseas Bank
Bridgestone	FirstEnergy	Malayan Banking	Public Storage	Uralkali
Canadian Natural Resources	Formosa Petrochemical	Manulife Financial	Reliance Industries	Ventas
Canon	Formosa Plastics Corp	MasterCard	Rosneft	Viacom
Caterpillar	Fresenius Medical Care	McDonald's	Royal Bank of Canada	Visa
CBS	General Dynamics	McKesson	S.A.C.I. Falabella	Volvo
Central Japan Railway Company <sup>4</sup>	Glencore International	Medco Health Solutions	Saipem	VTB Bank
CEZ	Goodrich	Mitsubishi Estate	Sands China	Walgreens
Chesapeake Energy	Great West Lifeco	Mitsui & Co	Sberbank	Williams Companies
Cheung Kong	Grupo Elektra	MMC Norilsk Nickel	Seadrill Management	Wilmar International
China Construction Bank	Grupo Mexico B. de CV	Nan Ya Plastics	Sime Darby Berhad	Xstrata
China Life Insurance	HDFC Bank	Naspers	Singapore Telecom	Yahoo Japan
China Mobile	Hermes International	National Oilwell Varco	SoftBank	Zurich Insurance
China Petroleum & Chemical	Hindustan Unilever (see Unilever)	National Thermal Power (NTPC)	Southern Copper Corporation	