

Carbon Disclosure Project 2009

South Africa JSE 100

On behalf of 475 investors with assets of US \$55 trillion



Lead Partner
National Business Initiative



Report written by
Incite Sustainability



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CDP Members 2009

CARBON DISCLOSURE PROJECT
MEMBER 2009

ABRAPP - Associação Brasileira das Entidades Fechadas de Previdência Complementar Brazil
Aegon N.V. Netherlands
AIG Investments USA
APG Investments Netherlands
ASN Bank Netherlands
ATP Group Denmark
Aviva Investors UK
AXA Group France
Bank of America Corporation US
BBVA Spain
BlackRock US
BP Investment Management Limited UK
Caisse de dépôt et placement du Québec Canada
California Public Employees' Retirement System US
California State Teachers Retirement System US
Calvert Group US
Catholic Super Australia
CCLA Investment Management Ltd UK
CIBC Canada
Daiwa Asset Management Co. Ltd Japan
Essex Investment Management, LLC US
Ethos Foundation Switzerland
Folksam Sweden
Fortis Investments Belgium

Generation Investment Management UK

Grupo Santander Brasil Brazil
ING Netherlands
KLP Insurance Norway
Legg Mason, Inc. US
Libra Fund, L.P. US
London Pensions Fund Authority UK
Mistra, Foundation for Strategic Environmental Research Sweden
Mitsubishi UFJ Financial Group (MUFG) Japan
Morgan Stanley Investment Management US
National Australia Bank Limited Australia
Neuberger Berman US
Newton Investment Management Limited UK
Northwest and Ethical Investments LP Canada
Pictet Asset Management SA Switzerland
Rabobank Netherlands
Robeco Netherlands
Russell Investments UK
Schroders UK
Second Swedish National Pension Fund (AP2) Sweden
Sompo Japan Insurance Inc. Japan
Standard Chartered PLC UK
Sun Life Financial Inc. Canada
Swiss Reinsurance Company Switzerland
The RBS Group UK
The Wellcome Trust UK
Zurich Cantonal Bank Switzerland

Cover picture

This is a truly African architectural piece. Unlike European designs, centred around squares and UK designs around commons, the Fairland building mirrors Africa's meeting places, with paths and watering holes being the primary places of gathering.

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CDP Signatories 2009

475 institutional investors with assets of over US\$55 trillion were signatories to the CDP 2009 information request dated 1st February 2009, including:

Aachener Grundvermögen Kapitalanlagegesellschaft mbH	Germany
Aberdeen Asset Managers	UK
Acuity Funds	Canada
Addenda Capital Inc.	Canada
Advanced Investment Partners	US
Advantage Asset Managers (Pty) Ltd	South Africa
Aegon N.V.	Netherlands
Aeneas Capital Advisors	US
AGF Management Limited	Canada
AIG Investments	US
Alberta Investment Management Corporation (AIMCo)	Canada
Alberta Teachers Retirement Fund	Canada
Alcyone Finance	France
Allianz Group	Germany
Altshuler Shacham LTD	Israel
AMP Capital Investors	Australia
AmpegaGerling Investment GmbH	Germany
APG Investments	Netherlands
ARIA (Australian Reward Investment Alliance)	Australia
Arkitekternes Pensionskasse	Denmark
Artus Direct Invest AG	Germany
ASB Community Trust	New Zealand
ASN Bank	Netherlands
ATP Group	Denmark
Australia and New Zealand Banking Group Limited	Australia
Australian Ethical Investment Limited	Australia
AustralianSuper	Australia
Aviva Investors	UK
Aviva plc	UK
AXA Group	France
Baillie Gifford & Co.	UK
Bakers Investment Group	Australia
Banco	Sweden
Banco Bradesco S.A	Brazil
Banco de Galicia y Buenos Aires S.A.	Argentina
Banco do Brazil	Brazil
Banco Santander, S.A.	Spain
Banesprev – Fundo Banespa de Seguridade Social	Brazil
Bank of America Corporation	US
Bank Sarasin & Co, Ltd	Switzerland
Bank Vontobel	Switzerland
BANKINTER S.A.	Spain
Barclays Group	UK
BayernInvest Kapitalanlagegesellschaft mbH	Germany
BBC Pension Trust Ltd	UK
BBVA	Spain
Bedfordshire Pension Fund	UK
Beutel Goodman and Co. Ltd	Canada

BlackRock	US
Blue Marble Capital Management Limited	Canada
BMO Financial Group	Canada
BNP Paribas Investment Partners	France
Boston Common Asset Management, LLC	US
BP Investment Management Limited	UK
Brasilprev Seguros e Previdência S/A.	Brazil
British Columbia Investment Management Corporation (bcIMC)	Canada
BT Financial Group	Australia
BT Investment Management	Australia
Busan Bank	South Korea
CAAT Pension Plan	Canada
Caisse de dépôt et placement du Québec	Canada
Caisse des Dépôts	France
Caixa de Previdência dos Funcionários do Banco do Nordeste do Brasil (CAPEF)	Brazil
Caixa Econômica Federal	Brazil
Caixa Geral de Depósitos	Portugal
California Public Employees' Retirement System	US
California State Teachers Retirement System	US
California State Treasurer	US
Calvert Group	US
Canada Pension Plan Investment Board	Canada
Canadian Friends Service Committee (Quakers)	Canada
CAPESESP	Brazil
Capital Innovations, LLC	US
CARE Super Pty Ltd	Australia
Carlson Investment Management	Sweden
Carmignac Gestion	France
Catherine Donnelly Foundation	Canada
Catholic Super	Australia
Cbus Superannuation Fund	Australia
CCLA Investment Management Ltd	UK
Central Finance Board of the Methodist Church	UK
Ceres, Inc.	US
Cheyne Capital Management (UK) LLP	UK
CI Mutual Funds' Signature Advisors	Canada
CIBC	Canada
Clean Yield Group, Inc.	US
ClearBridge Advisors, Socially Aware Investment US	
Close Brothers Group plc	UK
Colonial First State Global Asset Management	Australia
Comite syndical national de retraite Bâtirente	Canada
Commerzbank AG	Germany
CommInsure	Australia
Companhia de Seguros Aliança do Brasil	Brazil
Compton Foundation, Inc.	US
Connecticut Retirement Plans and Trust Funds	US
Co-operative Financial Services (CFS)	UK
Corston-Smith Asset Management Sdn. Bhd.	Malaysia
Crédit Agricole Asset Management	France
Credit Suisse	Switzerland
Daegu Bank	South Korea
Daiwa Securities Group Inc.	Japan

DB Advisors Deutsche Asset Management	Germany
DEFO – Deutsche Fonds für Immobilienvermögen GmbH	Germany
DEGI Deutsche Gesellschaft für Immobilienfonds mbH	Germany
Deka FundMaster Investmentgesellschaft mbH	Germany
Deka Investment GmbH	Germany
DekaBank Deutsche Girozentrale	Germany
Deutsche Bank	Germany
Deutsche Postbank Privat Investment Kapitalanlagegesellschaft mbH	Germany
Development Bank of Japan	Japan
Development Bank of the Philippines (DBP)	Philippines
Dexia Asset Management	France
DnB NOR ASA	Norway
Domini Social Investments LLC	US
DPG Deutsche Performancemessungs-Gesellschaft für Wertpapierportfolio mbh	Germany
East Sussex Pension Fund	UK
Economus Instituto de Seguridade Social	Brazil
Element Investment Managers	South Africa
ELETRA – Fundação Celg de Seguros e Previdência	Brazil
Environment Agency Active Pension fund	UK
Epworth Investment Management	UK
Erste Group Bank AG	Austria
Essex Investment Management, LLC	US
Ethos Foundation	Switzerland
Eureko B.V.	Netherlands
Eurizon Capital SGR	Italy
Evangelical Lutheran Church in Canada Pension Plan for Clergy and Lay Workers	Canada
Evli Bank Plc	Finland
F&C Management Ltd	UK
Faelba	Brazil
FAELCE – Fundação Coelce de Seguridade Social	Brazil
Fédérés Gestion d'Actifs	France
First Affirmative Financial Network	US
First Swedish National Pension Fund (AP1)	Sweden
FirstRand Ltd.	South Africa
Fishman & Co.	Israel
Five Oceans Asset Management Pty Limited	Australia
Florida State Board of Administration (SBA)	US
Folksam	Sweden
Fondaction CSN	Canada
Fonds de Réserve pour les Retraites – FRR	France
Fortis Bank Nederland	Netherlands
Fortis Investments	Belgium
Forward Management, LLC	US
Fourth Swedish National Pension Fund, (AP4)	Sweden
Frankfurter Service Kapitalanlagegesellschaft mbH	Germany
FRANKFURT-TRUST Investment Gesellschaft mbH	Germany
Franklin Templeton Investment Services GmbH	Germany
Friends Provident	UK
Front Street Capital	Canada

Fukoku Capital Management Inc	Japan
Fundação AMPLA de Seguridade Social – Brasileiros	Brazil
Fundação Atlântico de Seguridade Social	Brazil
Fundação Banrisul de Seguridade Social	Brazil
Fundação CEEE de Seguridade Social – ELETROCEEE	Brazil
Fundação Codesc de Seguridade Social – FUSESC	Brazil
Fundação de Assistência e Previdência Social do BNDES – FAPES	Brazil
Fundação Forluminas de Seguridade Social – FORLUZ	Brazil
Fundação Promon de Previdência Social	Brazil
Fundação São Francisco de Seguridade Social	Brazil
Fundação Vale do Rio Doce de Seguridade Social – VALIA	Brazil
FUNDIÁGUA - Fundação de Previdência da Companhia de Saneamento e Ambiental do Distrito Federal	Brazil
Gartmore Investment Management Ltd	UK
Generation Investment Management	UK
Genus Capital Management	Canada
Gjensidige Forsikring	Norway
GLG Partners LP	UK
Goldman Sachs & Co.	US
Governance for Owners	UK
Government Employees Pension Fund (“GEPF”), Republic of South Africa	South Africa
Green Cay Asset Management	Bahamas
Green Century Funds	US
Groupe Investissement Responsable Inc.	Canada
GROUPE OFI AM	France
GrowthWorks Capital Ltd.	Canada
Grupo Banco Popular	Spain
Grupo Santander Brasil	Brazil
Gruppo Monte Paschi	Italy
Guardian Ethical Management Inc	Canada
Guardians of New Zealand Superannuation	New Zealand
Hang Seng Bank	Hong Kong
HANSAINVEST Hanseatische Investment GmbH	Germany
Harrington Investments	US
Hastings Funds Management Limited	Australia
Hazel Capital LLP	UK
Health Super Fund	Australia
Helaba Invest Kapitalanlagegesellschaft mbH	Germany
Henderson Global Investors	UK
Hermes Fund Managers	UK
HESTA Super	Australia
Hospitals of Ontario Pension Plan (HOOPP)	Canada
HSBC Holdings plc	UK
Hyundai Marine & Fire Insurance Co, Ltd	South Korea
IDBI Bank Limited	India
Ilmarinen Mutual Pension Insurance Company	Finland
Impax Group plc	UK
Industrial Bank	China
Industry Funds Management	Australia

Infrastructure Development Finance Company Ltd. (IDFC)	India
ING	Netherlands
Inhance Investment Management Inc	Canada
Insight Investment Management (Global) Ltd	UK
Instituto de Seguridade Social dos Correios e Telégrafos- Postalís	Brazil
Instituto Infraero de Seguridade Social – INFRAPREV	Brazil
Insurance Australia Group	Australia
Internationale Kapitalanlagegesellschaft mbH	Germany
Investec Asset Management	UK
Itaú Unibanco Banco Múltiplo S.A.	Brazil
J.P. Morgan Asset Management	US
Janus Capital Group Inc.	US
Jarislowsky Fraser Limited	Canada
Jubitz Family Foundation	US
Jupiter Asset Management	UK
K&H Investment Fund Management/K&H Befektetési Alapkezelő Zrt	Hungary
KB Kookmin Bank	South Korea
KBC Asset Management NV	Belgium
KCPS and Company	Israel
KDB Asset Management Co., Ltd.	South Korea
Kennedy Associates Real Estate Counsel, LP	US
KfW Bankengruppe	Germany
Kibo Technology Fund	South Korea
KLP Insurance	Norway
Korea Investment Trust Management Co., Ltd.	South Korea
KPA Pension	Sweden
Kyobo Investment Trust Management Co., Ltd.	South Korea
La Banque Postale Asset Management	France
La Financiere Responsable	France
LBBW – Landesbank Baden-Württemberg	Germany
LBBW Asset Management GmbH	Germany
LD Lønmodtagernes Dyrtdsfond	Denmark
Legal & General Group plc	UK
Legg Mason, Inc.	US
Lend Lease Investment Management	Australia
Libra Fund, L.P.	US
Light Green Advisors, LLC	US
Living Planet Fund Management Company S.A.	Switzerland
Local Authority Pension Fund Forum	UK
Local Government Superannuation Scheme	Australia
Local Super SA-NT	Australia
Lombard Odier Darier Hentsch & Cie	Switzerland
London Pensions Fund Authority	UK
Lothian Pension Fund	UK
Macif Gestion	France
Macquarie Group Limited	Australia
Magnolia Charitable Trust	US
Maine State Treasurer	US
Man Group plc	UK
Maple-Brown Abbott Limited	Australia
Marc J. Lane Investment Management, Inc.	US
Maryland State Treasurer	US
McLean Budden	Canada

MEAG Munich Ergo Asset Management GmbH	Germany
MEAG Munich Ergo Kapitalanlagegesellschaft mbH	Germany
Meeschaert Gestion Privée	France
Meiji Yasuda Life Insurance Company	Japan
Merck Family Fund	US
Mergence Africa Investments (Pty) Limited	South Africa
Meritas Mutual Funds	Canada
Metzler Investment GmbH	Germany
Midas International Asset Management	South Korea
Miller/Howard Investments	US
Mirae Investment Asset Management	South Korea
Mistra, Foundation for Strategic Environmental Research	Sweden
Mitsubishi UFJ Financial Group (MUFG)	Japan
Mitsui Sumitomo Insurance Co., Ltd.	Japan
Mizuho Financial Group, Inc.	Japan
Mn Services	Netherlands
Monega Kapitalanlagegesellschaft mbH	Germany
Morgan Stanley Investment Management	US
Motor Trades Association of Australia Superannuation Fund Pty Ltd	Australia
MP Pension – Pensionskassen for Magistre og Psykologer	Denmark
Munich Re Group	Germany
Mutual Insurance Company Pension-Fennia	Finland
Natcan Investment Management	Canada
Nathan Cummings Foundation, The	US
National Australia Bank Limited	Australia
National Bank of Canada	Canada
National Bank of Kuwait	Kuwait
National Grid Electricity Group of the Electricity Supply Pension Scheme	UK
National Grid UK Pension Scheme	UK
National Pensions Reserve Fund of Ireland	Ireland
Natixis	France
Needmor Fund	US
Nest Sammelstiftung	Switzerland
Neuberger Berman	US
New Alternatives Fund Inc.	US
New Jersey Division of Investment	US
New Mexico State Treasurer	US
New York City Employees Retirement System	US
New York City Teachers Retirement System	US
New York State Common Retirement Fund (NYSCRF)	US
Newton Investment Management Limited	UK
NFU Mutual Insurance Society	UK
NH-CA Asset Management	South Korea
Nikko Asset Management Co., Ltd.	Japan
Nissay Asset Management Corporation	Japan
Nordea Investment Management	Sweden
Norfolk Pension Fund	UK
Norges Bank Investment Management (NBIM)	Norway
Norinchukin Zenkyouren Asset Management Co., Ltd	Japan
North Carolina State Treasurer	US
Northern Ireland Local Government Officers' Superannuation Committee (NILGOSC)	UK

Northern Trust	US
Northwest and Ethical Investments LP	Canada
Oddo & Cie	France
Old Mutual plc	UK
OMERS Administration Corporation	Canada
Ontario Teachers Pension Plan	Canada
Opplysningsvesenets fond (The Norwegian Church Endowment)	Norway
Oregon State Treasurer	US
Orion Asset Management LLC	US
Pax World Funds	US
PBU – Pension Fund of Early Childhood Teachers	Denmark
Pension Fund for Danish Lawyers and Economists	Denmark
Pension Protection Fund	UK
Pensionskassen for Jordbrugsakademikere og Dyrleger	Denmark
PETROS – The Fundação Petrobras de Seguridade Social	Brazil
PFA Pension	Denmark
PGGM	Netherlands
Phillips, Hager & North Investment Management Ltd.	Canada
PhiTrust Active Investors	France
Pictet Asset Management SA	Switzerland
Pioneer Alapkezelő Zrt.	Hungary
Pioneer Investments Kapitalanlagegesellschaft mbH	Germany
PKA	Denmark
Portfolio 21 Investments	US
Portfolio Partners	Australia
Porto Seguro S.A.	Brazil
PPM Premiepensionsmyndigheten	Sweden
PRECE Previdência Complementar	Brazil
PREVI Caixa de Previdência dos Funcionários do Banco do Brasil	Brazil
Principle Capital Partners Limited	UK
PSP Investments	Canada
QBE Insurance Group Limited	Australia
Q Capital Partners	South Korea
Railpen Investments	UK
Rathbones/Rathbone Greenbank Investments	UK
Real Grandeza Fundação de Previdência e Assistência Social	Brazil
Rei Super	Australia
Rhode Island General Treasurer	US
RLAM	UK
Robeco	Netherlands
Rose Foundation for Communities and the Environment	US
Royal Bank of Canada	Canada
RREEF Investment GmbH	Germany
Russell Investments	UK
SAM Group	Switzerland
Sanlam Investment Management	South Africa
Santa Fé Portfolios Ltda	Brazil
Sauren Finanzdienstleistungen	Germany
Savings & Loans Credit Union (S.A.) Limited.	Australia
Schroders	UK
Scotiabank	Canada
Scottish Widows Investment Partnership	UK

SEB	Sweden
SEB Asset Management AG	Germany
Second Swedish National Pension Fund (AP2)	Sweden
Seligson & Co Fund Management Plc	Finland
Sentinel Funds	US
SERPROS Fundo Multipatrocinado	Brazil
Service Employees International Union Benefit Funds	US
Seventh Swedish National Pension Fund (AP7)	Sweden
Shinhan Bank	South Korea
Shinhan BNP Paribas Investment Trust Management Co., Ltd	South Korea
Shinkin Asset Management Co., Ltd	Japan
Shinsei Bank Limited	Japan
Siemens Kapitalanlagegesellschaft mbH	Germany
Signet Capital Management Ltd	Switzerland
Skandia Nordic Division	Sweden
SMBC Friend Securities Co., LTD	Japan
Smith Pierce, LLC	US
SNS Asset Management	Netherlands
Social(k)	US
Société Générale	France
Sompo Japan Insurance Inc.	Japan
Souls Funds Management Limited	Australia
SPF Beheer bv	Netherlands
Sprucegrove Investment Management Ltd	Canada
Standard Chartered PLC	UK
Standard Life Investments	UK
State Street Corporation	US
Statewide Superannuation Trust	Australia
Storebrand ASA	Norway
Strathclyde Pension Fund	UK
Stratus Group	Brazil
Sumitomo Mitsui Banking Corporation	Japan
Sumitomo Mitsui Card Company, Limited	Japan
Sumitomo Mitsui Finance & Leasing Co., Ltd	Japan
Sumitomo Mitsui Financial Group	Japan
Sumitomo Trust & Banking	Japan
Sun Life Financial Inc.	Canada
Superfund Asset Management GmbH	Germany
Svenska Kyrkan, Church of Sweden	Sweden
Swedbank	Sweden
Swiss Reinsurance Company	Switzerland
Swisscanto Holding AG	Switzerland
Syntus Achmea Asset Management	Netherlands
TD Asset Management Inc. and TDAM USA Inc.	Canada
Teachers Insurance and Annuity Association – College Retirement Equities Fund (TIAA-CREF)	US
Tempis Capital Management	South Korea
Terra Forvaltning AS	Norway
TfL Pension Fund	UK
The Bullitt Foundation	US
The Central Church Fund of Finland	Finland
The Collins Foundation	US
The Co-operators Group Ltd	Canada
The Daly Foundation	Canada
The Dreyfus Corporation	US
The Japan Research Institute, Limited	Japan

The Joseph Rowntree Charitable Trust	UK
The Local Government Pensions Insitution (LGPI) (keva)	Finland
The Presbyterian Church in Canada	Canada
The RBS Group	UK
The Russell Family Foundation	US
The Shiga Bank, Ltd.	Japan
The Standard Bank of South Africa Limited	South Africa
The Sustainability Group at the Loring, Wolcott & Coolidge Office	US
The Travelers Companies, Inc.	US
The United Church of Canada – General Council	Canada
The University of Edinburgh Endowment Fund	UK
The Wellcome Trust	UK
Third Swedish National Pension Fund (AP3)	Sweden
Threadneedle Asset Management	UK
Tokio Marine & Nichido Fire Insurance Co., Ltd.	Japan
Toronto Atmospheric Fund	Canada
Trillium Asset Management Corporation	US
Triodos Bank	Netherlands
TrygVesta	Denmark
UBS AG	Switzerland
Unibanco Asset Management	Brazil
UniCredit Group	Italy
Union Asset Management Holding AG	Germany
Union Investment Institutional GmbH	Germany
Union Investment Privatfonds GmbH	Germany
Union Investment Service Bank AG	Germany
Union PanAgora Asset Management GmbH	Germany
UniSuper	Australia
Unitarian Universalist Association	US
United Methodist Church General Board of Pension and Health Benefits	US
United Nations Foundation	US
Universal Investment Gesellschaft mbH	Germany
Universities Superannuation Scheme (USS)	UK
Vancity Group of Companies	Canada
VERITAS SG INVESTMENT TRUST GmbH	Germany
Vermont State Treasurer	US
VicSuper Pty Ltd	Australia
Victorian Funds Management Corporation	Australia
Visão Prev Sociedade de Previdencia Complementar	Brazil
Waikato Community Trust Inc	New Zealand
Walden Asset Management, a division of Boston Trust and Investment Management Company	US
Warburg-Henderson Kapitalanlagegesellschaft für Immobilien mbH	Germany
West Yorkshire Pension Fund	UK
WestLB Mellon Asset Management (WMAM)	Germany
Westpac Investment Management	Australia
Winslow Management Company	US
WOORI BANK	South Korea
YES BANK Limited	India
York University Pension Fund	Canada
Youville Provident Fund Inc.	Canada
Zurich Cantonal Bank	Switzerland

“As a high carbon emitter, South Africa has the responsibility to demonstrate leadership on the continent. Such leadership must be accompanied by target setting, measurement and verification of performance.”

Minister Sonjica

Minister's Foreword

Climate change is arguably the biggest challenge for humanity in the 21st century. It threatens to undermine the global effort to achieve the millennium development goals (MDGs). Climate change is fuelled by the carbon intensive global economy. The new global agenda on climate change is intent on creating a new economy that is less carbon intensive in a bid to curb the greenhouse gas emissions. A less carbon intensive global economy explores new ways of doing business that promote efficient use of resources leading to significantly reduced greenhouse gas emissions. Business is expected to take the lead in this regard. Therefore the top 100 JSE listed companies must be highly commended for taking the lead to disclose their carbon footprint and plans to reduce it, thereby contributing to mitigating climate change.

Equally important is that recent scientific studies have identified Africa as the most vulnerable continent to climate change. The anticipated climate change will decrease food security, water resources and compromise infrastructure. These impacts will affect business and render our local economy non competitive, strengthening the contention that building resilience to climate change will require partnership between business, government and communities at large.

South Africa is a diverse country in terms of culture, religion and languages. The public at large is crucial to addressing the challenge of climate change. It is therefore important that we demystify climate change into a common language that is understood by all. A language that simplifies scientific and business jargon and traverses language barriers so that every individual and institution in society understands the significance of climate change and their respective roles in responding to it. This will expedite processes by either government or business to mobilize the public at large towards mitigation and adaptation to climate change.

The government of South Africa and the business sector agreed to pursue the required by science scenario of the Long Term Mitigation Scenarios (LTMS) study in a bid to curb greenhouse gas emissions. It is also important to stress the need for adaptation since the world is committed to a certain level of climate change that will require new coping mechanisms. In addition to adaptation and mitigation, the business sector will need to discuss technology needs for a low carbon economy as well as the possible mechanisms to finance these at local level.

In conclusion, it must be emphasized that as a high carbon emitter, South Africa has the responsibility to demonstrate leadership on the continent. Such leadership must be accompanied by target setting, measurement and verification of performance. Greenhouse gas emission reporting by industries will soon be mandatory in South Africa and non compliance shall be met by penalties. It is therefore to the benefit of industry to take the lead in reporting greenhouse gas emissions to avoid such penalties and litigation risks. Industries that have taken the lead in the Carbon Disclosure Project are congratulated and those that have not responded are encouraged to demonstrate leadership in the future.



Ms Buyelwa Sonjica, MP

Minister of Water and Environmental Affairs

Partner and Sponsor Forewords



National Business Initiative

The top 100 JSE listed Carbon Disclosure Project report for South Africa is a quality resource document for all stakeholders who are interested in addressing climate change. In this year's report, we are especially pleased to acknowledge the fact that the South African Government Pension Fund worth over R650 billion in assets, has become the latest signatory investor and by so doing, is demonstrating local interest in assessing climate risk and opportunity in its investment decisions.

The steady increase in the number of companies responding as well as the improved quality of reporting and improvement in performance is also to be commended.

Inevitably, the question must be addressed as to whether the South African private sector is moving far enough and fast enough in identifying the significance of climate change to their business. While the environmental driver for addressing climate change remains a substantive enough reason to respond to climate change given its impact on air quality, land use, changing temperatures and rainfall patterns, the economic and social drivers for addressing climate change have increased substantially in the build up to Copenhagen.

Whether Copenhagen delivers a significant consensus on a new international agreement or not, the economic impacts of climate change cannot be ignored. Globally, changing climate patterns have already created increased variability in weather patterns which in turn have impacted on food production, destruction of infrastructure such as roads and buildings, deaths of thousands of people, loss of productivity, disruption of logistics and impacts on human health and ecosystems that support human wellbeing and prosperity.

While it is fair to consider the fact that South Africa is a developing economy and therefore needs a different dispensation as compared with developed nations, the significance of trading with developed nations who are regulated by emission targets and caps on trade cannot be ignored in terms of its possible impact on the South African economy. The fact that South Africa is pursuing an economic growth trajectory provides many opportunities for South Africa to mitigate and adapt to the future impacts of climate change by building a new architecture of legislative requirements, financial mechanisms, infrastructural criteria, investment in Research and Development and human capital development.

Such investment will contribute to South Africa's competitiveness as a developing economy and protect and conserve its essential resources such as energy, water, land and other ecosystems that form the basis of its economy.

Finally, we encourage companies to interrogate this report beyond the boundaries of their own sectors and to take note of how the targets and responses of other sectors may impact on their business.

A handwritten signature in black ink, reading 'André'.

André Fourie

Chief Executive, National Business Initiative



Incite Sustainability

Most climate change scientists and policy commentators agree that we have a very short decision-window left if we are to respond effectively to the challenge of climate change. These decisions will not be easy; they will require politicians to choose actions that will confound certain business assumptions and that may, at first, appear unnecessarily costly – all in the name of addressing a challenge the full impacts of which remain uncertain and that, for many, are not yet sufficiently visible.

In making these tough decisions, policy-makers and business leaders will need access to quality data; and we will need a business community that is receptive to vigorous policy reform. We believe that the Carbon Disclosure Project is making an important contribution in addressing both of these needs.

Incite Sustainability, a South African policy and strategy consultancy, is proud to have initiated the Carbon Disclosure Project (CDP) in South Africa, in partnership with the NBI, and to have once again undertaken the analysis for this year's CDP report. It is most encouraging to see the extent to which this initiative has taken a firm hold in the country, with South Africa now showing one of the highest response rates globally. Our principal motivation for bringing the CDP to this country was to stimulate informed debate within the business media and the financial sector, two key levers in effecting change in the corporate sector. We are pleased with the results that this initiative has brought in these areas.

The results of this year's CDP show that climate change issues are gaining increasing prominence on the corporate agenda. It is particularly encouraging this year to see the



increase in the number of companies that have started to voluntarily measure and publicly report on their greenhouse gas emissions, as well as the significant increase in those who have set emission reduction targets or have committed to doing so. These are both especially encouraging developments given that South Africa is a developing country and thus does not yet have its own national emission reduction commitments. As this report will show, however, while these are welcome developments, there is much that remains to be done if business is to demonstrate the leadership required to respond in a sufficiently timely manner to the global climate challenge.

In preparing for the all-important talks in Copenhagen in December, where diplomats and politicians will be gathering to develop and agree a post-Kyoto climate regime, South African negotiators will need an understanding of South Africa's emission levels and an appreciation of the impacts that climate change may have for our economy. It is hoped that the CDP process will make a useful contribution to their efforts as they prepare for the tough decisions that need to be made, and that it will also encourage the further development of climate leadership within the South African business sector.

Jonathon Hanks

Managing Partner, Incite Sustainability

KPMG

The past 10 years has seen climate change explode on to the global agenda, and riding in its wake, a new order of regulations, legislation and compliance measures for companies to adhere to. Tightening regulations in energy efficiency, building standards, vehicle emission standards, waste regulations and greenhouse gas (GHG) reporting are all imminent.

Measures will be set out in a Policy White Paper on Climate Change to be released by government in 2010, with the translation of this policy into a legislative, regulatory and fiscal package by 2012. For companies that generate large quantities of GHGs or purchase large amounts of energy, climate change regulation is a significant issue that is likely to affect future costs. But climate change regulation is not just about GHG emissions and energy use; it has considerable implications for international trade, agriculture, transportation, tourism and other areas. If we continue to grow without a carbon constraint, South Africa faces the threat of border tax adjustments or trade sanctions from key trading partners, and the eradication of thousands of jobs in the high emitting trade exposed sectors.

Climate change is a mega-trend, and the momentum created by the upcoming climate change negotiations could enable climate-compatible development in important sectors. To capture each opportunity will take continued strong domestic policy action, that builds on recent progress to build institutional capacity (integrated with current development priorities and taking account of existing barriers to development), support for the private sector's role in financing and operating infrastructure, and international support.

The climate change negotiations could offer unprecedented opportunities for Africa to strengthen its adaptive capacity and to move towards low-carbon economic development in a way that will use its comparative advantages (e.g. forests, hydro and solar power potential and land) to attract investments from the private sector and benefit its nations. Targeted adaptation measures related to irrigation, drought resistant agricultural

techniques, and health systems could draw new attention and incremental funding, while Africa's comparatively low cost mitigation potential —mainly in land use and forestry —could give the region a strong position in a global climate change deal focused on emission reductions, and avoid the 36% forecast emissions growth from under a business as usual scenario. And, Africa's development could avoid the lock-in of high carbon infrastructure and realise climate-compatible growth opportunities that would both keep emissions low and offer substantial additional benefits including energy security, rural income opportunities, protection of biodiversity, lower pollution, and reduced migration and potential for conflict. The prospects to explore new areas of business that have arisen out of the climate change challenge have therefore never been greater.

If companies are not yet convinced that climate change requires a focused and tactical approach, then ponder this: investors are beginning to evaluate corporations on the basis of their preparedness for associated risks and opportunities related to climate change. Every day, more and more money is flowing towards companies that are demonstrating an understanding of how climate change is impacting their business and are implementing actions to thrive in the new, carbon-constrained global economy. They are limiting their carbon exposure, maximizing energy use and evaluating products and supply chain impacts - and they're out-competing their dawdling peers in the increasingly competitive market for capital and consumer revenue.

KPMG applauds the companies participating in the CDP that have started this process. Facing up to the immense challenges, and responding positively to it can only build better, more resilient businesses and we are proud to be associated with all those who are laying the foundation for positive action.

Moses Kgosana

CEO, KPMG Africa



Element Investment Managers

Although long-term climate change policies are vital, investors cannot wait for policy-makers to take action on the threat of climate change. We make long-term decisions on behalf of our clients and investors. Climate change and climate policy could have a material impact on the global economy and investment asset classes. The investment market has made errors due to a shorter-term focus. Systemic risks are often overlooked such as the technology bubble, corporate governance failures and the current financial crises. Will climate change be next?

Climate risks may have material financial implications for an individual company and investment portfolios. Element Investment Managers (formerly Frater Asset Management) is a Carbon Disclosure Project (CDP) signatory investor and sponsor, as we believe the global initiative helps build awareness of climate change risks and opportunities and encourages companies to take action to mitigate these risks and take advantage of the opportunities. The CDP encourages companies to improve their disclosure relating to climate change. Better information leads to better company valuations. The better valuations can lead to better investment decisions on behalf of investors.

In May 2006 Element Investment Managers became the first South African asset manager to sign the UN Principles for Responsible Investment (UN PRI). The UN PRI requires investors to incorporate environmental, social and governance (ESG) issues into their investment analysis and decision making.

While failure to recognise environmental, social and governance (ESG) risks and opportunities may not immediately translate into financial outcomes, this is unlikely to be true in the long-term which is the time horizon of greatest concern to institutional investors and their beneficiaries.

Signatories to the UN PRI are required to develop an engagement capability. Element Investment Managers are committed to encouraging and

engaging South African companies to carefully consider climate change risks and opportunities and improve disclosure where necessary.

Is business in South Africa up to the challenge of climate change? This question is important as climate change awareness and action could be material for our long-term investment decisions. The CDP report is an important source of information to help investors identify companies that are dealing timeously with climate change risks and opportunities.

A handwritten signature in black ink, appearing to read "D. Couldridge".

David Couldridge

Investment Analyst, Element Investment Managers

“The investment market has made errors due to a shorter-term focus. Systemic risks are often overlooked such as the technology bubble, corporate governance failures and the current financial crises. Will climate change be next?”

Element Investment Managers



Webber Wentzel

Climate change is recognised as a major challenge of the 21st century and leading companies are taking early action to mitigate the risks and take advantage of the commercial opportunities that it presents. The risks to corporates include:

- operational risk in the form of disruption and delays;
- regulatory risk in the form of compliance with national and international regulations and legislation limiting carbon emissions;
- the direct and indirect taxation of carbon emissions;
- reputational and competitive risk, including consumer and shareholder activism;
- insurance risk in the form of increased premiums, excess payments and even uninsurability; and
- last, but not least, litigation risk.

Therefore, to combat climate change, a huge economic and social effort is called for, mainly focused on the mitigation of greenhouse gases, but also in response to the political, social, commercial and legal implications thereof.

In response to the needs of a diverse client base, Webber Wentzel led the market in establishing a Climate Change and Carbon Trading Practice Group, which has built up considerable experience and expertise. We have advised on significant carbon trading matters, including regulatory and tax advice, transactions under the Kyoto Protocol's Clean Development Mechanism and the listing of a Carbon Credit Note on the JSE. We also hosted the first South African conference on the legal implications of carbon trading.

Climate change cases have already begun featuring in courts and tribunals around the world. An analysis of these lawsuits show that they comprise of actions against regulators for failing to

have adequate standards, challenges to the application of laws and regulations; cases alleging liability for the costs of combating and adapting to climate change and cases based on the failure to curb emissions, including class actions, actions against directors and product liability cases.

Potential claimants include individuals whose health has been affected (and in this regard comparisons with tobacco litigation are not far-fetched), plaintiffs who have suffered property damage or economic loss, NGOs and local and national government. These claims will increase in number and size as the effect of climate change becomes more acute. Most commentators agree that those entities who practice denial and deceit and who take no active steps to curb emissions will bear the brunt of this litigation.

Prudent companies are those who reduce their exposure by assessing the risks early, disclosing their emissions in a responsible and transparent manner and taking steps to reduce emissions and limit liability. Participation in the CDP is an important indication of such responsible corporate citizenship and taking climate change seriously.

Webber Wentzel is therefore proud to be one of the sponsors of the CDP.

Johann Scholtz

*Partner and Head, Webber Wentzel
Climate Change and Carbon Trading
Practice Group*

Executive Summary

Introduction

Since 2000, the Carbon Disclosure Project (CDP) has, on behalf of institutional investors, challenged the world's largest companies to measure and report their carbon emissions, integrating the long-term value and cost of climate change into their assessment of the financial health and future prospects of their business.

This year, CDP – backed by 475 institutional investors representing more than US\$55 trillion of funds under management – sent questionnaires to more than 3,700 of the world's largest corporations requesting information on their greenhouse gas emissions, on the potential climate-related risks and opportunities to their businesses and on their strategies for managing these risks and opportunities. The corporations' individual responses, as well as regional reports assessing these responses, have been published in more than 20 countries around the world and are freely available at www.cdproject.net. The CDP continues to be the global leader in capturing and analysing data that records the business response to climate change; whether it be risks and opportunities, absolute emissions levels, performance over time or governance.

This report, prepared by Incite Sustainability, analyses the responses from the 100 largest corporations on the South African JSE.

The CDP questionnaire

An underlying objective of the CDP is to review and assess the action and disclosure of companies and sectors against what is seen as a best practice response to the challenges of climate change. In line with what are seen to be the key elements of an effective climate change strategy (see Box 3; page 48), the CDP questionnaire focuses on four key areas of corporate climate change management: risks and opportunities; greenhouse gas (GHG) emissions accounting; performance;

and governance. These questions provide companies with an opportunity to identify the strengths and current limitations in different aspects of their management of climate change related issues.

CDP 2009 Highlights

Improved response rate in South Africa despite the economic downturn.

South Africa's third CDP generated a response rate of 68% (as compared with last year's 59%), ranking South Africa as the fifth highest CDP response rate internationally. This suggests that, notwithstanding short-term concerns and the pressures associated with the economic downturn, climate change remains sufficiently high on the agenda.

General improvement in response rate across most sectors.

While the more carbon-intensive sectors – such as Energy, Industrials and Materials – continue to display the highest response rates, it is encouraging to see that certain sectors that may be less obviously exposed to climate risk nevertheless have reasonable response rates, and that there has been positive progress since 2008.

Concerns remain, however, regarding the poor response rate of certain sectors.

Certain sectors continue to have fairly low response rates, including most noticeably Food Products (only one out of six responded publicly; and one non-publicly); Real Estate (only two out of nine companies responded publicly; two non-publicly); Leisure Entertainment & Hotels (neither of the two companies responded).

Improved levels of disclosure evident on most key issues.

Disclosure levels have improved across all the key issues – namely risks and opportunities, GHG emissions and energy use, GHG reduction targets and activities, and climate governance practices – with the disclosure of emission figures showing the greatest

The response rate to South Africa's third CDP is amongst the highest internationally and suggests that local companies are largely willing to engage climate change issues.

87%

of responding companies have disclosed their GHG emissions, albeit partially in many instances.

year-on-year improvement. The low number of companies with emissions forecasts remains an area of concern.

87% of responding companies disclosed their GHG emissions.

This is an important increase on last year's 77% disclosure rate, and is accompanied by a significant increase in the disclosure of Scope 3 emissions across most sectors, as well as in the reporting of emissions intensity data. There has also been an increase in the number of companies verifying their data (24 compared with 13 last year), and in those reporting on their emissions in annual and/or sustainability reports (50 companies as compared with 34).

Growing awareness among South African companies of the risks and opportunities of climate change, although much of this remains at a general level.

While most responding companies recognise that climate change will also entail potential significant regulatory, physical and general risks and opportunities for their operations, few companies show evidence of being rigorous in quantifying the potential financial implications of climate change, and questions remain regarding the extent to which companies are responding at a sufficiently strategic level to the risks and opportunities that they identify.

Increase in number of companies with GHG emissions and/or energy reduction targets.

This year, 20 companies have GHG emissions targets, while 11 are defining such targets. Last year only 12 companies reported having GHG targets. Twenty-two companies have energy reduction targets. Questions remain, however, regarding the level of ambition of these targets, both in the context of global and national emissions reduction requirements and recent studies on what may be technologically and economically feasible.

Focus on energy efficiency measures; scope remains for further investment in renewables.

There has been a noticeable increase in disclosure on emissions reduction activities, with the greatest focus being on energy efficiency initiatives. While there has also been increased investment in renewable energy

opportunities, the level of investment remains small, particularly compared with recent international developments and in the context of estimated investment opportunities in the country.

Limited evidence of climate adaptation strategies. It appears that local companies are insufficiently advanced in their adaptation initiatives; while this may be partly a result of the nature of the CDP questionnaire, which focuses predominantly on mitigation activities, it is suggested that there be scope for a more structured focus by companies on adaptation opportunities.

Indications that climate change issues are increasingly integrated in companies' governance activities.

Fifty-four companies (86% of respondents) report having a Board Committee or executive body with responsibility for climate change; 19 companies (30%) provide incentives to management on achievement of climate change goals. While there are indications that companies have increased their focus on partnership opportunities, valuable additional possibilities remain.

South Africa's industrial GHG emissions continue to be dominated by a few companies.

A few carbon-intensive companies continue to dominate South Africa's direct GHG emissions.

South Africa's estimated total emissions from all sources is approximately 440 million metric tonnes of CO₂-e. For the 55 JSE companies that reported their emissions – including from those companies whose emissions have not been made public – total Scope 1 emissions (i.e. excluding emissions associated with electricity usage) for the South African operations is 101 million metric tonnes of CO₂-e. In terms of direct local emissions, the data highlights the predominant contribution of *Sasol* (with reported annual emissions of 61 million metric tonnes of CO₂-e), followed by *ArcelorMittal SA* (12.4 million metric tonnes), *BHP Billiton* (4.5 million metric tonnes), and *Anglo American* (3.4 million metric tonnes). *Eskom*'s reported emissions are 220 million metric tonnes.

Electricity use dominates most companies' emissions. For most companies and sectors, electricity usage remains a dominant source of emissions, underlining the significant

impact that decisions relating to the nature of the Eskom generation mix will have on corporate efforts to reduce emissions.

The South African Carbon Disclosure Leadership Index

The Carbon Disclosure Leadership Index (CDLI) has been developed to identify companies with outstanding disclosure practices. This assessment is based on the quality of the disclosure by companies in their response to the CDP questionnaire, and is not necessarily a reflection of the quality of the company's performance in addressing climate change issues. This year the top 16 companies constituted an evident cluster of leaders, with a clear break between their scores and the remaining responding companies; the number of companies included in the CDLI may change year-on-year depending on the nature of the responses.

This year *Nedbank Group* qualified as the overall leader with 90 points, followed by *The Bidvest Group* and *Woolworths Holdings* (83) and *BHP Billiton* (82). This shows some consistency with last year's performance where *Woolworths Holdings* ranked top in the low-carbon category and *BHP Billiton* qualified as the overall leader in the carbon-intensive category. Last year *Nedbank Group* ranked fourth in the low-carbon sector, while *The Bidvest Group* ranked tenth in the carbon-intensive sector.

In general the results are comparable with CDP6 (2008), reflecting a similar breakdown in sectoral representation, with many of the same companies appearing again. Top performers in terms of disclosure tend to come from the Materials and Energy sector (eight of the top 16), followed by the Financial sector (four of the top 10).

New entrants this year amongst the top 16 companies include: *Sappi*, *Old Mutual*, *Sanlam*, *Santam*, *Anglo Platinum* and *Netcare*.

Table 1: Carbon Disclosure Leadership Index: JSE 100

Rank	Company	Sector	Score
1	Nedbank Group	Financial	90
2	The Bidvest Group	Industrials	83
2	Woolworths Holdings	Consumer	83
4	BHP Billiton	Materials	82
5	Gold Fields	Materials	79
5	Sappi	Materials	79
7	AngloGold Ashanti	Materials	75
7	Santam	Financial	75
9	Dimension Data Holdings	IT & Telecomms	74
9	Old Mutual	Financial	74
9	Sanlam	Financial	74
12	Anglo Platinum	Materials	73
12	Exxaro Resources	Materials	73
14	Northam Platinum	Materials	72
14	Netcare	Health Care	72
16	Sasol	Energy	71

Note: Incite Sustainability undertook the scoring for the South African CDLI (2009) based on the CDLI scoring methodology 2009 (www.cdproject.net/carbon-disclosure-leadership-index.asp) and on additional guidance provided by the CDP in the scoring of the Global 500 (collectively referred to as the "methodology"). KPMG provided a third party review on the application of the methodology. This work included assessing a sample of responses against the methodology and reviewing the integrity of the allocated score. Any deviations from the methodology were raised and appropriately resolved. On this basis, Incite Sustainability and the CDP are confident that the methodology has been consistently applied.¹

The CDP Performance Scores for South African Companies

This year the CDLI scoring methodology included – for the first time and on a pilot basis – separate scores for performance. Whereas historically scores have reflected the standard of *disclosure*, these performance scores seek to assess the nature of a company's climate mitigation and adaptation *actions*.

Table 21 (page 62) presents the outcomes of this trial performance scoring initiative for the South African respondents. To facilitate comparison with the CDLI, the table has identified the top 16 companies in terms of their performance scores. Due to the preliminary nature of the performance scoring system, the companies are not ranked and the scores are not

provided; the companies are simply listed by sector and in alphabetical order.

Six companies are included in the top 16 performance ranking that did not qualify for the CDLI (*Massmart Holdings*, *Pick n Pay Holdings*, *SABMiller*, *Medi-Clinic Corporation*, *Anglo American* and *Mondi*), while four companies that are included in the CDLI did not qualify for the top 16 performance ranking (*The Bidvest Group*, *AngloGold Ashanti*, *Sanlam* and *Northam Platinum*).

1. In some instances there were minor deviations between the scoring by KPMG of some companies undertaken as part of the South African CDLI compared to the scoring undertaken for these same companies as part of the Global 500 CDLI. In such instances, the scoring was not changed as the CDP Global 500 report had already been published.

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1

The Carbon Disclosure Project: Global Overview

The turmoil in the financial markets and the global economy over the last year has highlighted the importance of effective disclosure and high-quality risk management. The financial crisis of 2008 suggests we need to better understand systemic risks that can cause significant destabilising impacts in the global economy. Climate change has the potential to cause disruption in the form of unforeseen, high-impact events (such as extreme weather) as well as a longer term reassignment of value across countries, industries and corporations.

The Intergovernmental Panel on Climate Change (IPCC) predicts that 'future climate impacts show that the consequences could vary from disruptive to catastrophic'². So it is vital that policymakers, companies and investors have a full understanding of the associated risks and opportunities. According to HSBC research³, governments around the world have allocated US\$430 billion in fiscal stimulus to key climate change themes. Those providing the low carbon solutions are very well positioned to benefit, while those who ignore the risks gamble on being left behind.

By convening the collective power of the investment community, represented in 2009 by more than 475 investors, with US\$55 trillion in assets under management, CDP motivates more than 1800 companies globally to report their climate change strategies and greenhouse gas emissions. This global system provides the market, investors, policymakers and procurement directors with a clear understanding of how companies are positioned as we move towards a low carbon economy and ensures corporations provide full transparency on climate change.

Global CDP Response Trends

This year has seen considerable growth in responses from emerging economies such as China, South Africa and Korea, and CDP expanded in Russia in 2009 where major companies such as *Gazprom* and *Novatek* reported. CDP's reach continues to grow with the launch of the first CDP Europe report, covering the largest 300 European listed companies, as well as expansion into countries within Central and Eastern Europe. CDP has also opened new offices in Germany and Brazil, both key economies in the fight against climate change.

While the quantity and quality of data available has increased significantly, so has the use of the data, which is acting as a catalyst for changing business behaviour. CDP data is increasingly being integrated into mainstream financial analysis, is available through Bloomberg Professional Services, and used to provide sector based analysis to CDP signatory members. A recent report produced by Mercer supports this view.

Some CDP signatories, such as *CalSTRS* are going a step further, using shareholder resolutions to encourage companies to report through CDP and implement climate change management strategies. CDP is also working with the Principles of Responsible Investment (PRI) to drive awareness and improve climate change reporting. CDP has recently entered a new partnership with financial information services company *Markit* to build a suite of indices based on the Carbon Disclosure Leadership Index, which will be licensed to exchange-traded fund (ETF) and structured product providers.

CDP now works with more than 55 organisations including *Dell*, *Unilever*, *Wal-Mart Stores* and the British Government to measure and assess climate change risk and opportunity through the supply chain. More than 800 companies report their climate change strategies through the CDP system to their customers and as a result there has been a significant increase in the use of CDP data in procurement operations. Now procurement professionals can understand how their supply chains may be impacted and as a result begin to future-proof their procurement systems against climate change.

The process of measuring emissions is central to emissions management and reduction. As regulatory frameworks develop to mandate emission reductions, CDP's role will expand. CDP will continue to work with corporations, policymakers and information users to produce practical and robust results that complement the development of mandatory reporting rules.

In order to continue to provide the global hub for carbon reporting, CDP is currently undergoing a significant systems upgrade, designed to improve data comparability, facilitate benchmarking services and ultimately deliver data that is appropriate for investment analysis and regulatory submissions. In countries like the US and UK, where mandatory carbon reporting is on the horizon, CDP's systems will help companies prepare for such requirements and will eventually integrate with existing national registries to enable corporations to disclose more detailed and standardised data. Climate change is a global problem, which requires a global solution and by bridging the gaps between national governments and international businesses across the globe, CDP will help to connect the national and international climate change ecosystem.

² http://unfccc.int/essential_background/feeling_the_heat/items/2905.php

³ HSBC Global Research: A Climate for Recovery The colour of stimulus goes green.

Table 2: Snapshot of global key trends⁴

This table outlines some of the key findings from CDP 2009 by geography and industry data-set.⁵

Sample: geography/ number of companies	% of sample answering CDP 2009	% of sample answering CDP6 (2008) ⁶	% of responders with Board level responsibility for climate change	% of responders seeing regulatory risks	% of responders seeing regulatory opportunities	% of responders seeing physical risks	% of responders seeing physical opportunities	% of responders disclosing Scope 1 emissions	% of responders disclosing Scope 2 emissions	% of responders externally verifying emissions disclosures	% of responders engaged/considering participation in emissions trading	% of responders with an emissions reduction/energy reduction plan	% of responders engaging with policy makers on climate change
Asia-ex JICK 100 ⁷	31	[35]	76	55	76	66	55	66	69	31	17	59	62
Australia 200	52	48	80	79	81	82	56	81	83	46	50	67	73
Brazil 80	76	[83]	49	61	73	73	53	61	55	22	25	61	49
Canada 200	49	55	70	57	68	56	46	81	76	27	34	49	61
Central & Eastern Europe 100	8	-	75	50	50	75	25	75	25	75	50	100	50
China 100	10	5	56	67	78	67	44	22	22	22	11	67	44
Europe 300	82	-	85	80	90	75	63	91	85	77	58	89	79
France 120	58	63	77	69	84	66	61	79	77	63	47	81	66
Germany 200	51	55	65	58	70	44	47	63	57	45	33	63	55
Global 500	81	77	80	78	84	78	63	85	80	63	54	80	74
Global Electric Utility 250	49	52	71	79	84	75	62	81	50	61	57	60	77
Global Transport 100	67	58	84	81	84	79	50	79	68	50	43	72	74
India 200	18	19	52	14	66	62	48	48	48	17	17	55	38
Ireland 40	33	-	71	71	71	64	43	71	50	50	43	57	43
Italy 60	35	[46]	52	67	86	67	48	81	62	71	33	67	57
Japan 500	37	[72]	85	87	83	80	64	77	72	33	90	49	49
Korea 100	50	[32]	61	67	76	69	57	55	55	33	35	63	55
Latin America 50	50	[52]	58	79	79	58	47	79	68	37	26	47	58
Netherlands 50	62	52	97	74	90	65	61	90	90	58	42	81	71
New Zealand 50	52	50	65	69	77	69	65	58	54	35	27	58	54
Nordic 200	65	[58]	77	76	81	63	54	83	77	46	33	78	59
Portugal 20	38	-	75	88	75	88	63	100	88	88	25	63	75
Russia 50	13	-	33	0	33	33	33	33	33	0	33	33	33
South Africa 100	68	58	86	73	86	89	68	83	86	38	33	68	65
Spain 85	41	[71]	80	66	77	63	54	91	83	86	34	80	74
Switzerland 100	56	57	74	44	72	48	48	72	67	35	19	65	43
UK FTSE 100	95	90	83	89	91	83	66	98	95	73	77	88	79
UK FTSE 250	57	58	79	78	76	72	53	81	80	36	43	61	49
US S&P 500	66	64	68	70	77	70	52	77	74	41	31	65	61

⁴ The numbers in this table are based on the total respondents at 10th July 2009. They may therefore vary from numbers in the rest of the report which are based on the number of companies who responded on time (e.g. 30th June for Global 500).

⁵ In some cases, the number of responses analysed is slightly less than the number answering CDP 2009 due to takeovers, mergers and acquisitions.

⁶ Percentages in square brackets reflect a different sized sample in 2008, e.g.: in 2008 CDP wrote to 75 companies in Brazil, not 80; and in Japan CDP wrote to 150 companies in 2008, not 500. A dash (-) shows that a sample was not in CDP6 (2008).

⁷ Asia excluding Japan, India, China and Korea.

Progress on reporting standards

While CDP has set the tone on matters of disclosure over the years and, for the first time this year, is now widening its approach to encompass performance, there are other valuable and complementary initiatives underway to address the clear requirement for the creation of a global carbon measurement and reporting system.

While the financial accounting system has taken several hundred years to develop, carbon accounting is in its infancy. In order to achieve a coherent global system CDP is leading the work of the Climate Disclosure Standards Board (CDSB), working

with *Deloitte*, *Ernst & Young*, *KPMG* and *PricewaterhouseCoopers* to develop robust accounting standards to enable carbon reporting through annual financial reports. CDP and CDSB will also work with the World Economic Forum to advise the G20 group of nations on climate change accounting in 2010.

The CDP process demonstrates that corporations can lead the way in taking action that can be Measured, Reported & Verified (MRV). It also shows how international companies can reduce their emissions across the entirety of their operations on a global basis, even when subject to a range of different regulatory requirements. As more and more countries introduce climate change regulation, the CDP system

supports companies by bridging the gap between international business and national reporting requirements and helps reduce the reporting burden on companies.

The CDP Global Forum was part of the inaugural Climate Week NYC, when business leaders, heads of state and the world's major investors congregated in New York to prepare for negotiations at COP15. An agreement there will be a vital step towards success, but it is just as important to look beyond Copenhagen and to build the global systems required to combat dangerous climate change. CDP remains focused on and dedicated to this work and thanks all of the organisations that work with us to help realise this goal.

2

CDP 2009 (South Africa): Introduction and Overview

The South African Carbon Disclosure Project (CDP), which is run as a partnership between the National Business Initiative (NBI) and the CDP, was originally brought to South Africa at the initiative of Incite Sustainability. The NBI is now the lead partner with the CDP. This role includes overall management of the partnership with CDP and all stakeholders including managing the relationship with the JSE, business and government. The NBI also solicits the support of local investors and sponsors of the CDP in South Africa.

The 2009 South African CDP Report is supported by lead sponsor KPMG who also provided assurance of the CDLI scoring as part of their sponsorship. The other two co-sponsors are Element Investment Management (formerly Frater Asset Management) who have been sponsors since the initiation of the project in South Africa, and Webber Wentzel, a welcome new co-sponsor championing the CDP from a legal perspective. For the second year running, Incite Sustainability conducted the analysis and writing of the CDP 2009 report and managed the process of engaging with each of the JSE 100 companies.

The CDP 2009 Report Objectives

The CDP 2009 report has four key objectives:

- to provide institutional investors and other stakeholders with information that facilitates a better understanding of the risks and opportunities of climate change, and of the nature of the business response;
- to review and assess the action and disclosure of companies and sectors against what is seen as a best practice response to the challenges of climate change;
- to analyse key issues in relation to climate change disclosure and to comment broadly on the differences in responses on a sector-by-sector basis; and

- to use companies' responses as a way of identifying key concerns, challenges and future directions around carbon disclosure and broader corporate sustainability practice.

In meeting these objectives, the CDP 2009 (South Africa) report has been split into five main sections:

Section 1 introduces the CDP initiative and briefly outlines key trends from CDP responses globally.

Section 2 (this section) introduces the objectives of CDP 2009 (South Africa), describes the sample (the JSE 100) and analyses the 2009 response rate.

Section 3 provides an overview of recent developments in the climate change arena, reviewing recent findings on the potential physical implications of climate change globally and in South Africa, and noting significant international and national policy developments.

Section 4 presents the bulk of the analysis of the JSE 100 responses, assessing the nature of the corporate awareness of climate change and reviewing current levels of disclosure on greenhouse gas emissions and climate change response strategies.

Section 5 provides a closing commentary on the CDP report.

The analysis and information provided in this report is complemented by a comprehensive online database of global responses to the CDP questionnaires covering the past seven years. Experience has shown that these reports are used by a wide range of stakeholders from investors through to corporations, policymakers, consultants and academics.

The CDP remains the world's leading proponent of climate change and carbon disclosure, with a strong and growing history of corporate disclosure through its annual questionnaires and its database of corporate responses.

Fig. 1: Composition of JSE 100 by number of companies per sector

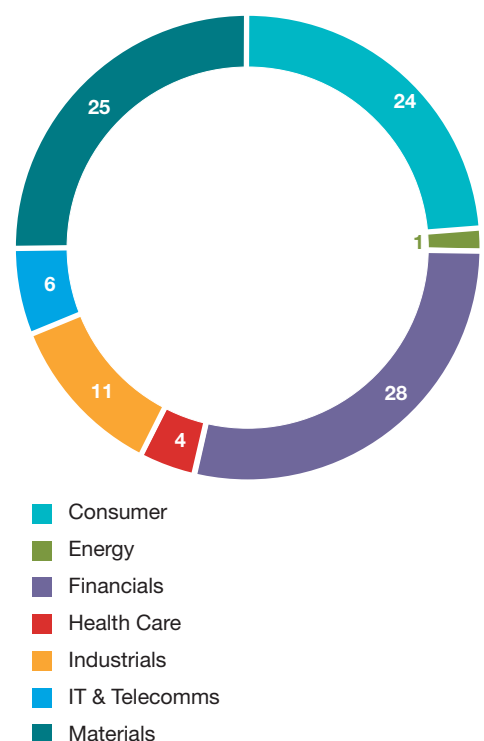


Table 3: CDP 2009: Overview of company responses

Sector (Sub-sector)	Company	2009	2008	2007	Scope 1 (tCO ₂ -e)	Scope 2 (tCO ₂ -e)	Scope 3 (count)	Verified	GHG targets
Consumer									
Beverages & Tobacco	British American Tobacco	IN	AQ	AQ					
Beverages & Tobacco	Distell Group	DP	-						
Beverages & Tobacco	SABMiller	AQ	AQ	AQ	1,513,037 *	830,147 *	X	X	X
Containers & Packaging	Nampak	AQ NP	AQ NP	-	np	np	np	np	np
Food & Drug Retailing	Pick n Pay Holdings	AQ	AQ	AQ	32,589 *	613,000 *	X		X
Food & Drug Retailing	Shoprite Holdings	DP	DP	-					
Food & Drug Retailing	The Spar Group	NR	DP	-					
Food & Drug Retailing	Woolworths Holdings	AQ	AQ	-	58,883 *	288,229 *	X	X	X
Food Products	Avi	DP	AQ NP	-					
Food Products	Illovo Sugar	DP	AQ	-					
Food Products	Pioneer Food Group	NR	-	-					
Food Products	Rainbow Chicken	AQ NP	AQ NP	-	np	np	np	np	np
Food Products	Tiger Brands	DP	NR	AQ					
Food Products	Tongaat Hulett	AQ	NR	-	271,804 *	242,504 *	X	X	
Household & Personal Products	Steinhoff International Holdings	AQ NP	AQ	AQ	np	np	np	np	np
Media & Photography	Caxton CTP Publishers and Printers	AQ	DP	-	2,170 *	19,106 *	X		
Media & Photography	Naspers	NR	NR	IN					
Multiline Retail	Massmart Holdings	AQ	AQ	-	5,916 *	250,257 *	X		X
Multiline Retail	Mr Price Group	DP	DP	-					
Speciality Retail	JD Group	NR	DP	-					
Speciality Retail	Lewis Group	DP	NR	-					
Speciality Retail	New Clicks Holdings	AQ NP	AQ	-	np	np	np	np	np
Textiles, Apparel & Luxury Goods	Foschini	AQ NP	DP (IN)	-	np	np	np	np	np
Textiles, Apparel & Luxury Goods	Truworths International	AQ NP	AQ	-	np	np	np	np	np
Energy									
Energy	Sasol	AQ	AQ	AQ	62,966,000 *	9,714,000 *	X	X	X
Financials									
Banks - Africa	Absa Group	AQ	AQ	AQ		205,656 *	X	X	
Banks - Africa	African Bank Investments	AQ NP	NR	NR	np	np	np	np	np
Banks - Africa	Nedbank Group	AQ	AQ	AQ	1,222 *	95,750 *	X	X	X
Banks - Africa	RMB Holdings - see FirstRand	AQ	AQ	-	-	-	-	-	-
Banks - Africa	Standard Bank Group	AQ	AQ	AQ	6,107 *	159,225 *	X	X	
Diversified Financials	Hosken Consolidated Investments	DP	-	-					
Diversified Financials	Investec SA (See Investec)	AQ	-	-	-	-	-	-	-
Diversified Financials	Old Mutual	AQ	AQ	AQ NP	5,822 *	519,431 *	X		X
Diversified Financials	Investec	AQ	AQ NP	AQ NP	IN	IN	X	X	
Diversified Financials	JSE	AQ	AQ	-					
Financial services	Discovery Holdings	AQ	AQ	-					
Financial services	FirstRand	AQ	AQ	AQ NP	25,063 *	371,218 *	X		
Insurance - Africa	Liberty Holdings (inc Liberty Life Group)	AQ	AQ	NR	3,715 *	40,608 *	X	X	X
Insurance - Africa	Metropolitan Holdings	AQ	AQ NP	-	3,184 *	36,392 *	X		
Insurance - Africa	Sanlam	AQ	AQ NP	AQ NP	40 *	27,700 *	X		X
Insurance - Africa	Santam	AQ	AQ	-	1 *	3,814 *	X		X
Leisure Entertainment & Hotels	Gold Reef Resorts	NR	NR	-					
Leisure Entertainment & Hotels	Sun International	NR	DP	-					
Real Estate	Apexhi Properties	NR	NR	-					
Real Estate	Emira Property Fund	AQ NP	DP	-	np	np	np	np	np
Real Estate	Fountainhead Property Trust	AQ NP	DP	-	np	np	np	np	np
Real Estate	Growthpoint Properties	AQ	NR	-	75 *	1,272 *	X		
Real Estate	Hyprop Investments	NR	-	-					
Real Estate	Pangbourne Properties	NR	DP	-					
Real Estate	Redefine Income Fund	AQ	AQ	-					
Real Estate	Resilient Property Income Fund	NR	-	-					
Real Estate	SA Corporate Real Estate Fund	NR	NR	-					
Real Estate Management	Liberty International	AQ	AQ	NR	6,366 *	37,623 *	X	X	X

Sector (Sub-sector)	Company	2009	2008	2007	Scope 1 (tCO ₂ -e)	Scope 2 (tCO ₂ -e)	Scope 3 (count)	Verified	GHG targets
Health Care									
Health Care Providers & Services	Medi-Clinic Corporation	AQ	AQ	-	11,915 *	141,356 *	X	X	
Health Care Providers & Services	Netcare	AQ	AQ	AQ	36,131 *	252,203 *	X	X	X
Pharmaceuticals	Aspen Pharmacare Holdings	AQ NP	NR	-	np	np	np	np	np
Pharmaceuticals	Adcock Ingram Holdings	NR	-						
Industrials									
Construction & Engineering	Aveng	AQ NP	DP	-					
Construction & Engineering	Murray and Roberts Holdings	AQ	AQ	-	1,112,354	257,621	X		
Construction & Engineering	Wilson Bayly Holmes-Ovcon	AQ NP	DP	-	np	np	np	np	np
Diversified Industrial	The Bidvest Group	AQ	AQ	AQ	269,076 *	277,028 *	X		
Industrial	Barloworld	AQ	AQ NP	NR	126,145	85,863		X	
Industrial	Pretoria Portland Cement Company	AQ	AQ	AQ	5,453,949 *	558,010 *			X
Industrial	Remgro	AQ NP	AQ	DP	np	np	np	np	np
Industrial Conglomerates	Reunert	AQ	AQ NP	AQ NP					
Trading Companies & Distributors	Grindrod	DP	DP	-					
Trading Companies & Distributors	Imperial Holdings	AQ	AQ	DP	795,602	182,671			
Trading Companies & Distributors	Trencor	DP	DP	-					
IT & Telecommunications									
Electronic Equipment & Instruments	Allied Electronics Corporation (Altron)	AQ	AQ	-	12,298 *	114,972 *	X		
IT Consulting & Services	Dimension Data Holdings	AQ	AQ	NR	12,409 *	55,186 *	X		
Services	Net 1 Ueps Technologies Inc	DP	-	-					
Telecommunication Services	Allied Technologies	NR	AQ	-					
Telecommunication Services	MTN Group	AQ	AQ	AQ	8,100	240,827			
Telecommunication Services	Telkom SA	AQ late	DP	DP					
Materials									
Chemicals	AECI	AQ NP	NR	-	np	np	np	np	np
Chemicals	African Oxygen (see Linde Group)	AQ	AQ	-	-	-	-	-	-
Materials	Uranium One	NR	AQ	-					
Metals & Mining	African Rainbow Minerals	NR	AQ	-					
Metals & Mining	Anglo American	AQ	AQ	AQ	9,620,000 *	10,177,000 *		X	X
Metals & Mining	Anglo Platinum	AQ	AQ	AQ	493,312 *	4,993,136 *	X	X	X
Metals & Mining	AngloGold Ashanti	AQ	AQ	AQ	1,414,817 *	3,464,083 *	X	X	X
Metals & Mining	Aquarius Platinum	AQ	AQ	AQ	57,676 *	486,348 *			
Metals & Mining	BHP Billiton	AQ	AQ	AQ	23,093,870	28,798,955	X	X	X
Metals & Mining	Exxaro Resources	AQ	AQ	NR	674,403 *	1,601,994 *	X	X	
Metals & Mining	First Uranium Corporation	DP	-	-					
Metals & Mining	Gold Fields	AQ	AQ	AQ NP	1,143,188 *	4,527,119 *	X		X
Metals & Mining	Harmony Gold Mining Company	AQ	AQ	AQ	83,584 *	4,143,503 *	X		X
Metals & Mining	Impala Platinum Holdings	AQ	AQ	AQ	405,354 *	2,699,297 *		X	X
Metals & Mining	Kumba Iron Ore	AQ	AQ	NR	202,467	362,738		X	X
Metals & Mining	Lonmin	AQ	AQ	AQ	75,850 *	1,583,253 *		X	X
Metals & Mining	Northam Platinum	AQ	AQ	-	17,364 *	739,365 *	X		
Metals & Mining	Wesizwe Platinum	DP	AQ	-					
Paper & Forest Products	Mondi Limited (see Mondi)	AQ	AQ	-	-	-	-	-	-
Paper & Forest Products	Mondi	AQ	AQ	-	4,435,000 *	1,568,000 *	X	X	X
Paper & Forest Products	Sappi	AQ	AQ	AQ	5,198,854 *	1,755,190 *		X	X
Steel	ArcelorMittal SA	AQ	AQ	NR	12,420,730 *	3,756,528 *	X		X
Steel	Assore	DP	-	-					
Steel	Highveld Steel And Vanadium	DP	DP	-					
Steel	Hulamin	AQ NP	AQ NP	-	np	np	np	np	np
TOTAL					134,389,565	84,109,037	41	24	27

AQ Answered Questionnaire **AQ NP** Answered Questionnaire but declined permission to make this public

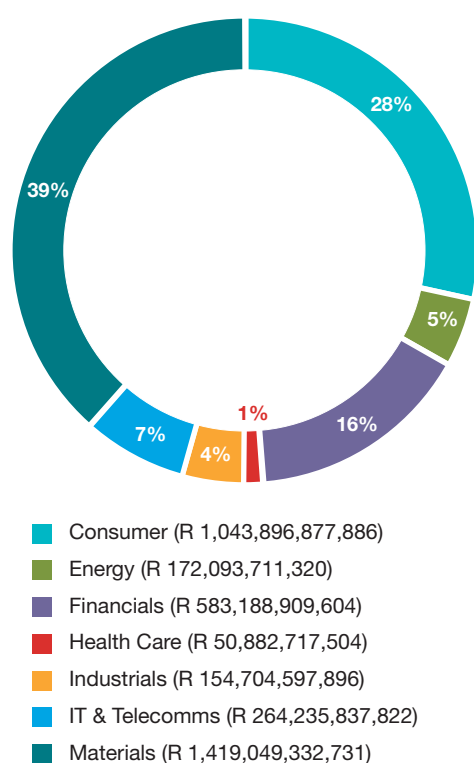
DP Declined to Participate **AQ late** Answered Questionnaire but submitted after the deadline

NR No Response **IN** Provided Information **np** Not public data

' - ' Company not included in the sample

GHG targets lists companies with existing emissions and/or energy targets. The total includes the count for not public companies but is less than the 41 (65%) in the key trend analysis as it excludes companies that are still in the process of defining targets.

* The reported quantitative emissions data must be read with the explanatory information provided in Tables 5, 6 and 7. The total for each GHG Scope includes emissions from not public companies and an effort has been made to correct for double accounting.

Fig. 2: Composition of JSE 100 by market capitalisation

CDP 2009: The JSE 100 Sample

The JSE 100 sample for CDP 2009 was identified on the basis of market capitalisation as at 30 December 2008. At the time of selection, the list included 100 companies from thirty different industry sectors, identified using the Global Industry Classification Standards. Following the incorporation of Liberty Life Group into Liberty Holdings, the final sample size of CDP 2009 (South Africa) comprises 99 companies (Table 3).

To facilitate a higher level of sectoral analysis, the companies have been clustered into the following seven top-level sectors (the associated sub-sectors are identified in parenthesis):

Consumer – Beverages & Tobacco; Containers & Packaging; Food & Drug Retailing; Food Products; Household & Personal Products; Media & Photography; Multiline Retail; Speciality Retail; Textiles, Apparel & Luxury Goods

Energy – Oil and Gas

Financial – Banks, Diversified Financials, Financial Services; Leisure, Entertainment & Hotels; Real Estate

Health Care – Health Care Providers & Services; Pharmaceuticals

Industrials – Construction & Engineering; Diversified Industrial; Industrial; Industrial Conglomerate; Trading Companies & Distributors

Information Technology & Telecommunications – Electronic

Equipment & Instruments; IT Consulting & Services; Telecommunications Services

Materials – Chemicals; Materials; Metals & Mining, Paper & Forest Products; Steel

In terms of the number of companies, the JSE 100 is dominated by the Financials (28), Materials (25), and Consumer (24) sectors (Figure 1). By market capitalisation, there is an obvious dominance by Materials (39%), followed by Consumer (28%) and Financials (16%) (Figure 2).

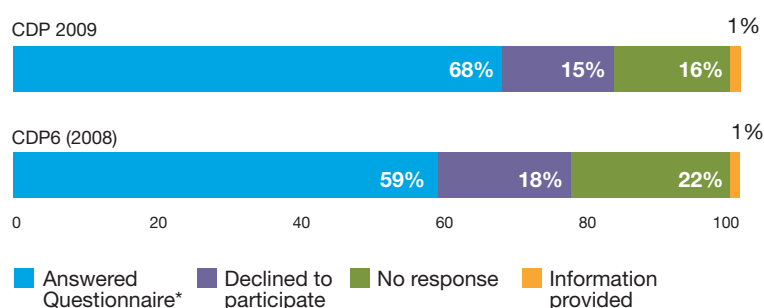
The CDP 2009 Response Rate

Encouraging Increase in the South African Response Rate

An overview of the response status of each JSE 100 company is provided in Table 3. Some of the key implications of the data presented in this table are presented below.

Of the 99 companies that were sampled, 67 answered the questionnaire, 15 declined to participate⁸, while 16 did not respond in any manner. The South African CDP 2009 thus achieved an overall response rate of 68%, an encouraging increase on last year's 59% (Figure 3), ranking South Africa as the fifth highest CDP response rate internationally (Table 2). Globally, the CDP response rates are led by the FTSE 100 (95%) and Global

⁸ Many of the 15 who declined to participate did so as they felt ill-equipped to respond in a comprehensive manner, but indicated a desire to participate next year.

Fig. 3: JSE 100 response rate CDP 2009 vs. CDP6 (2008)

* Includes 'AQ', 'AQ NP', and 'SA' which denotes 'See Another' i.e. one company that responded via their parent company not listed on the JSE (African Oxygen); and three companies that responded via a parent company listed in the JSE 100 (RMB Holdings, Investec SA, Mondi Limited).

500 (81%). South Africa compares favourably with other international samples such as US S&P 500 (66%), Australia 200 (52%) and Germany 200 (51%), and is particularly favourable in comparison to developing countries such as China 100 (10%), India 200 (18%) and Asia 100 (31%), although Brazil 80 remains the developing-country benchmark with a response rate of 76%.

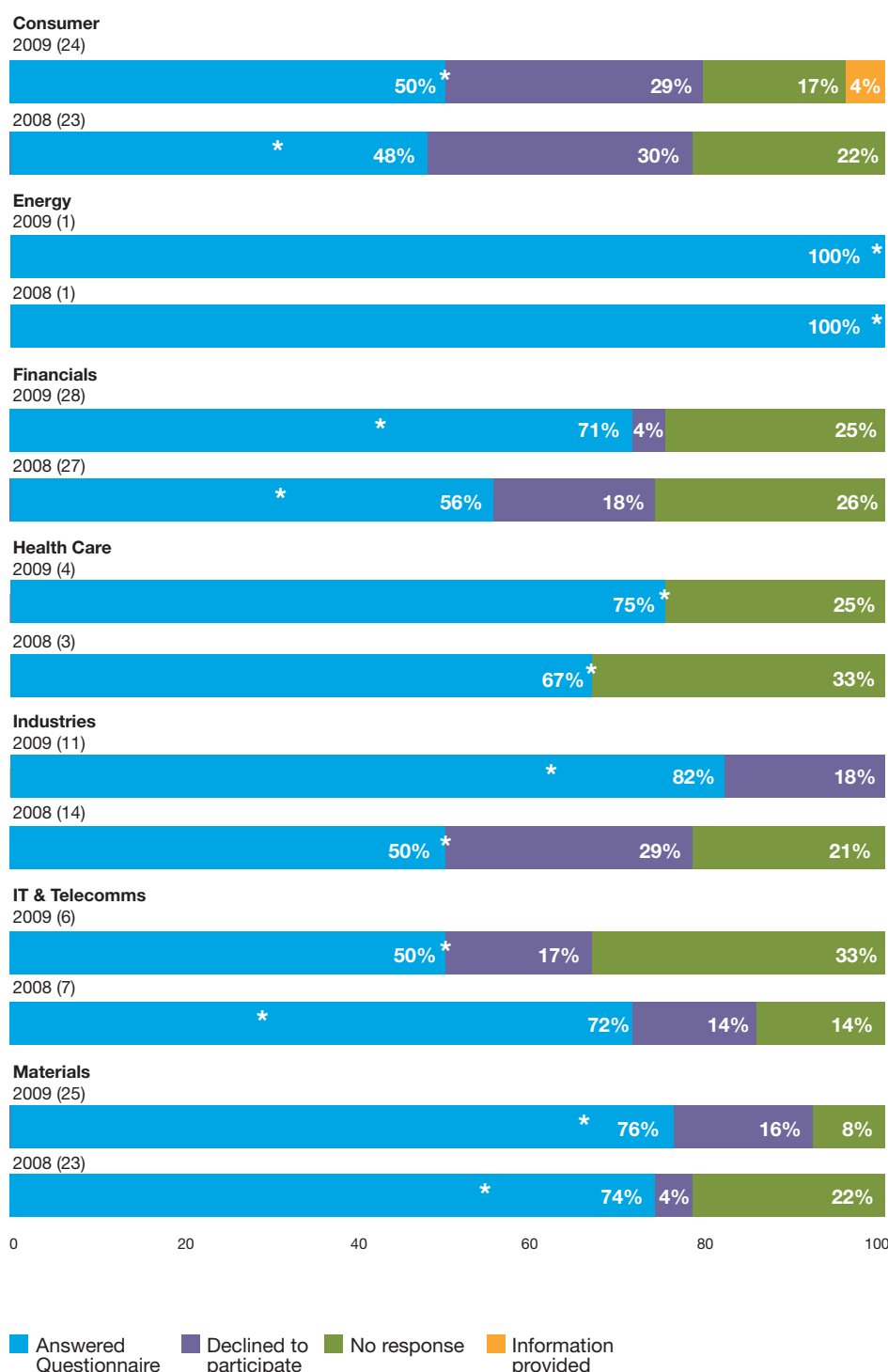
Of the 67 companies that answered the questionnaire, 15 elected to have their response 'Not Public'. They typically did so either to protect perceived proprietary information, or because their response and data gathering had been partial and thus feared that disclosure at this stage may be misleading. For the purposes of this report their data will only be used in aggregated trends, and will not be reflected by company name.

Of the 2009 sample, 89% were also approached in 2008; eleven of these submitted a response for the first time this year, which may be seen as indicative of a growing commitment amongst established companies. Five companies who participated last year opted not to participate this year. Some of these cited limited internal resources (both financial and human) resulting from the current economic climate. The most notable exclusion is *British American Tobacco* who has participated in the global CDP for five years. This year *British American Tobacco* selected to provide separate information only – as opposed to completing the questionnaire – noting that their decision was to focus resources and energy on meeting their challenging climate change targets.

There was one voluntary response from a company not included in the JSE 100 (*Group Five*). While their CDP response is available online, their data has not been used for the quantitative analysis in this report. Several other companies have communicated their desire to participate in future on a voluntary basis; this is an encouraging development and hopefully a trend that will continue to grow.

For the purposes of the quantitative analysis, although 67 companies answered the questionnaire, three

Fig. 4: JSE 100 response by sector: CDP 2009 vs. CDP6 (2008)



of these (*Mondi Limited*, *RMB Holdings*, and *Investec SA*) submitted a response via their parent company that is also listed in the JSE 100.

African Oxygen reported via its parent company, *Linde Group*, that is listed on the FTSE; as the *Linde Group* is not listed on the JSE, in this report their submission is reviewed qualitatively only. For these reasons, for the purposes of assessing response rates and trends (in percentages) amongst the 67 responding companies, a total number of 63 companies has been used.

Varying Response Rate by Sector

An overview of the sectoral response rate for 2009, and a comparison with the response rates for CDP6 (2008), is provided in Figure 4, which also includes an indication of the level of disclosure of carbon emissions within each sector.

- Not surprisingly, those sectors that are generally more carbon-intensive – such as Energy, Industrials and Materials – display the highest response rates. It is encouraging, however, to see that some of those sectors that may be less obviously exposed to climate risk nevertheless have reasonable response rates, and that there has been some positive progress on the 2008 response trends.
- A number of sub-sectors continue to have very low response rates, including most noticeably:
 - Food Products: only one out of six responded publicly, and one non-publicly;
 - Real Estate: only two out of nine companies responded publicly, and two non-publicly; and

– Leisure Entertainment & Hotels: neither of the two companies responded.

- In light of the important carbon contribution associated with infrastructure development and the building sector, it is of concern that there are not greater levels of engagement from the Construction & Engineering and Real Estate sectors. Similarly, while Leisure Entertainment & Hotels, Media & Photography and Publishing might not have high direct carbon footprints, they are nevertheless potentially significant in terms of their indirect contributions. In many respects the tourism sector is a flagship sector in South Africa, particularly with the 2010 World Cup imminent, while the media sector has significant potential for leverage. Both sectors could exert some influence by being seen to lead by example; this remains a disappointing trend.

Levels of Disclosure Improves on Most Issues

Figure 5 provides a comparison between the overall response rates of the participants in CDP 2009 and CDP6 (2008) on a series of key trend indicators (structured around the CDP questions).

There has been an increase in the reporting of GHG emissions, particularly as regards Scope 3 emissions and emissions intensity. The significant increase in reporting Scope 3 emissions is important, as it is indicative of the larger companies beginning to exert influence over the supporting companies that contribute to their indirect emissions. Measuring a company's indirect emissions is the first step towards effectively influencing their supporting companies.

Although there has been an increase in

the external verification of emissions, at 38% this is still low in comparison with their international peers (60% for the Global 500). Amongst these respondents there was evidence of varying understandings of what is meant by “external verification”; in one instance, for example, an external consultant was used to collate the data and calculate emissions and this was deemed to constitute external verification. Several companies highlight the need to focus first on improving internal data capture and systems before seeking verification. While there is clearly potential added value in effective verification processes, verification processes are not necessarily the most appropriate priority, nor essential in ensuring effective mitigation activities.

The percentage of companies that report having GHG emissions and/or energy reduction targets and plans, has increased from 40% to over 65%. While this is a commendable increase (particularly for a developing country that lacks national emission reduction targets), this figure includes companies who don't yet have targets but who report a commitment to develop such targets. As is discussed later in this report, the need for more widespread and ambitious GHG reduction targets remains an area of concern.

In terms of governance practices, while there has been an increase in the number of companies that are now including climate change issues in their annual reporting practices (79% of respondents as compared with 64%), the use of internal management incentives on climate change remains low at 30%. This raises a question regarding the extent to which climate change issues are being effectively integrated with a company's core vision and values.

Fig. 5: Response rates for key trend indicators (total): CDP 2009 vs. CDP6 (2008)**Risks and opportunities**

Identify exposure to risks



Identify opportunities



Display management of risks and opportunities ***

**Emissions accounting**

Report Scope 1 & 2 emissions *



Report Scope 3 emissions *



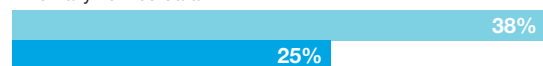
Report emissions intensity



Report energy use



Externally verified data



Engaged/considering participation in emissions trading **

**Performance**

GHG emissions and/or energy reduction plan



Emissions and/or energy reduction target(s)



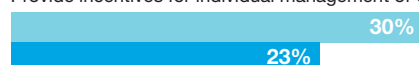
Forecast emissions for the next 5 yrs *

**Governance**

Board or executive body responsibility for CC



Provide incentives for individual management of CC issues



Publish CC issues in annual report or other filings

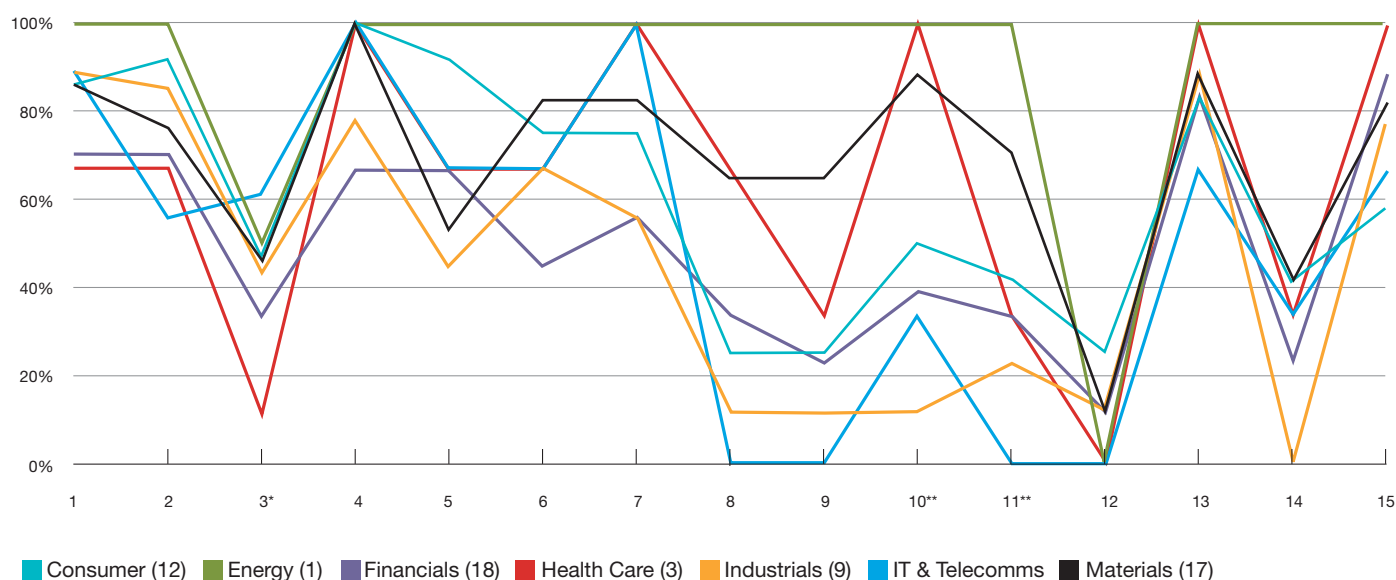


* Some companies disclose partial data.

** Indicates the number of companies participating in EU ETS and/or considering participation in other trading schemes.

*** Data not quantified in 2008.

CC denotes 'climate change'.

Fig. 6: Response rates for key trend indicators (by sector): CDP 2009**KEY TREND**

- 1: Identify risks
- 2: Identify opportunities
- 3*: Taken/planned action to manage risks/opportunities
- 4: Report Scope 1 & 2
- 5: Report Scope 3
- 6: Report emissions intensity
- 7: Report energy usage
- 8: Data externally verified
- 9: Emissions trading participation
- 10**: Have reduction plans
- 11**: Have reduction targets
- 12: Forecast emissions
- 13: Board level oversight
- 14: Incentive for individual management
- 15: Publish info in annual/voluntary report

The number of responding companies in each sector is indicated after the sector name.

* This assessed the number of companies that indicated they have taken/planned action for risk/opportunity management. A total was calculated based on weighted responses for each of the six risk and opportunity categories.

** This data differs from the total sample response rate as it excludes companies that indicate they are 'in the process' of defining a reduction plan/target.

Tracking Sectoral Differences in Response Rates on Key Trends

Figure 6 compares the response rates between the seven sectors in CDP 2009 (South Africa) on a similar set of key trend indicators.

- While there is a generally high rate of identification of risks and opportunities across sectors – with greater variance between sectors in the identification of opportunities – it is concerning that all sectors show a significantly lower response in terms of companies that have taken or are planning action to manage the identified risks. This might suggest that the risks are not regarded as material, that companies are slow to react, or possibly that companies are providing generic responses on risks and opportunities, rather than undertaking a more thorough company-specific analysis.
- The most significant variance in the sectoral response rates relates to

the number responding companies that have had external verification of data. Perhaps understandably this is high amongst the larger and more visible emitters (such as Energy and Materials), while it remains low amongst the less emitting sectors. There is also a variation in the responses of sectors regarding trading opportunities, and the existence of reduction plans and targets.

- There is a uniformly poor response rate across all sectors on the issue of forecasting emissions. This issue, which is reviewed later in the report, is of concern as it impacts on the ability to make sufficiently stringent yet realistic emissions reduction targets. It might also be seen as indicative of the extent to which climate mitigation issues are seen as being sufficiently strategic.

3

Climate Change: Understanding the Challenge

“Rajendra Pachauri, the head of the Intergovernmental Panel on Climate Change – no alarmist – has warned that ‘what we do in the next two or three years will determine our future’. And he said that two years ago.”

New York Times editorial – August 2009

2009: A Promising or Perilous Year for Climate Change?

One way or another, 2009 should prove a momentous year in terms of international climate change policy, culminating as it does in the all-important climate negotiations in Copenhagen in December. The Copenhagen meeting – the 15th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) – is tasked with developing a global climate framework to replace the Kyoto Protocol; many scientists have suggested that unless an ambitious agreement is reached at this meeting, there is the very real likelihood of uncontrollable change. In the words of the Intergovernmental Panel on Climate Change (IPCC), “the consequences could vary from the disruptive to the catastrophic”.⁹

In designing this post-Kyoto framework, negotiators will need to reach agreement on at least four essential issues: defining the emission reduction commitments for developed countries; agreeing the level of ambition of major emerging economies (such as China, India, Brazil and South Africa) in reducing their emissions; identifying the technological and financial assistance required by developing countries for climate mitigation and adaptation; and clarifying the process for managing international assistance for these countries.

Reaching agreement in Copenhagen on these issues will be hugely challenging, particularly against the backdrop of efforts to restructure the failing global economy and in the context of increasingly stark warnings from the scientific community that past projections on climate impacts have been too conservative.

A gathering in March 2009, of more than 2,500 climate researchers from 80 countries, concluded that carbon emissions have risen faster

than predicted, with numerous experts presenting studies that suggest that climate impacts could be more significant and more rapid than anticipated. Speaking at the conference, Sir Nicholas Stern echoed these sentiments, arguing that the 2006 Stern review on the economics of climate change had “underestimated the risks and the damage from inaction”. Stern now suggests that policy-makers should be preparing for possible temperature increases this century of between 3-6 degrees, a view shared by Bob Watson, former head of the IPCC, who has warned that governments should be preparing for a 4° Celsius rise in global temperatures. According to the 2006 Stern report, such a temperature increase would lead, amongst other things, to a 30-50% reduction in water availability in southern Africa, a 15-35% reduction in agricultural yields throughout the continent, and potentially place up to 300 million more people at risk of coastal flooding each year.

The Outlook for Agreement in Copenhagen

The prognosis in the run-up to Copenhagen is mixed. In some respects, 2009 has seen some valuable policy developments:¹⁰

- following the inauguration of President Obama in January, there has been a significant shift in the stance of the US administration towards climate change, with the Waxman-Markey Bill – which would commit the US to reduce GHG emission by 17% below 2005 levels by 2020 – passing through the House of Representatives (albeit narrowly);
- in July 2009, the UK launched its Low Carbon Transition Plan describing how it intends to meet its target of a 34% cut in annual GHG emissions by 2020 relative to 1990, and setting out how the UK will achieve its first three binding five-year targets, mandated under

⁹ http://unfccc.int/essential_background/feeling_the_heat/items/2905.php

¹⁰ See CDP 2009 Global 500 Report.

“One would think that by now most people would have figured out that climate change represents a grave threat to the planet. The problem, when it comes to motivating politicians, is that the dangers from global warming – drought, famine, rising seas – appear to be decades off. But the only way to prevent them is with sacrifices in the here and now: with smaller cars, bigger investments in new energy sources, and higher electricity bills that will inevitably result once we put a price on carbon.”

New York Times editorial – August 2009

last year's world-leading Climate Change Act;

- the G8 summit meeting in July included a commitment to prevent global temperatures rising beyond 2° Celsius on pre-industrial levels, and to cut GHG emissions by between 50 and 80% by 2050; and
- China has made positive progress towards meeting ambitious renewable energy and energy efficiency targets, while Brazil, Japan and Australia (for example) have all announced new climate legislation.

But for many commentators, these identified policy developments are either problematic or an insufficient indicator of the possible outcomes of Copenhagen:

- the proposed US legislation, for example, has been criticised for its watered down targets and cap-and-trade system (and it has yet to get through Senate);
- the G8 commitments failed to impress observers with the lack of medium-term targets;
- implementation of the Australian emissions trading system has been delayed by a year; and
- even where the policy commitments might be seen as laudable improvements on previous policy efforts, many suggest that this is too little, too late.

The signals from the preparatory UNFCCC meetings serve only to confirm the depth of the challenge in concluding meaningful commitments in Copenhagen. Whatever the outcome, the implications for the South African economy – and in turn for the local business community – are likely to be profound: either we reach agreement on the timing and nature of ambitious binding policy commitments of some form, with resulting policy implications for business; or we fail to make such commitments and further expose the already vulnerable regional economies to the significant anticipated costs (economic, social and environmental) associated with adapting to climate change.

The Local Policy Context: Aligning with International Developments

South Africa has long played an active role in the international climate negotiations, and has ratified both the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. As a developing country, South Africa is currently exempt from adopting mandatory emissions reduction targets, although it is anticipated that this may change as part of the “post-Kyoto” climate framework that is being developed.

The South African government has recognised that if the serious regional impacts of climate change are to be avoided, then large developing-country emitters – such as China, India, Brazil and South Africa – will need to join developed countries in adopting emissions reduction targets, and that relying on its developing country status to press for a total exemption from mitigation effort is no longer a feasible option.¹¹

To assist the government to develop policy and to prepare clear positions for post-2012 negotiations, the South African Cabinet commissioned the Long Term Mitigation Scenario (LTMS) process, the first phase of which was completed in October 2007. The outcomes of the study were presented to leaders from government, business and civil society in late 2007, with a final version of the findings and recommendations of the LTMS study presented to Cabinet in July 2008.

Based on their consideration of this study, the government released a statement on 28 July 2008 outlining its vision, strategic direction and policy framework for climate change, in which it was broadly supportive of the “Required by Science Scenario” presented in the LTMS. This vision includes an explicit commitment to introducing a legislative, regulatory and fiscal package, including ambitious and mandatory energy efficiency targets, an escalating CO₂ tax, and mandatory national targets for the reduction of transport emissions, as well as the aggressive promotion of hybrids and electric vehicles.

¹¹ DEAT Long Term Mitigation Scenarios: Strategic Options for South Africa (October 2007).

Towards a Climate Policy Response in South Africa

In March 2009, a Climate Change Summit was held in Midrand to initiate a consultative process aimed at developing a South African Climate Change Response Policy. Attended by nearly 900 representatives from government, business, the scientific and academic communities and civil society, the summit identified a number of high priority interventions that should continue during the policy development process, including: introducing mandatory fuel and energy efficiency standards, scaling up renewable energy, developing a

green jobs programme to build climate resilience, ensuring promotion of green technologies in the Industrial Policy Action Plan, and completing the Treasury report on options for implementing a price on carbon.¹²

The Summit further agreed that all key affected national departments would initiate and facilitate the development of sector-specific components of the national response strategy, under the coordination of the Department of Water and Environmental Affairs. It is anticipated that a White Paper on the National Climate Change Response will be completed by December 2010, with a Green Paper published for

comment in April 2010. The process will culminate in the introduction of legislative, regulatory and fiscal packages to give effect to the strategic policy by 2012. Underpinning the proposed policy development process is the desire to make a timely transition to a climate resilient and low carbon economy, recognising that early gains can be achieved by massively up-scaling efforts in respect of energy efficiency and renewable energies. A key challenge facing

¹² The main outcomes of the Summit are the National Climate Change Response Policy: Discussion Document, and the Conference Statement Towards an Effective South African Climate Change Response Policy (www.ccs Summit2009.co.za).

Box 1: The Need to Prepare for Adaptation in South Africa

Southern Africa: Particularly Vulnerable to Climate Impacts

Recent studies suggest that climate change could have serious impacts on many sectors of the South African economy, with the areas of highest vulnerability being the health sector, maize production, biodiversity and water resources.¹³

One of the potentially most significant concerns relates to the changes in the availability and quality of water resources in South Africa, with possibly profound implications for the national economy; water quality and availability is already seen to be a limiting factor to economic growth and development, and it is anticipated that this could worsen.

Other research suggests that maize production could drop substantially with similarly significant impacts on the South African economy. Should there be no adaptation to climate change, studies indicate a potential drop in net agricultural revenues in South Africa of as much as 90% by 2100.

The incidence of malaria, already the 11th highest cause of deaths globally – 90% of which occur in sub-Saharan Africa – is likely to increase due to the expansion of conditions favourable to the virus.

Significant changes to local ecosystems are anticipated, with the fynbos and succulent Karoo biomes

predicted to experience losses of 50–60% by 2050.

In the marine sector the increase of algae and dinoflagellates during warming could increase the number of people affected by toxins from consumption of marine food with resultant effects on the fishing industry. The recent decline in fish stocks off the Namibian coast has been attributed to changes in current attributable to climate change.

Recognising the Need for Adaptation Measures

While the nature and extent to which GHG emissions are reduced now will determine the severity of these potential climate changes, even if all emission-generating activity were to halt, there is still a sufficient stock of emitted carbon that is likely to cause unavoidable climate shifts. Recognising the need for adaptation measures is thus becoming a more prominent feature alongside mitigation issues in the international climate discussions. The aim of adaptation strategies is to reduce vulnerability caused by current climate change conditions and to provide protection against projected future changes, together with developing any new opportunities that may arise from climate change's beneficial effects. Whilst large transaction costs are associated with adaptation, these should be measured against the risks of maintaining business-as-usual.

Although vulnerability to the physical effects of climate change varies across business sectors, all sectors may be exposed to property damage, as well as to disruption to services and businesses activities associated with possible damage to infrastructure and utilities. Adaptation solutions for the sectors in South Africa likely to be most adversely affected by climate change include:

- Agriculture – requiring changes in management practices, such as time of planting, the use of more drought-resistant crops or shifting from crops to livestock, and introducing shade-netting or drip-irrigation so as to reduce reliance on water;
- Health – with extended treatment facilities and preventative measures (such as malaria nets) being required;
- Ecosystems protection – moving highly threatened species to maintain micro-habitats, seed-banks, and the protecting indicator species; and
- Water services – requiring more strategic resource management, altered water infrastructure design, and the promotion of water-efficient technologies and practice.

¹³ A useful overview of possible climate change impacts in South Africa is provided in Midgley et al Impacts, Vulnerability and Adaptation in Key South African Sectors: An Input into the LTMS process (October 2007).

“South Africans are especially vulnerable to many of the future climate impacts. These impacts will most likely be catastrophic if climate change is not checked and drastically reduced.”

Long Term Mitigation Scenario (LTMS) – South Africa

the country as it seeks to effect this transition will be to agree on (and work towards) the optimal energy mix for the country.

The Changing Climate of Business: The Need for Business Leadership in SA

Whichever way one looks at it, climate will be changing the South African business environment. Whether or not one subscribes to the particular models of climate scientists, one cannot ignore the fact that the policy environment is changing. Globally and nationally, we are moving into a future constrained by carbon. The business that best understands and prepares for this future is the business that, comparatively, will prosper.

The recent suggestions by scientists that climate change may be more serious and more imminent than previously thought, should not be seen as a counsel of despair, but rather as a call for action; a rapid response now in spurring a transition to a post-carbon economy will be more cost-effective than seeking to adapt to a warmer world. Various studies are showing that it is both feasible (if profoundly challenging) and economically rational to implement far-reaching climate mitigation measures.

A recent report by McKinsey & Company¹⁴ suggests, for example, that it is possible by 2030 for global greenhouse gas emissions to be reduced by 35% on 1990 levels (or by 70% against business as usual). They suggest this “would be sufficient to have a good chance of holding global warming below a 2° Celsius threshold.” The report stresses, however, that capturing enough of this potential will be “highly challenging”, requiring all regions and all sectors capturing close to the full potential for emissions abatement available to them.

Whilst recognising the principle of common but differentiated responsibilities, which places the greater burden on developed countries to reduce emissions, it is nevertheless clear that if we are to contain emissions within required levels then energy intensive sectors in developing countries will need to be included as soon as possible within global climate mitigation activities:

- these sectors currently account for between eight to 15% of global CO₂ emissions, and it is estimated that 97% of the growth in energy-related emissions between now and 2030 will come from developing countries;
- with high levels of new infrastructure development forecast in these countries, measures are needed to avoid long-term carbon lock-in; and
- mitigation options in developing countries include some of the lowest cost and most effective mitigation options available.

While some might question whether the costs of mitigation are costs that a developing country such as South Africa can afford to carry, the more appropriate question is whether South Africa – as one of the more vulnerable regions – can afford not to be playing a constructive role in developing a more resource-efficient, low carbon economy. Even without climate change, the global economy will be hard-pressed to meet the demands of an estimated nine billion people by 2050, most of whom aspire to the resource-intensive lifestyles of the North. Designing a resource-efficient economy is a no-lose objective, and is a vision that is increasingly informing those tasked with developing national and global economic recovery plans.

Responding meaningfully to the climate challenge will require leadership, courage and action from political and business decision-makers across national and commercial boundaries. If South African business is serious about making its contribution to containing warming below a 2° Celsius rise on pre-industrial levels, then they will need to be actively engaged in identifying and capturing all the available emissions abatement opportunities. This will require not just technical innovation, but also a shift in values and in consumption priorities.

An important objective of this CDP survey is to assess the extent to which South Africa's largest companies are demonstrating the necessary leadership in response to this challenge.

14 Pathways to a Low-Carbon Economy: Version 2 of the Global Greenhouse Gas Abatement Cost Curve

4

Climate Change: Is SA Business up to the Challenge?

Developing an Effective Corporate Response to Climate Change

An underlying objective of the CDP is to review and assess the action and disclosure of companies and sectors against what is seen as a best practice response to the challenges of climate change. Some of the key elements of an effective climate change strategy are described in Box 2.

Based on this understanding of a climate change strategy, the assessment of the responses of South

Africa's top listed companies to the CDP seeks to review the actions and approaches of companies towards:

- identifying and responding to the risks and opportunities of climate change (pages 30-35);
- measuring, reporting and verifying their direct and indirect GHG emissions and energy usage (pages 35-49);
- developing and implementing GHG emission reduction targets (pages 49-54);

- implementing effective emissions reduction and adaptation measures (pages 54-59); and
- integrating climate considerations within their internal governance practices (pages 59-60).

The outcomes of this assessment are reflected in the CDP's Carbon Disclosure Leadership Index, as well as the review of the pilot exercise aimed at assessing a company's climate change performance (pages 60-62).

Box 2: Elements of an effective climate change strategy

A typical climate change response strategy should include the following key elements.

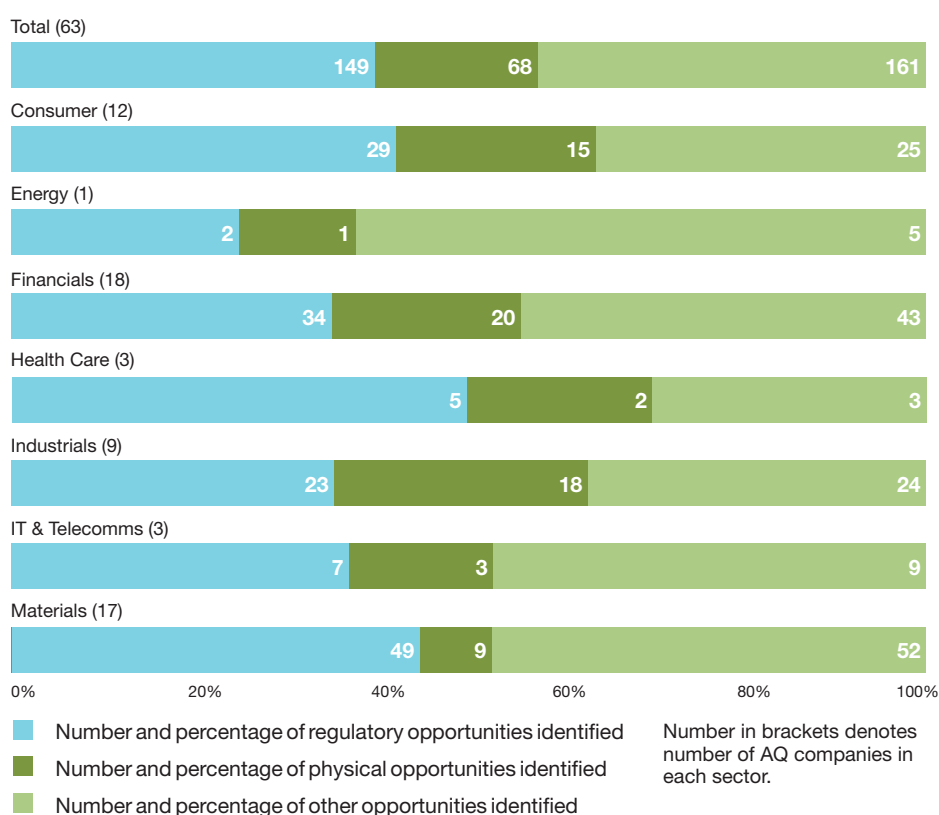
- Executive understanding and commitment to climate change, based on an informed assessment of the company-specific risks and opportunities and a sound appreciation of the business case drivers, with the result that climate considerations are appropriately integrated within the company's vision and strategy.
- A comprehensive greenhouse gas emissions profile (or "carbon footprint") – this involves:
 - identifying relevant and significant sources of GHG emissions;
 - defining a common set of metrics for monitoring / calculating and reporting emissions, using a consistent and agreed set of emissions factors;
 - quantifying all Scope 1 and 2

emissions, as well as agreed priority Scope 3 emissions (Table 4); and

- agreeing a process (if any) for external or internal verification of emissions data.
- Setting and updating GHG reduction targets – this involves:
 - evaluating available action options informed by a risks and opportunities assessment throughout the company's value chain, by the outcomes of the GHG emissions profile and by an emissions forecast;
 - defining the GHG reduction targets, with an agreed baseline, reference scenario and target date; and
 - integrating these targets within internal key performance indicators and decision-making processes.
- Identifying and implementing appropriate emissions reduction and adaptation measures – this involves:
 - assessing and implementing internal opportunities relating, for example, to energy efficiency, renewable energy, transport and logistics, and

internal behavioural change;

- engaging suppliers and customers to identify and implement opportunities through the value chain;
- identifying opportunities associated with emissions trading and CDM projects; and
- implementation measures associated with adaptation.
- Integrating climate change consideration in internal governance practices – this involves:
 - ensuring appropriate board oversight on climate change issues;
 - assigning management responsibilities and integrating climate change performance into incentives;
 - providing a regular account of the company's climate strategy and performance;
 - identifying and realising opportunities for partnerships with relevant stakeholders; and
 - engaging positively in policy development processes.

Fig. 7: Sectoral response trends to climate change risks**Fig. 8: Sectoral response trends to climate change opportunities**

The Corporate Assessment of Risks and Opportunities

The brief review of the policy and science of climate change (Section 3) suggests that the anticipated carbon-constrained future will have profound implications for business at all levels. The analysis of the South African corporate responses to CDP 2009 suggests, however, that while some companies have an appreciation of the extent of the challenge – and of the possible associated opportunities – this appreciation is not universal. While several companies submitted comprehensive responses demonstrating an informed understanding of the nature and implications of climate change at a company-specific level, many companies continue to submit rather generic responses. Few companies show evidence of being rigorous in quantifying the potential financial implications of climate change, and questions remain regarding the extent to which companies are responding at a sufficiently strategic level to the risks and opportunities that they identify.

An overview of the sectoral response trends to climate risks and opportunities is provided in Figure 7 (risks) and Figure 8 (opportunities). The overview highlights the predominance of concerns associated with the physical and regulatory risks of climate change, with all sectors identifying more risks than opportunities.

The predominant business risks and opportunities that were identified – some of which are of greater relevance to specific sectors – include:

- potentially significant costs associated with changing regulatory measures, including in particular a possible tax on carbon, as well as more stringent regulations around energy use and efficiency;
- shifting (and uncertain) distributions in rainfall, with the increased incidence and duration of droughts in some areas and floods in others;
- increased frequency in extreme weather events, resulting in damage to infrastructure and disruptions to supply chains;
- changes in consumer attitude and demand, with positive implications

“Climate change regulation may impact the following Group businesses directly or indirectly: Bidtravel and Biserv’s aviation-services businesses due to a possible increase in aviation fuel or flight taxation; Bidfreight with its dependence on international ocean shipping; Bidauto as motor retail sales mix and volume changes due to possible future regulation penalising high emissions vehicles; and Bidpaper Plus as paper costs increase due to pressures on the paper and pulp industry to reduce their carbon-intensity.”

The Bidvest Group

“It seems only to be a matter of time before a cap, in one form or another, on emissions will be introduced. This could fundamentally affect the energy intensive core business of Anglo Platinum.”

Anglo Platinum

“Exxaro is exposed to considerable regulatory uncertainties in its developing renewable energy business; these include uncertainties in the Renewable Energy Feed-in Tariff (REFIT) purchase agreement and access to the national grid.”

Exxaro Resources

“A risk to paper and pulp producers is the number of pulp and paper mills beginning to emerge in the developing world due to differential costs of operating in regulated versus unregulated countries. Inappropriate policy instruments may increase input costs and distort the market for raw materials. Such inconsistent climate change regulations may result in unfair global trade and threaten company competitiveness.”

Mondi

“In addition to compliance costs, we may be exposed to increased litigation and unforeseen environmental remediation expenses, despite our best efforts to work with governments, community groups and scientists to keep pace with regulations, law and public expectation.”

BHP Billiton

for certain products and services – such as renewable energy technologies, platinum for catalytic converters, and energy efficiency advisory services – as well as heightened potential for reputational risk and reward; and

- increased opportunities associated with carbon financing and emissions trading mechanisms.

A review of the principal risks and opportunities identified by the respondents is presented below, using the CDP’s distinction between regulatory, physical and “other” risks and opportunities.

Identifying the Business Risks of Climate Change

Regulatory Risks

- The majority of respondent companies note that while there are currently no obligatory emissions reduction targets, or other regulatory or financial instruments governing climate change in South Africa, this is likely to change in the near future. In identifying this likely policy change, several companies highlight the imminent Copenhagen meeting (which will be agreeing the post-Kyoto climate framework), as well as the recent statements by the South African cabinet following the Long Term Mitigation Scenario (LTMS).
- There is much uncertainty, however, as to when new policy instruments may be implemented, and what form these may take. As *Anglo Platinum* puts it: “The nature of any future regulations is uncertain at this time. For example, will permits be required? What will the emission reduction targets be? What will be the nature of any penalties?”
- In terms of the potential financial implications associated with regulatory risks, companies highlighted the following issues (Note: companies cited in brackets are quoted in the sidebar; they are not the only companies to raise these issues. In those instances where a quoted response is from a company that chose not to go public, the company’s sector is identified):

- higher energy and transportation costs, particularly if a carbon tax is introduced (e.g. *The Bidvest Group*);
- significant potential costs associated with meeting regulated GHG emissions caps (e.g. *Anglo Platinum*);
- constrained ability to make long-term investments due to regulatory uncertainty (e.g. *Exxaro Resources*);
- potential for international climate policy to distort certain markets (e.g. *Mondi*); and
- increased chance of litigation and/or penalties for non-compliance (e.g. *BHP Billiton*).

- The responses suggest a higher level of awareness of national and international policy developments on climate change than in previous years, reflecting both the increased international profile in the run up to the Copenhagen negotiations, as well as the impact of local policy developments such as the Power Conservation Programme. Notwithstanding this increased awareness, the risks identified by companies were typically presented in a very generalised manner with limited provision for company-specific impacts. The possible actions taken or planned by companies similarly tend to be of a very general nature.

Physical Risks

- The predominant physical impact cited by respondents relates to the reduced availability of water; this is seen to have potentially profound implications not only for sectors with comparatively water-intensive processes (e.g. *Anglo Platinum*), but also for those more broadly involved throughout the agricultural value chain (e.g. *Pick n Pay Holdings*).
- Most companies also highlight the risk of increased frequency in extreme weather events, with resulting damage to infrastructure (e.g. *BHP Billiton*), disruptions to company supply chains and logistics activities, and increases in insurance premiums.

“The impact of climate change on Anglo Platinum’s water supply catchment areas is likely to have a negative effect and may result in the need to build more or bigger dams, which will be costly.”

Anglo Platinum

“Longer-term consequences are expected to include changes in land-use patterns owing to changes in climate suitability for different agricultural activities. These will necessitate changes and consequent capital investment in distribution networks and infrastructure.”

Pick n Pay Holdings

“Increasing tropical cyclones and other extreme weather events potentially pose the greatest risk, especially in Asia, Australia and Latin America. These present physical risks to our offshore petroleum operations, including impacts on personnel as well as loss of business continuity, production interruption and damaged or lost facilities.”

BHP Billiton

“Increased geographical distribution of vector born diseases, and specifically malaria, could undermine staff health in trading operations located in vulnerable South African provinces such as Kwa-Zulu Natal, Mpumalanga.”

Massmart Holdings

“As part of our business offers life assurance, we are mindful of the impacts on health of our clients due to climate change. Shifting disease vectors will have an impact on mortality rates with knock on effects for actuarial tables of which the life assurance business remains sensitive to changes in trend lines.”

Old Mutual

“Mountain pine beetle infestation in Canada is an example of one of the risks that could affect our business. This impacts some of our raw materials either indirectly (affecting our softwood pulp suppliers) or directly should this problem affect our timber supplies. There is no easy remedy to the situation, as scientists believe the infestation could spread to jack pine in the prairies and eastern Canada if the present rate of climate change continues.”

Sappi

“Climate change, left unmitigated and without adaptation measures, could result in political and socio-economic risks. This may be true throughout the world, but countries already suffering from poverty and high unemployment levels, civil unrest, underdeveloped infrastructure, poor governance and a scarcity of natural resources are particularly vulnerable – and as a result, potentially our operations and projects in those countries.”

Anglo American

well as involuntary changes, resulting for example from reduced disposable income following anticipated increases in energy and water prices.

- The anticipated changes in consumer behaviour are seen to have an impact across a number of different sectors. Some companies in Real Estate, for example, anticipate an increased demand for “greener buildings” (*Financials Co.*), while

“An increased demand by tenants for ‘green’ buildings will result in older, less efficient buildings not being able to command premium rentals, which will necessitate capital expenditure.”

Financials Co.

“Higher temperatures could lead to a harsher working environment, which might make mechanisation more attractive. If mechanisation becomes necessary, the resulting unemployment would have adverse effects on the surrounding communities. This could lead to public relations problems for Anglo Platinum. Associated instability could increase the broader political risks of Anglo Platinum’s operations.”

Anglo Platinum

“Nedbank believes there is a clear reputational and brand equity risk associated with not addressing climate change issues proactively and that this will translate into reduced shareholder value.”

Nedbank Group

“Unseasonal climatic conditions could impact on ‘typical’ trading patterns and undermine demand for certain types of seasonal merchandise or create unanticipated demand for different seasonal merchandise. Increased crop failure and damage (drought/extreme weather events) could erode disposable income of consumers in the agri-based societies in which Massmart has a presence impacting negatively on consumer demand.”

Massmart Holdings

- Another frequently cited concern is the increase in the incidence of vector-borne diseases, with resulting possible implications for employee productivity (e.g. *Gold Fields; Massmart Holdings*) and the life assurance industry (e.g. *Old Mutual*).
- Shifts in temperature are also seen to be having visible impacts on ecosystems, with particular implications for natural resource sectors such as agriculture, fisheries, and pulp and paper (e.g. *Sappi*).
- A few companies express concern that the greater vulnerability of certain regions to the impacts

of climate change – particularly those in Southern Africa – is likely to contribute to conflict situations with resulting social disruption (e.g. *Anglo American; Northern Platinum*).

General Risks

- Amongst the general risks cited by companies, a predominant feature is the suggested changing nature of consumer and supplier demand, with implications for companies’ product offerings and broader reputation. This includes both voluntary shifts in consumption patterns – with growing consumer awareness on climate change prompting a shift away from more carbon-intensive products – as

certain companies in the retail sector identify possible impacts associated both with voluntary consumer decisions – reflected, for example, in greater demand for locally-procured seasonal produce or more energy-efficient products – as well as involuntary decisions associated with declining disposable income (e.g. *Massmart Holdings*).

- Several companies suggest that while the level of public awareness in South Africa is relatively low, this is changing. The risk to reputation through inaction on climate change was identified as a key emerging issue for many JSE companies across different sectors (e.g. *Nedbank Group*), who anticipate greater levels of stakeholder activism, as well as potential reputational impacts on the nature of the company's relationship with government and communities (e.g. *Anglo Platinum*), and its ability to attract and retain quality employees.

Identifying the Business Opportunities of Climate Change

There appears to be a good appreciation by companies across sectors of the potential business opportunities associated with climate change. These include opportunities arising from changing regulatory and policy conditions, new market prospects in providing adaptation services, as well as increased demand for less carbon-intensive products.

Regulatory Opportunities

Many companies suggest that the anticipated post-Kyoto policy and regulatory framework will present a number of new business opportunities.

- Several of the larger companies in the Materials sector (e.g. *Exxaro Resources*; *Kumba Iron Ore*) highlight the enhanced potential for investing in renewable energy projects following the introduction in South Africa of renewable energy feed-in tariffs. At a more general level, *Sasol* suggests that the policy transition to a carbon-constrained future will increase the market viability of alternative low carbon technologies, such as solar, wind, biofuels and biomass;

“Exxaro Resources is building a clean energy business on regulatory opportunities arising from reactions to climate change. These include: cogeneration projects based on waste energy recovery from industrial operations, wind energy projects based on the recently announced renewable energy feed-in tariff (REFIT), and concentrated solar energy projects based on the REFIT.”

Exxaro Resources

“The significant investments being made in research and development in alternative low carbon technologies bear testimony to the view that the company expects to be able to exploit opportunities in a carbon constrained world. These technologies will include renewable energy options such as solar, wind, biofuels and biomass. Biomass will include the possibility to utilise algae to sequester CO₂.”

Sasol

“With new building standards and regulations regarding energy efficiency, Murray & Roberts Construction and Concor have the opportunity to turn this into a new line of business – by advising clients proactively.”

Murray and Roberts Holdings

“Dimension Data Holdings’s carbon-reducing ICT infrastructure offerings include solutions such as Device Consolidation and Virtualisation, which can help our clients reduce their energy consumption, thus complying with such regulations and legislation.”

Dimension Data Holdings

recognising this potential the company is investing in research and development into new alternative energy sources.

- The introduction of process and product standards is forecast to stimulate a number of new market opportunities. Some of the Mining companies (e.g. *Anglo Platinum*; *Northam Platinum*) suggest that stricter vehicle emissions standards will have

“PGMs are used in important technologies that bring about reductions in environmental gases. Platinum is used in the manufacture of fuel cells that hold vast potential as an alternative energy source in the transport sector. Over the next few decades this new age technology could replace today’s conventional combustion engines and stationary power systems.”

Northam Platinum

“Some of the opportunities include financing carbon credit projects and trading in carbon credits as well as actively working to stimulate and enable alternative energy projects. Standard Bank also funds projects using carbon credits or renewable energy instruments as collateral for the finance, and has a dedicated carbon-trading desk in London. There has been an increase in demand to finance the development of renewable energy projects. However, ongoing opportunities for investment are considerably constrained by the lack of a post-2012 regime.”

Standard Bank Group

“We have developed a weather derivatives called “Portfolio Insurance” for the mid-corporate agricultural sector, as part of our commercial supply chain lending solutions. This is a new product and has been received with much interest in the target market.”

FirstRand

“Water security problems in Australia will mean that water storage facilities like dams will need to be constructed. This provides an opportunity as we have experience in the construction of dams.”

Industrials Co.

“As a leading logistics service provider to the construction industry, opportunities could arise from the recovery and reconstruction efforts following damage to infrastructure caused by the effects of climate change.”

Consumer Co.

“Higher ambient temperatures lead to increased consumer demand for beverages. Our beverage canning, PET and glass bottling, closures and label divisions would benefit from any resulting increase in beverage demand.”

Packaging Co.

“Gold Fields has an opportunity to mine uranium and become a supplier to new nuclear plants as mentioned in the LTMS. Gold Fields has in excess of 50 million pounds of uranium contained in historical tailings dams across Driefontein, Kloof and South Deep mines in South Africa.”

Gold Fields

“It is envisaged that the adverse effect of climate change on the health of individuals could, in the long term, result in an increased number of people seeking treatment for diseases and ailments.”

Medi-Clinic Corporation

“Opportunities can arise as a result of climate change. This is notable in the case of Sasol’s activity in agricultural markets (mainly fertiliser production) where agricultural opportunities are expected to both improve and deteriorate depending on the location.”

Sasol

positive benefits for suppliers of Platinum Group Metals used in the production of catalytic converters or fuels cells. *Murray and Roberts Holdings* suggest that new building regulations on energy efficiency will present new advisory services opportunities, while *Dimension Data Holdings* similarly sees increased business for their “carbon-reducing ICT infrastructure offerings” as a direct result of new energy legislation.

- Many of the companies in the Financial sector identify new business activities associated with emissions trading and carbon financing initiatives (e.g. *Standard Bank Group; FirstRand*).

Physical Opportunities

Although for most companies climate adaptation presents significant potential cost, for some companies the physical impacts of climate change present potential business opportunities.

- Several of the construction and related companies see market opportunities arising from the construction of climate-related infrastructure projects such as dams (e.g. *Industrials Co.*), or with the provision of infrastructure repair services damaged by increased storm activity (e.g. *Consumer Co.*, *Barloworld*).
- Some companies have suggested increased demand for certain products as a direct result of increasing temperature; a packaging company, for example, anticipates that higher ambient temperatures will lead to increased consumer demand for beverages, and thus in turn for their beverage canning, PET and glass bottling products. *Gold Fields* anticipates that the transition to a low carbon economy will prompt greater investment in nuclear energy with resulting positive benefits for their uranium interests.
- Some companies suggest that in certain areas changes in rainfall patterns could stimulate increased demand for certain agricultural products such as fertiliser (*Sasol*).
- On a more sobering note, *Medi-Clinic Corporation* envisages that the adverse effect of climate change on the health of individuals could, in the long term, result in an increased

“Growthpoint has the opportunity to enhance its reputation by becoming a climate leader in South Africa, thereby increasing customer (tenant/occupier) confidence and loyalty. The company could also enhance its reputation amongst other stakeholders such as the financial sector (investors), governments, employees and the media.”

Growthpoint Properties

“There are opportunities in the development and production of green building materials as the costs of traditional building materials and the demand for green building materials continue to rise.”

Industrials Co.

“Gold is seen as a safe investment; being used to hedge against turmoil. Sales of gold could increase if climate change were to create economic, political or social unrest.”

Gold Fields

“We see opportunities in helping customers to lower their own impact. Many of our customers want to do their bit to tackling climate change but information and price are obstacles.”

Woolworths Holdings

number of people seeking treatment for diseases.

General Opportunities

- Several companies suggest that demonstrating leadership on climate change will provide new market opportunities, as well as the potential for enhanced brand equity amongst a range of stakeholders (e.g. *Growthpoint Properties*).
- Some of the suggested market opportunities (in addition to those identified earlier) include increased demand for green building materials (e.g. *Industrials Co.*), greater investment in gold as a hedge against turmoil (e.g. *Gold Fields*), and a possible shift towards less GHG-intensive food products such as fish and chicken. There are

also seen to be opportunities in positively engaging consumers and suppliers to lower their impacts (e.g. *Woolworths Holdings*).

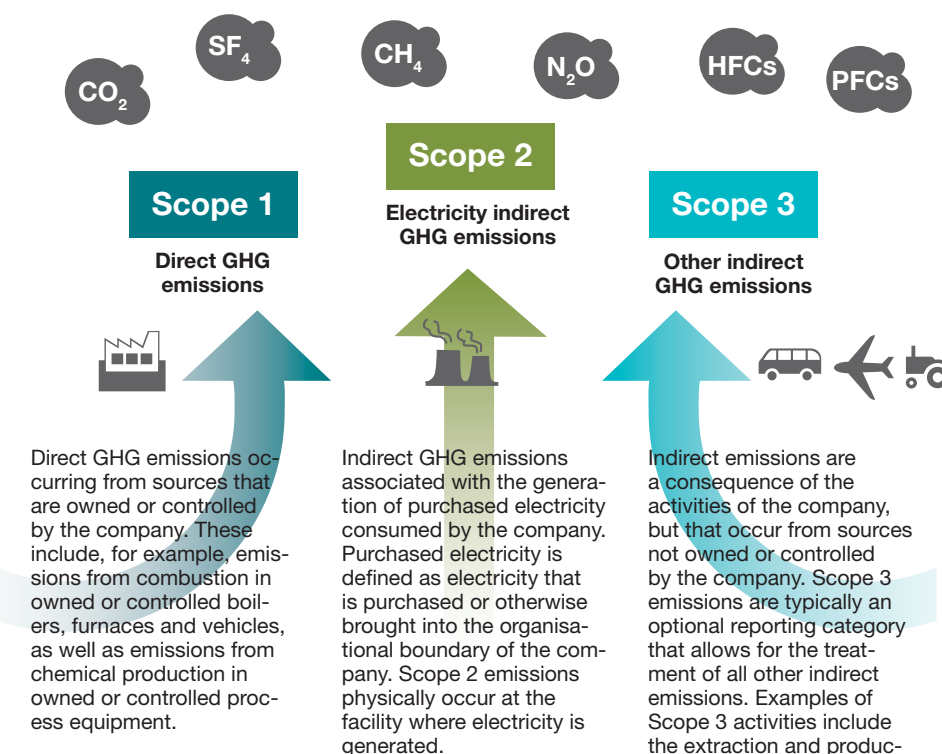
Greenhouse Gas Emissions Monitoring and Reporting: Results and Trends

As the old management adage puts it: “You can’t manage what you don’t measure.” While measuring emissions should not be an end in itself – and in many instances need not be a highly costly or onerous process – having a sound understanding of a company’s carbon footprint is the foundation upon which its climate response strategy should be based. Identifying the source of emissions throughout the company’s value chain, within its production and management processes, and through the life cycle of key products and services enables the prioritisation of cost-effective mitigation measures, facilitates the identification of climate risks and opportunities, and enhances the company’s understanding of potential exposure to GHG policy measures. Without an understanding of current and anticipated future emissions levels it is impossible to set GHG reduction targets, or to participate meaningfully in carbon trading opportunities.

To assist in the prioritisation of emission reduction opportunities, and to avoid double-counting, it is necessary for companies to distinguish between direct and indirect emission sources. To facilitate effective GHG accounting and reporting, a distinction is thus made between three GHG emissions “Scopes” (Table 4). For the purposes of the Carbon Disclosure Project, participating companies are asked to report on all three emissions types.

As is described in more detail below, there has been an encouraging increase this year in the number of companies measuring and reporting their emissions across all three Scopes. Most of those who did not report their emissions levels this year state that they have either commenced doing so, or plan to do so soon. One company reported a delay in quantifying its emissions due to “severe

Table 4 – GHG reporting protocol: defining emissions scopes 1, 2 & 3¹⁵



¹⁵ The definition of Scope 1, 2 and 3 emissions appears in The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard. World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD), March 2004.

economic constraints and budget re-prioritisation” (*Aquarius Platinum*), while another expressed that they do not measure this data and have no plans to do so in the future.

In a number of instances companies reported changes in their reporting methodologies, relating for example to the definition of boundaries, the nature of data collected and/or the method for measuring or calculating emissions (e.g. *FirstRand*, *Exxaro Resources*). These changes in methodology have an important bearing on the reliability of comparing year-on-year performance.

“We believe that the first step in managing or adapting to climate change risks is understanding the emissions profile of our businesses.”

Allied Electronics (Altron)

Increased Reporting of Scope 1 & 2 Emissions

- Of the 63 submissions analysed, 55 companies (87% of respondents) provided quantitative information on their Scope 1 & 2 emissions. Notwithstanding the fact that for many of these companies the disclosure was only partial (see Tables 5-7), this is nevertheless an encouraging increase on last year's disclosure rate of 77%.
- Figure 9 provides a breakdown of global Scope 1 & 2 emissions for "high emitting" companies (those reporting more than two million metric tonnes of annual CO₂-e emissions), while Figure 10 presents the publicly reported Scope 1 & 2 emissions for low emitting companies. In both instances, these reported emissions are compared with the emissions reported in CDP6 (2008). The data presented in these figures must be read in the context of the important company-specific qualifying remarks and explanatory notes provided in Table 5 (high emitters) and Table 6 and Table 7 (low emitters).
- The increase in the number of companies reporting their GHG emissions is accompanied by an increase both in the verification of reported data (24 companies in CDP 2009 compared with 13 last year), as well as an increase in the number of companies publicly reporting on their emissions in their annual and/or sustainability reports (50 companies as compared with 34).
- While it is encouraging to see the increase in level of reporting, it is evident that for many companies – particularly amongst the smaller, less visible emitters – they are at an early stage in monitoring and measuring their emissions, and thus that the data is not always sufficiently accurate. This is openly acknowledged by several of the participating companies who cite revisions in their data capture and reporting mechanisms as reasons for the changes in their reported annual

"At this stage, (the company) does not calculate its emissions. The process of adapting our business to cope with the climate change has only just begun and therefore this information is not available. In the future, (the company) fully intends to put in place the processes to begin complying with these requirements."
Real Estate Co.

"While it was Aquarius Platinum's intention to more fully quantify its emissions in FY2008, this project was suspended owing to severe economic constraints and budget reprioritisation."
Aquarius Platinum

emissions. As noted below, the changes in reported emissions due to imperfect monitoring practices are sometimes significant.

- This nascent reporting practice thus requires caution when making comparisons, both within a particular company (in terms of its reported emissions year-on-year), as well as between companies. This caution is less relevant to many of the larger emitters, some of whom (such as Sasol) have been monitoring, reporting and verifying their GHG emissions for the last decade. Recognising these caveats, it is nevertheless possible to get a sense of some key trends regarding the participating companies' global emission levels.

"In order to make meaningful comparisons with previous years, the emissions baselines had to be adjusted in accordance with ISO 14064 principles: the actual carbon footprint for 2006 (reported in CDP 2008) was updated to reflect changes in operational, organisational and emission factors, and to incorporate more accurate and comprehensive sources of data."
Exxaro Resources

"The inclusion this year of air travel data, and limited business travel data, has contributed to increasing the scope and overall carbon footprint quality."
FirstRand

Tracking emissions reporting history

- Taken collectively, the total Scope 1 & 2 emissions for those companies that reported emissions data both in CDP 2009 and CDP6 (2008) amounted to 210.05 million metric tonnes of CO₂-e for the 2009 reporting period, as compared with 210.89 million metric tonnes for 2008 (a marginal decrease of 0.4%).¹⁶
- Total direct emissions (Scope 1 only) in South Africa for these same companies was 99.2 million

¹⁶ This figure is based on the reported emissions from companies that provided emissions data in 2008 and 2009. It includes data from companies that chose not to make their data publicly available. Efforts have been taken to avoid double-counting (for example by excluding reported emissions from Anglo Platinum and Kumba Iron Ore as these are reported in Anglo American's emissions, as well as emissions from the Nedbank Group (Old Mutual) and Rainbow Chicken Ltd (Remgro)). The reported data is subject to the caveats provided in Tables 5-7.

metric tonnes of CO₂-e in 2009 as compared with 101.96 million metric tonnes in 2008. It is important to read these emissions levels in the context of the caveats provided in Tables 5-7; as is explained further below (in the context of some specific examples), there were some significant changes in reporting metrics and boundaries in certain companies, as well as some significant reporting errors.

- Amongst the high emitters the most substantial reported reductions in global Scope 1 & 2 emissions were achieved in the following companies, listed in order of absolute reductions achieved:

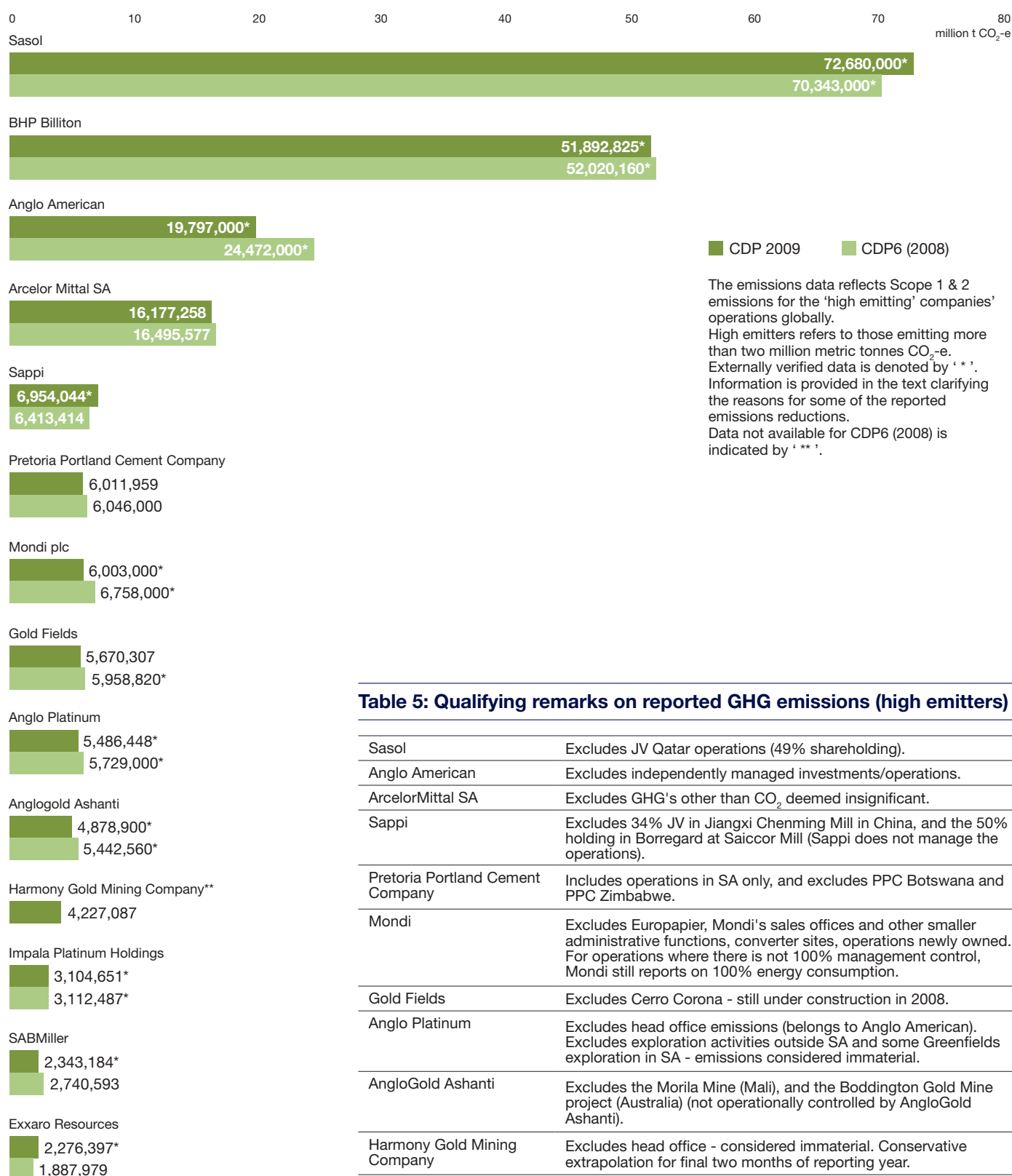
- *Anglo American*: a reduction of 4.6 million metric tonnes of CO₂-e, representing a 19% reduction on their reported level in CDP6 (2008). The increase is attributable predominantly to the divestment of Highveld Steel and Mondi. When Anglo American's global emissions are taken on a like-for-like basis (excluding these two companies for both reporting periods), the Group's emissions increased from 9.3 million to 9.6 million metric tonnes of CO₂-e.
- *Mondi*: a reduction of 755,000 metric tonnes (11%); this reduction is attributable predominantly to improved operating efficiency and substituting fossil fuels with biofuels. Mondi has invested in increasing its self-sufficiency in power generation by 14%, reducing its CO₂ emissions from purchased energy by 24%.
- *AngloGold Ashanti*: a reduction of 563,000 metric tonnes (10%).
- *SAB Miller*: a reduction of 397,000 metric tonnes (14.5%).
- *ArcelorMittal SA*: a reduction of 318,000 metric tonnes (2%).
- *Gold Fields*: a reduction of 288,000 metric tonnes (4.8%). (However, as the reported emissions at the company's New Vaal colliery decreased this year

by approximately 800,000 metric tonnes, due to a re-estimation of the fugitive emissions resulting from spontaneous combustion of the waste dumps, this suggests that total absolute emissions over the year actually increased).

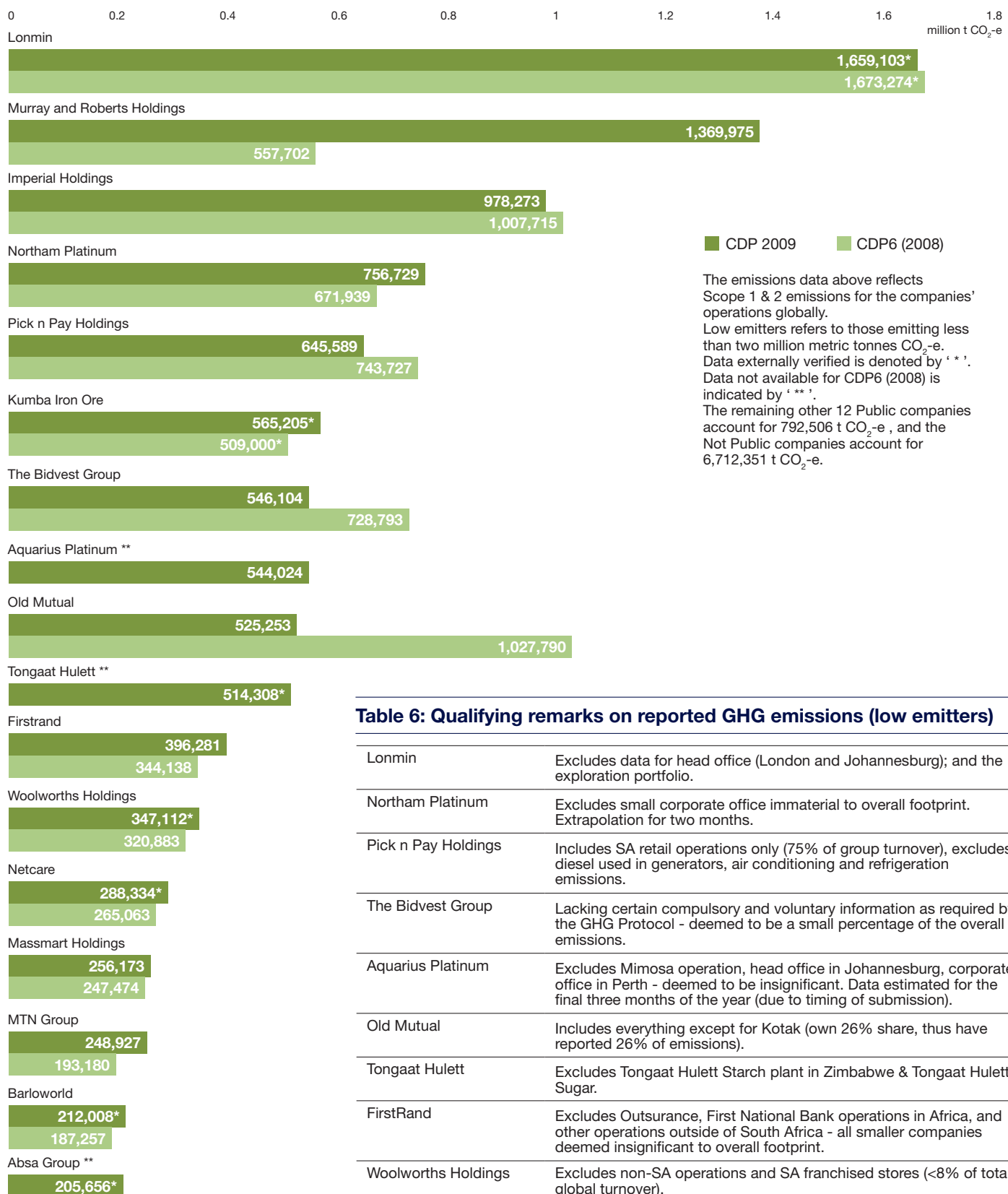
- Amongst the low emitters, significantly lower emission levels were also reported at *Old Mutual* (a reduction of 500,000 metric tonnes, 49% of their previous year's emissions) and *The Bidvest Group* (180,000 metric tonnes, a 25% reduction). Both these reductions are as result of improved reporting methodologies rather than specific emissions reductions activities.
- At *Old Mutual* the change in reported emissions is a result of the "increased integrity of data... through the introduction of an automated collection tool", as well as the collection of "actual (rather than estimated) data from our South African property portfolio team."
- Similarly, the change in emissions level for *The Bidvest Group* is due to a significant internal error in the calculation of the previous year's corporate office emissions; when this error is accounted for there is in fact an increase in total emissions, as a result both of the increased operations of the group and new sources of emissions not included in previous calculations.
- The following companies reported substantial increases in emissions, listed in order of absolute increases:
 - *Sasol*: an increase of 2 million metric tonnes of CO₂-e, representing a 3% increase on their reported level in CDP6 (2008).
 - *Murray and Roberts Holdings*: an increase of 812,000 metric tonnes (145% increase). This increase is reportedly the result of "a significant improvement in monitoring and reporting of

emissions across the Group, as well as an increase in projects and the production of materials for some of the operating companies."

- *Sappi*: an increase of 540,000 metric tonnes (8% increase).
- *Exxaro Resources*: an increase of 388,000 metric tonnes (20% increase).
- Several low emitting companies also reported significant increases in their relative emissions year-on-year, including *Standard Bank Group* (reporting a 41% increase), *Dimension Data Holdings* (33%), *MTN Group* (28%) and *Barlward* (13%). While at an absolute level these emissions increases are low when compared to the larger emitters, the relative increase is nevertheless significant and provides an indication of the nature of the challenge associated with achieving the emissions reduction levels referred to in the LTMS as being "required by science".

Fig. 9: Scope 1 & 2 emissions by company (high emitters): CDP 2009 vs. CDP6 (2008)**Table 5: Qualifying remarks on reported GHG emissions (high emitters)**

Sasol	Excludes JV Qatar operations (49% shareholding).
Anglo American	Excludes independently managed investments/operations.
ArcelorMittal SA	Excludes GHG's other than CO ₂ deemed insignificant.
Sappi	Excludes 34% JV in Jiangxi Chenming Mill in China, and the 50% holding in Borregard at Saiccor Mill (Sappi does not manage the operations).
Pretoria Portland Cement Company	Includes operations in SA only, and excludes PPC Botswana and PPC Zimbabwe.
Mondi	Excludes Europapier, Mondi's sales offices and other smaller administrative functions, converter sites, operations newly owned. For operations where there is not 100% management control, Mondi still reports on 100% energy consumption.
Gold Fields	Excludes Cerro Corona - still under construction in 2008.
Anglo Platinum	Excludes head office emissions (belongs to Anglo American). Excludes exploration activities outside SA and some Greenfields exploration in SA - emissions considered immaterial.
AngloGold Ashanti	Excludes the Morila Mine (Mali), and the Boddington Gold Mine project (Australia) (not operationally controlled by AngloGold Ashanti).
Harmony Gold Mining Company	Excludes head office - considered immaterial. Conservative extrapolation for final two months of reporting year.
Impala Platinum Holdings	Excludes exploration efforts in JV or alliances (Botswana, Canada, Greenland, Madagascar, Mozambique and South Africa) - but deemed immaterial.
SABMiller	Excludes newly acquired operations. Figures are for SABMiller prior to the MillerCoors JV in 2008.
Exxaro Resources	Excludes Australia Sands, Chifeng zinc refinery, Black Mountain lead, zinc and copper mine and concentrator, Sishen Iron Ore Company (latter three less than 26% interest); emissions from burning coal discard dumps.

Fig. 10: Scope 1 & 2 emissions by company (low emitters): CDP 2009 vs. CDP6 (2008)**Table 6: Qualifying remarks on reported GHG emissions (low emitters)**

Lonmin	Excludes data for head office (London and Johannesburg); and the exploration portfolio.
Northam Platinum	Excludes small corporate office immaterial to overall footprint. Extrapolation for two months.
Pick n Pay Holdings	Includes SA retail operations only (75% of group turnover), excludes diesel used in generators, air conditioning and refrigeration emissions.
The Bidvest Group	Lacking certain compulsory and voluntary information as required by the GHG Protocol - deemed to be a small percentage of the overall emissions.
Aquarius Platinum	Excludes Mimosa operation, head office in Johannesburg, corporate office in Perth - deemed to be insignificant. Data estimated for the final three months of the year (due to timing of submission).
Old Mutual	Includes everything except for Kotak (own 26% share, thus have reported 26% of emissions).
Tongaat Hulett	Excludes Tongaat Hulett Starch plant in Zimbabwe & Tongaat Hulett Sugar.
FirstRand	Excludes Outsurance, First National Bank operations in Africa, and other operations outside of South Africa - all smaller companies deemed insignificant to overall footprint.
Woolworths Holdings	Excludes non-SA operations and SA franchised stores (<8% of total global turnover).
Netcare	Excludes Netcare UK (report to CDP separately).
Massmart Holdings	Excludes Group's presence in countries outside South Africa, and fugitive emissions of refrigerant/cooling gases.
Absa Group	Includes Absa Bank Ltd only, and excludes GHGs other than carbon dioxide.

Table 7: Qualifying remarks on reported GHG emissions (low emitters – “remaining companies”)

Allied Electronics Corporation (Altron)	Excludes Allied Technologies (Altech) and Bytes international operations, Bytes Healthcare Solutions, Intellecta (recent acquisition), NOR Paper, Dynamic Battery Services (UK), and recent acquisition of new businesses.
Caxton CTP Publishers and Printers	Data does not apply to whole group, but includes 'CTP Parow' - set of three companies. Extrapolation for some figures.
Dimension Data Holdings	Data extrapolated for offices with immaterial floor space or comparatively immaterial FTE.
Growthpoint Properties	Includes only one head office building.
Investec	Data for different regions reported separately and only for specified offices: Australia, SA, London. Some variance in inclusions between regions, and element of double counting.
Liberty Holdings	Does not include 100% of properties, but includes 60 buildings and offices occupied by insurance and related operations (88% of business), excludes STANLIB, Liberty Africa, hotels and shopping centres.
Liberty International	Some jointly owned assets are reported - percentage share owned by the company is taken into account to correct for these assets.
Medi-Clinic Corporation	Excludes Medi-Clinic Corporation holdings outside of Southern Africa, (MCCH as Hirslanden in Switzerland, MCME as Emirates Healthcare in the United Arab Emirates). Some data estimates in exceptional circumstances.
Metropolitan Holdings	Excludes seven African subsidiaries, purchased electricity from smaller branches and African divisions, includes refrigerants in air-conditioning units in Head office only. Calculation covers business space (70% of FTE). Some assumptions for electricity usage where there are data gaps.
Nedbank Group	Includes site (58% FTE), excludes leased and rented SA retail outlets and unlisted regional offices; non-SA offices (London); wholly or partly owned subsidiaries; Imperial Bank; and emissions associated with ATM's, Self Service terminals, Point of Sale, and other remote devices.
Reunert	Excludes Nokia Siemens Networks South Africa in which a 40% share is held.
Sanlam	Includes activities from Sanlam Head Office and three other major Sanlam offices (68% FTE), excludes all other sources of GHG emissions. Some extrapolation.
Santam	Excludes all business facilities and activities other than those of Santam's head office buildings.
Standard Bank Group	Includes all areas, except fuel consumed by equipment and electricity consumption where only activities for specific offices and data centres are covered (75% of staff and 77% of the group's earnings).

The corporate contribution to direct emissions in South Africa

For the purposes of informing national climate policy it is useful to have an understanding of the direct contribution of each company to total GHG emissions levels in South Africa, as measured by their reported Scope 1 emissions for their locally-based operations. Although only 27 responding companies provided a breakdown of their emissions by region, this included most of the larger emitters, and thus it is possible to get a reasonably accurate estimate of the specific contribution of each company.¹⁷

Figure 11 provides an overview of the total global and South African emissions, as well as the Scope 1 emissions in South Africa, for the five largest emitting participating companies.

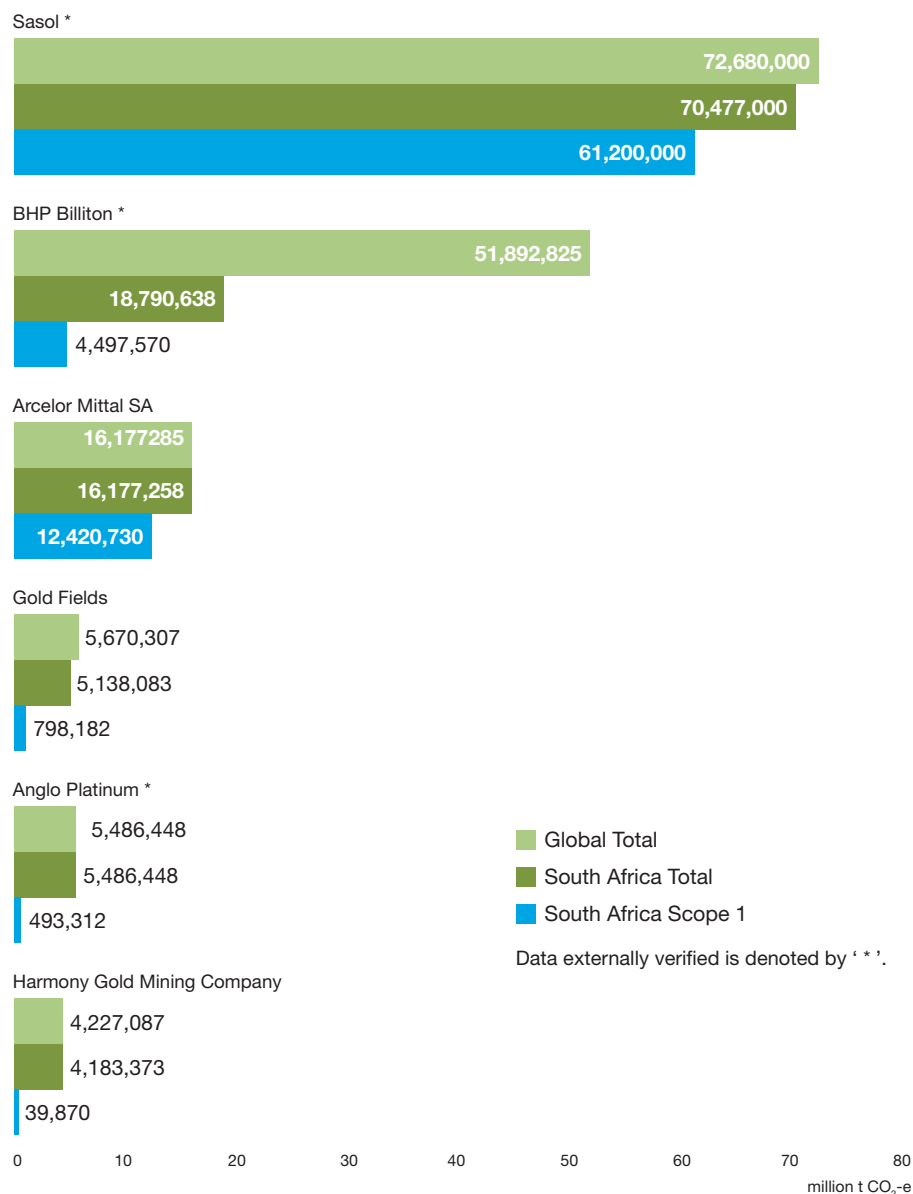
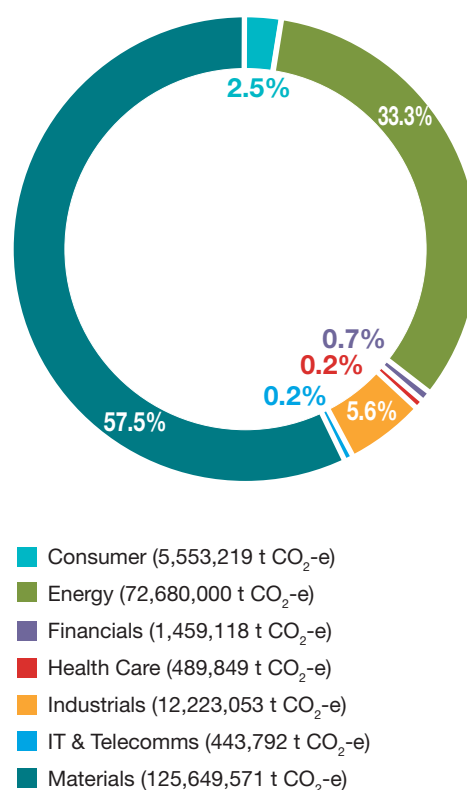
- Total Scope 1 emissions in South Africa for all the reporting companies in CDP 2009 amounts to 101 million metric tonnes of CO₂-e.¹⁸
- In terms of direct local emissions (Scope 1), the data highlights the predominant contribution of *Sasol* (with reported local annual emissions of 61 million metric tonnes of CO₂-e), followed by *ArcelorMittal SA* (12.4 million metric tonnes), *BHP Billiton* (4.5 million metric tonnes), and *Anglo American* (3.4 million metric tonnes).¹⁹
- These figures should be seen in the context of the total estimated emissions in South Africa – from all sources – of approximately 440 million metric tonnes.²⁰ This underscores the influence of *Eskom* and *Sasol*, both in terms of their contribution to total industrial emissions as well as to emissions in South Africa as a whole. *Eskom*'s reported emissions of 221 million metric tonnes constitutes 50% of total South African emissions, while *Sasol*'s direct emissions amount to 14% of total national emissions.

¹⁷ Of the 27 companies that provided detail of their emissions data at the regional level, 11 were from the Materials sector and seven from Financials. Twenty-five companies provided a break-down by business division, and nine by facility.

¹⁸ Not all companies have separated their direct South African emissions from their global emissions; it is suggested however that for most of reporting companies that have not done so this is unlikely to have a significant impact on the general emission levels reported here. This figure includes data from companies that have replied to the CDP questionnaire, but have chosen not to make their data publicly available; efforts have been taken to avoid double-counting (see e.g. footnote 10). Unlike the Scope 1 figure reported on page 36, this figure includes the Scope 1 emissions in South Africa for all companies, including those who are reporting for the first time. The reported data is subject to the caveats provided in Tables 5-7.

¹⁹ Note this figure is for all of *Anglo American*'s reported emissions in Africa as they did not provide a breakdown specifically for South Africa; as most of their high-emitting activities in Africa take place in South Africa this is seen to be a reasonable indication. The figure already includes within it the emissions for *Anglo Platinum* and *Kumba Iron Ore*, two *Anglo American* companies that also report separately in the CDP.

²⁰ The most recent formal estimate is 427.9 million metric tonnes in 2004, as reported in the South African government's Long Term Mitigation Scenario. See also the World Resources Institute's (WRI) Climate Analysis Indicator Tools (online available: <http://cait.wri.org>).

Fig. 11: Company emissions by scope and location (high emitters)**Fig. 12: Sectoral contributions to total scope 1 & 2 emissions**

Sector dominance of Scope 1 & 2 emissions

With sector-based approaches being mooted by negotiators as a possible policy option for engaging developing countries within a post-Kyoto climate framework²¹, it is valuable for policy-makers – in assessing the feasibility and potential impact of such options – to have an understanding of the emissions associated with different sectors.

- An overview of the total reported Scope 1 & 2 emissions by sector is provided in Figure 12. Unsurprisingly the Energy and Material sectors

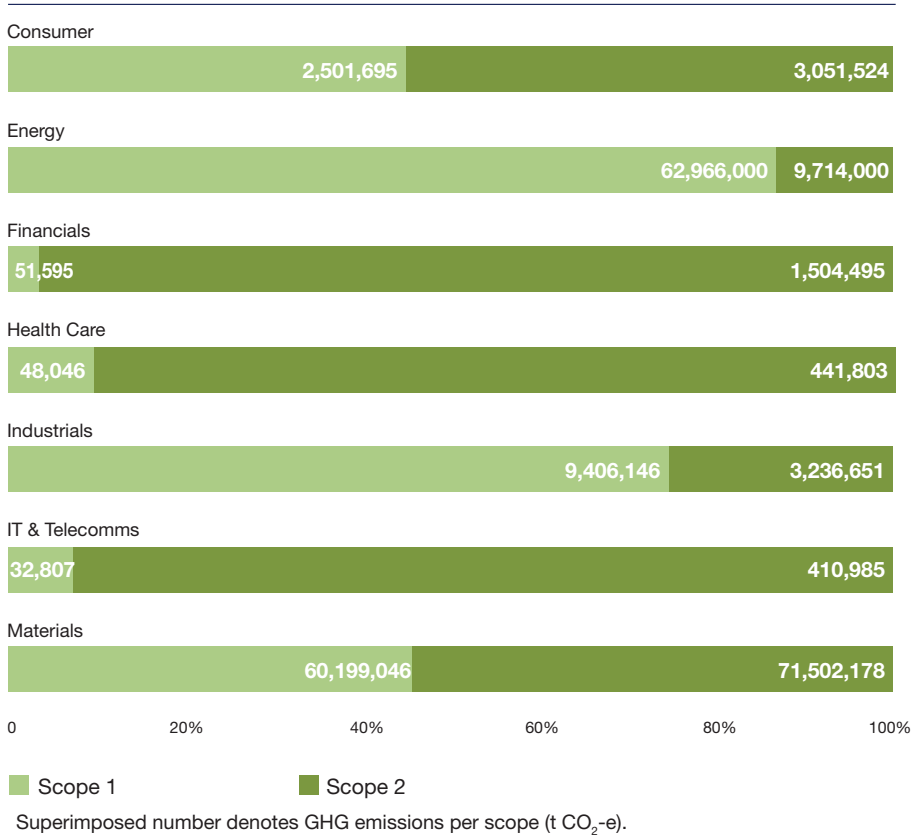
remain the largest emitting sectors, collectively contributing more than 90% of total Scope 1 & 2 emissions. Of the 32 sub-sectors present in the sample, only five account for more than 1% each – Metals & Mining (44%), Steel (7.4%), Paper & Forest Products (5.9%), General Industrial (4.3% - *Pretoria Portland Cement Company* accounting for 2.8% of this), and Beverages & Tobacco (1.1%).

- Figure 13 shows the contribution of Scope 1 & 2 emissions to total emissions in each sector,

highlighting the predominant role of electricity consumption in terms of company GHG emissions, and underlining the significant impact that decisions relating to the nature of Eskom generation mix will have on corporate efforts to reduce emissions.

²¹ For a review of recent debates surrounding the potential role that sectoral approaches could play in a post-Kyoto framework see e.g. UNEP / Incite Sustainability *Industry Sectoral Approaches and Climate Action, From Global to Local Level in a Post-2012 Climate Framework: A Review of Research, Debates and Positions* (publication pending).

Fig. 13: Contribution of scope 1 & 2 emissions to total emissions in each sector



Growth in Monitoring and Reporting of Scope 3 Emissions

In addition to their direct and electricity-related emissions, responding companies were also requested to disclose their Scope 3 emissions. These refer to the indirect emissions related to an organisation's business operations and products, and include, for example, employee business travel, external logistics, the use and disposal of the company's products and services, and emissions in the company's supply chain. By their nature – being emissions that occur from sources not owned or controlled by the company – Scope 3 emissions are typically more difficult to monitor and measure than Scope 1 & 2 emissions.

- While there has been a noticeable increase since last year in the number of companies measuring and reporting their Scope 3 emissions in some form (41 companies as compared with 21), the nature of the disclosure nevertheless remains of very variable quality. Most of the responding companies acknowledge that their Scope 3 data can be improved on,

noting that it is currently of a pilot nature and limited either to certain types of Scope 3 emissions and/or to particular parts of the business.

- Several respondents highlight the lack of comprehensive data gathering systems and the difficulties in accessing reliable data on Scope 3 emissions, while some (notably amongst the high direct emitters) question the value of measuring certain types of indirect emissions due to their comparatively minor contribution to total emissions (e.g. *Pretoria Portland Cement Company*; *BHB Billiton*).
- While many companies have either committed to improving their existing Scope 3 reporting, or to start including the monitoring of Scope 3 emissions as part of their carbon accounting activities, some suggest that doing so is not a business priority, particularly in the context of the current economic climate (e.g. *Reunert*).
- A dominant theme in the companies' response on this issue is the need to ensure appropriate prioritisation

“Scope 3 emissions are not measured in the PPC operations because the total contribution is less than 1% of the carbon footprint.”

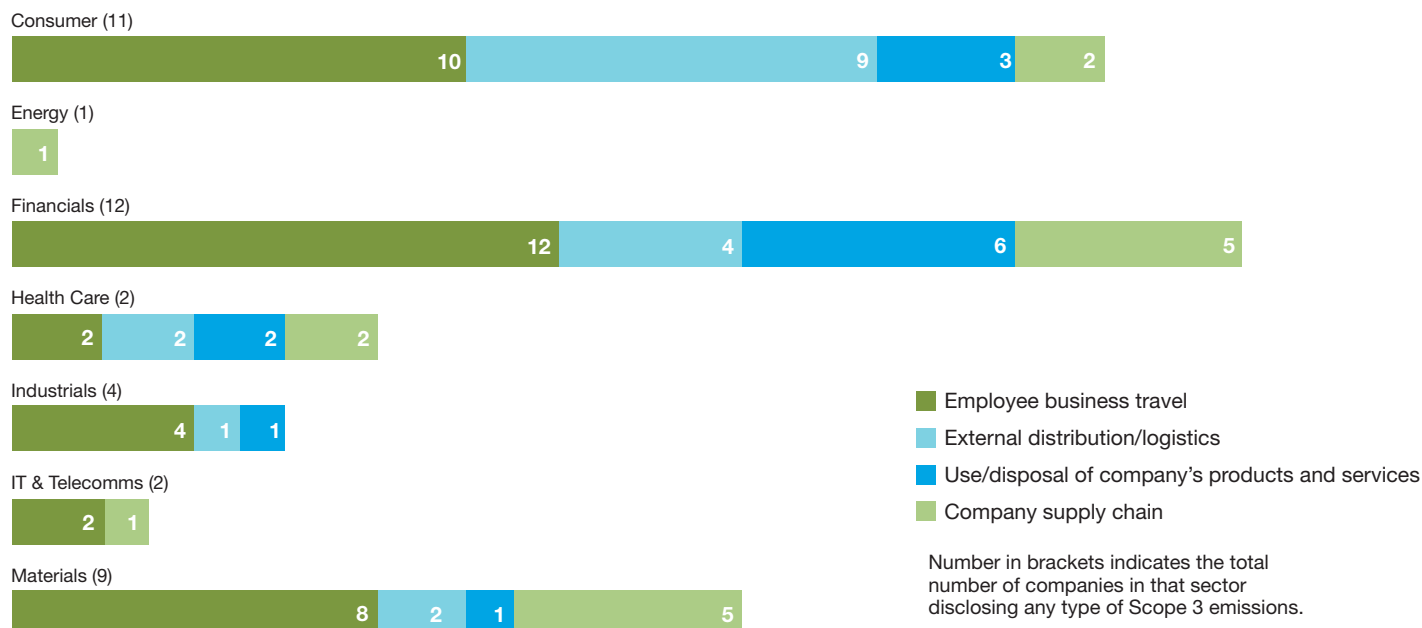
Pretoria Portland Cement Company

“BHP Billiton's assessments to date indicate that Scope 3 emissions from our company supply chain are not material to our overall inventory, as they comprise significantly less than 1% of total Scope 3 emissions.”

BHP Billiton

“(Calculating Scope 3 emissions) has not been seen as a high business priority and limited internal resources are available considering the scope of the project.”

Reunert

Fig. 14: Number of companies reporting scope 3 emissions per emissions type in each sector

– firstly, as regards the value in measuring and reporting indirect emissions at all, and secondly in identifying those types of indirect emissions that should be monitored. While for large direct emitters certain types of Scope 3 emissions (such as employee travel) are likely to be very small in terms of the total percentage of their emissions, for smaller direct emitters these indirect emissions present the greatest opportunity for achieving reductions.

Figure 14 identifies the number of companies within each sector that are tracking the following different categories of Scope 3 emissions:

- employee business travel;
- external distribution and logistics;
- use/disposal of a company's products and services; and
- emissions in the company's supply chain.

A brief review of the responses relating to each of these emissions types is provided above.

Continuing Focus on Monitoring Employee Business Travel

- As with the CDP6 (2008) results, and in line with the CDP's Global 500 review, employee business travel remains the most widely measured Scope 3 emissions type. Emissions data on employee business travel was provided by 38 companies (60% of all responding companies), with total reported emissions amounting to 227,000 metric tonnes of CO₂-e.
- While for most companies this reported data is based primarily on calculations derived from company air travel and car-hire, some companies also provide for the use of private vehicles for business purposes (based on submitted travel claims) and for emissions associated with hotel accommodation. In several instances – most notably in the service-oriented sectors – business travel constitutes a significant percentage of the company's emissions and represents a viable focus area for emissions reduction opportunities (e.g. *Dimension Data Holdings*).

“The decision to focus on business travel as our key Scope 3 emission is derived from several reasons. The GHG emissions generated by our business travel are relatively large compared to our Scope 1 and 2 GHG emissions, they are considered to be critical by our key stakeholders, and they can be reduced significantly.”

Dimension Data Holdings

“Supply chain and logistics are significant contributors and we are growing our capabilities to assess and mitigate these impacts. As an example, by moving our Gauteng distribution centre in 2007, we are saving nearly 10,000km of logistics-related travel per week.”
Woolworths Holdings

“No emissions were calculated based on external distribution and logistics due to the difficulty of obtaining this information.”
Anglo Platinum

“Through an ongoing process of engagement with service providers and other supply-chain participants, prioritised in accordance with their impact on Scope 3 emissions, Nedbank is pursuing broadening of the reporting scope over the long term.”
Nedbank Group

“Our Carbon Management Plan (CMP) outlines a programme to work with our top ten global vendors to establish their environmental policies. When this programme is complete, Dimension Data will be better placed to assess our influence over our supply chain.”
Dimension Data Holdings

Growth in Monitoring External Distribution and Logistics

- A total of 18 companies provided data in this area, with reported emissions of 587,000 metric tonnes of CO₂-e. Due to the significant role that distribution and logistics plays in the sector, reporting on emissions associated with these activities is most evident in the consumer and retail sector, with data provided by nine of the twelve participating companies in the sector (e.g. *Woolworths Holdings*).
- Several companies identified this as a significant source of emissions, but are not yet quantifying it, citing difficulties associated with accessing appropriate data (e.g. *Anglo Platinum*).

Variable Reporting of Supply Chain Emissions

- Data on companies' supply chain emissions was provided by 16 companies, with total reported emissions of 1.5 million metric tonnes of CO₂-e. Data in this category was provided primarily by mining companies and those in the financial sector. Interestingly, only two companies in the consumer sector provided information on supplier emissions, and these were both from companies that chose not to make their emissions reporting public.
- While it is encouraging to see greater efforts being made in monitoring supply chain emissions (e.g. *Nedbank Group*; *Dimension Data Holdings*), the very contrasting emissions data reported in this category would suggest that the data should be treated with some caution. Amongst mining companies, for example, reported supply chain emissions range from 23 metric tonnes to 966,000 metric tonnes, while in the financial services sector emissions range from 212 metric tonnes to 3,100 metric tonnes. While supply chain emissions are likely to vary markedly between sectors, the nature of these differences between similar companies in the same sector implies significant differences in methodologies and in setting boundaries.
- Despite these caveats it is nevertheless encouraging to see the recent increase in efforts to engage

supply chains in carbon accounting activities, as part of broader efforts to encourage more widespread mitigation activities.

Use/Disposal of a Company's Products and Services

- Thirteen companies provided data on emissions associated with their products and services, with total reported emissions in this category amounted to 318 million metric tonnes of CO₂-e. This is made up almost entirely of the reported emissions associated with the use or disposal of *BHP Billiton's* product, namely the combustion of their coal.
- Other companies reporting emissions in this category include:
 - *Medi-Clinic Corporation* – emissions of 1,429 metric tonnes from the transport of general and hazardous/medical waste;
 - *Netcare* – emissions of 1,360 metric tonnes associated with the incineration of medical waste;
 - *Woolworths Holdings* – emissions of 4,545 metric tonnes, most of which comes from 1,726 tonnes of waste paper going to landfill; and
 - *FirstRand* – emissions of 173,631 metric tonnes associated with electricity at leased buildings.

Greater Levels of Emissions Intensity Disclosure

While monitoring and reporting **absolute** GHG emissions is essential for assessing progress towards achieving global and national mitigation objectives, reporting on an **emissions intensity** basis is valuable for tracking the relative impact of an organisation's operations, and for assessing carbon efficiency. Monitoring emissions intensities is particularly informative for internal comparison over time or for external comparison with companies in the same sector.

Emissions intensity measurements may relate, for example, to the level of emissions per unit of product output, area of floor space, Rand / Dollar of company turnover, or number of employees. The choice of preferred intensity measure will be informed by

the underlying objective for tracking comparative performance and the nature of the company's business. Companies that have interests in diverse fields of business, and/or that have different product types, often find it difficult to identify one particular measure for their emissions intensity. In such cases, it may be more valuable to use separate product- or company-specific measures (e.g. *Anglo American*; *Massmart Holdings*; *Old Mutual*), while at a group level it is perhaps most practical to relate carbon emissions to an economic figure such as turnover or earnings before interest, taxes, depreciation and amortisation (EBITDA).

The CDP questionnaire includes a request for such economic carbon intensities from all responding companies, in addition to any company-specific intensity measure. This year 40 respondents (64%) reported a financial emissions intensity measure (as compared with 31 companies (58%) last year), while 39 companies (62%) reported an activity-related emissions intensity measure (contrasting with 25 companies (47%) last year).

To facilitate a preliminary assessment of the reported carbon-intensities of different companies, the following tables have been compiled based on the data submitted by the participating companies:

- **Emissions per ounce of gold or platinum group metal (Table 8)** – While recognising the caveats regarding the quality of some of the reported data, it is suggested that the data in this table provides an initial indication of the comparative production efficiencies of the reporting companies.
- **Emissions per tonne of selected product (Table 9)** – As the nature of the listed products varies significantly, this data is provided for broad indicative purposes only and is not directly comparable (other than for *Sappi* and *Mondi*, which show similar emissions efficiencies).
- **Emissions per full time employee (Table 10)** – Due to the different reporting boundaries and methodologies used by the responding companies (with differences, for example, in the

number of offices included or in the nature of employees' Scope 3 emissions provided for) this data should be interpreted with some caution when seeking to make comparisons.

- **Emissions per square metre of floor space (Table 11)** – This table provides examples of the emissions efficiencies reported by companies in the Consumer and Financials sector.

Recognising that the boundaries and methodologies may differ between companies, and that many of these companies are at an early stage in their reporting processes (note e.g. the qualifying remarks in Tables 5-7), one needs to apply caution in undertaking any comparative analysis based on this reported data. There is nevertheless seen to be great value in the principle of publicly disclosing the emissions intensities of similar companies and products, as this facilitates the identification of potential inefficiencies and contributes to more informed decision-making. As companies become more consistent in the quality of their reporting, the reliability of this data will improve and the merit of making decisions based on these comparisons will increase.

“Banks and corporate operations are generally paper-intensive. However, paper's contribution to greenhouse gases is only approximately 0.4% of the total carbon footprint for FirstRand. FirstRand bank's electricity consumption is still the major contributor to its total greenhouse gas profile.”

FirstRand

“Absolute emissions have increased (30%) from 2007. This is due to increased commercial activity and improved reporting also influenced this figure. However, reported in a financial intensity measure, the increase is less significant (10.4%).”

Barloworld

“We produce a wide range of products and are aiming to produce intensity metrics on a per tonne basis for each product, but we cannot meaningfully aggregate these product intensities to give a Group intensity metric. We have internal emissions targets for each.”

Anglo American

“BHP Billiton’s main sources of data uncertainty are the use of default emission factors instead of site-specific methods, in particular for fugitive emissions.”

BHP Billiton

“The need to proactively verify data anomalies at individual sites - highlights the need to encourage and improve ownership at asset level over the accuracy of the data being reported to head office.”

Liberty International

Table 8: Examples of reported emissions intensities: GHG per ounce of gold or PGM

Sector	Company	t CO ₂ -e per ounce of gold or PGM ²²
Materials - PGM	Aquarius Platinum	0.83
	Lonmin	1.21
	Anglo Platinum	1.46
	Impala Platinum Holdings	1.63
	Northam Platinum	2.0
Materials - gold	AngloGold Ashanti	0.91
	Gold Fields	1.52
	Harmony Gold Mining Company	3.0

Table 9: Examples of reported emissions intensities: GHG per tonne of selected product

Sector	Company	t CO ₂ -e per tonne selected product
Energy	Sasol	3.0
Industrials	Pretoria Portland Cement Company	0.901
Materials	ArcelorMittal SA	2.8
	Kumba Iron Ore	0.016
	Exxaro Resources	0.027
	Mondi	0.97
	Sappi	1.059
Consumer	SABMiller	0.013
	Tongaat Hulett	0.8529

Towards Improved Accuracy in Emissions Reporting

- Although the trend towards greater disclosure of GHG emissions among responding companies is encouraging, some concerns remain regarding the reliability of some of the reported data. In many instances these concerns are recognised by the reporting companies and openly reported by them. Cited sources of data uncertainty include:
 - the predominant use of assumptions and extrapolations (such as default emissions factors) in emissions calculations (e.g. *BHP Billiton*);
 - gaps in available data;
 - poor quality of third party information;
 - human error associated with the manual capture of data; and
 - inadequacy of internal data capture process and systems.
- Notwithstanding these concerns, most companies suggest that these uncertainties typically affect reported emissions by less than 5%, with at least a third of reporting companies reporting confidence levels of greater than 98%. The majority of those declaring the impact of uncertainties to be insignificant, maintain that the uncertainties impact a negligible percentage of the total emissions (1%). Two companies, however, suggest possible deviations of between 10-15%.
- The emissions data of only 24 of the responding companies (38%) has been externally verified. Of these, approximately half of the companies have expressed confidence that the assurance is at a reasonable level, while the rest suggest that the assurance is rather limited,

²² t refers to metric tonnes.

Table 10: Examples of reported emissions intensities: GHG per employee or FTE

Sector	Company	t CO ₂ -e per employee or FTE
Consumer	Woolworths Holdings	16.24
	Caxton CTP Publishers and Printers	27.94
Financials	Liberty Holdings	8.43
	Old Mutual	2.9
	Investec	9.34 *
	Santam	4.77
	Sanlam	9.45
	Nedbank Group	6.29
Industrials	Imperial Holdings	27.6
	Barloworld	10.78
	The Bidvest Group	5.47
IT & Telecomms	Dimension Data Holdings	6.26

Table 11: Examples of reported emissions intensities: GHG per square metre of floor space

Sector	Company	t CO ₂ -e per square metre
Consumer	Massmart Holdings	0.31
	Pick n Pay Holdings	0.36
	Woolworths Holdings	0.64
	Caxton CTP Publishers and Printers	0.48
Financials	Old Mutual	0.19
	Growthpoint Properties	0.28
	Liberty Holdings	0.29
	Investec	0.5 *

* Average of the data for three regions.

Table 12: Total reported energy consumption by sector

Sector	Number of companies reporting energy usage	MWh
Consumer	9	10,470,753
Energy	1	8,823,669
Financials	9	1,367,452
Health Care	3	32,950
Industrials	5	182,564
IT & Telecomms	3	119,515
Materials	14	130,074,177

One financial company's data was not included in this total due to suspected data error.

expressing the concern, for example, that it only covers a selection of emissions disclosures. While most of the high-emitting companies have undertaken some form of verification, some of those that have not done so include *ArcelorMittal SA*, *Pretoria Portland Cement Company* and *Gold Fields*. The last two of these have, however, indicated that they are in the process of establishing external assurance procedures.

Measuring and Managing Energy Consumption

In addition to requesting data on a company's carbon footprint, the CDP also seeks data on the participating companies' energy consumption. As typically the highest contributor to a company's carbon emissions, energy consumption is a useful general indicator of a company's carbon emissions, depending of course on the nature of the energy source.

“Most large companies now measure their carbon footprint and many have set carbon reduction targets. But how many of those targets are actually in line with the required reductions to prevent dangerous climate change? The (CDP) research highlights a significant gap between what is needed from the corporate sector and what's currently promised. We in the business world need to find a way of closing this carbon chasm.”

Chris Tuppen (BT Sustainability Officer) – The Carbon Chasm (CDP Report)

Box 3 – Characteristics of Effective GHG Reduction Targets

There are several characteristics of GHG targets that should be considered in assessing the effectiveness of the responding companies' GHG targets (Table 14):

- Scope of emission sources – As a minimum the target should include all Scope 1 & 2 emissions; the nature and extent to which Scope 3 emissions should be included within the target will vary depending on the sector involved. One would expect, for example, logistics emissions to be included in Retail sector targets but not in Finance sector targets, while both sectors should ideally include business travel emissions in their targets.
- Type of GHGs covered – In principle provision should be made in the target for any of the Kyoto Protocol gases that the company emits. In practice, where emission of a particular gas forms a low percentage of total Scope 1 & 2 emissions, excluding them is acceptable, although ideally such exclusions should be mentioned.
- Absolute or emissions-intensity targets – While there are recognised benefits in emissions-intensity targets, if companies are to make a meaningful contribution to the attainment of what is recognised as being “required by science” then provision will need to be made for absolute reduction targets. Emissions-intensity targets have particular value in the context of product-specific commitments.
- Geographic and organisational extent – While targets, ideally, should be comprehensive in their coverage, provision may need to be made to exclude, at least initially, those regions or business units that do not have reliable GHG inventories.
- Target base year and completion dates – As a general rule, it is preferable for the base year to be the most recent year for which reliable data is available, while the target year should not be more than ten years after the base year. Although there is merit for those companies that make long-term infrastructure investments to adopt longer-term targets (e.g. to 2020 and 2050 in line with recent global policy developments), these targets should also provide for short- and medium-term commitments.
- Nature of GHG reduction commitment – Finally, and perhaps most importantly, the target should set a sufficiently ambitious commitment that will make a meaningful contribution towards global mitigation efforts recognising what is seen as being required by science. The identified quantitative target should be informed by a sound appreciation of the company's individual reference scenario (the anticipated emissions path from the base to the target year), which itself should be based on a thorough set of scenario assumptions relating, for example, to company growth rates, electricity mix, planned divestments and efficiency levels. The target needs to strike a balance between being achievable, yet sufficiently ambitious. Preferably, achievement of the target should exclude any emissions reductions attained through offset or emissions trading initiatives.

Table 13: Total reported energy expenditure (selected companies)

Company	Annual energy expenditure as a percentage of turnover *
Consumer	
Tongaat Hulett	1.89%
Woolworths Holdings	0.96%
Pick n Pay Holdings	0.61%
Energy	
Sasol	1.15%
Financials	
Liberty Holdings	0.11%
Old Mutual	0.11%
Health Care	
Netcare	0.37%
Medi-Clinic Corporation	0.22%
Industrials	
Murray and Roberts Holdings	3.01%
The Bidvest Group	0.54%
IT & Telecomms	
Allied Electronics Corporation (Altron)	0.23%
MTN Group	0.07%
Materials	
Lonmin	31.77%
AngloGold Ashanti	12.36%
Sappi **	9.85%
Northam Platinum	5.01%
BHP Billiton **	4.53%
Anglo Platinum	3.96%
Mondi	2.23%
Impala Platinum Holdings	1.71%

* Energy expenditure includes the cost of electricity, heat, steam and fuel purchased for mobile and stationary combustion.

** Turnover figures had to be converted from US\$ to ZAR to match the currency of reported energy costs.

Companies were chosen if they had disclosed at least one type of energy cost (electricity, heat, steam or fuel) and if turnover figures for the same reporting year were available from either the companies' CDP response or from an independent source. Turnover figures were obtained from individual company CDP reports where possible. Where turnover figures were not provided in the CDP response, independently sourced figures were used if the reporting year matched that for which energy costs were reported.

Encouraging improved measurement and disclosure of energy consumption is valuable in catalysing improved management of the company's energy consumption and thus in turn of its GHG emissions.

- This year 45 of the 63 responding companies provided data on their energy usage. The reported global total of purchased electricity for these 45 responding companies amounted to 151,071,080 MWh (Table 12). This compares with 348,724,275 MWh of reported energy usage by 37 companies in CDP6 (2008). While this significant change in part reflects both the economic downturn and the impact of recent demand side energy measures, it is suggested that it may also be a result of internal methodological issues.
- Of the participating companies, 71% disclosed their global energy costs. The company with by far the largest reported energy expenditure was *BHP Billiton*, at approximately US\$2.92 billion, followed by *ArcelorMittal SA* (US\$1.05)²³ and *Mondi* (US\$208.14)²⁴.
- With the anticipated increase in energy costs, including in particular as a result of a possible carbon tax, this serves to highlight the potential vulnerability of those companies and/or sectors where energy costs are a high percentage of their operating costs or turnover (Table 13).

Setting Targets: Expressing Commitment to Climate Change Mitigation

Setting targets and key performance indicators is an important feature of any robust business strategy; they assist in focusing the mind of top management, guide future decision-making processes, and provide a valuable indicator of the level of ambition and strategic intent of the company.

In terms of the corporate response to climate change, various existing performance targets may have a bearing – either directly or indirectly – on a company's GHG emissions. For example, existing corporate targets relating generally to product and process efficiency will typically contribute to a lower relative carbon

footprint, whether deliberate or otherwise. The most obvious and prevalent “proxy targets” on climate change are those relating to energy efficiency. While there is almost always a direct causal link between energy usage and GHG emissions (particularly in South Africa where the predominant sources of energy use by business are coal-based electricity and liquid fossil-fuels), the causal relationship is dependent on the nature of the energy source. Unless specifically linked to fossil-fuel based energy, energy efficiency targets on their own are not a reliable indicator of GHG emissions.

For these reasons it is suggested that an effective commitment to climate change mitigation involves setting targets that relate specifically to reducing greenhouse gases. There are two broad types of GHG targets:

- **absolute reduction targets** – typically expressed as a percentage reduction in total emissions on a defined baseline year by an agreed target date; and
- **intensity-based targets** – most frequently stated as a reduction in the ratio of GHG emissions relative to another business metric, such as product output, turnover or floor space.

While absolute reduction targets are environmentally robust – expressing a clear commitment to reduce total emissions by a defined amount – they are challenging in the context of significant structural changes within an organisation: the targets may be difficult to attain if the company unexpectedly grows, or conversely may be met simply by reducing output (for instance in an economic downturn) or by divesting carbon-intensive businesses. Intensity-based targets, on the other hand, reflect improvements in the company's GHG performance independently of its economic growth (or decline), and facilitate comparability with similar companies. However, they suffer the disadvantage that even if ambitious intensity targets are met, absolute emissions can increase if outputs increase at a faster rate. Absolute targets are generally deemed to be more environmentally robust, and are for example the preferred target

It is important to recognise and acknowledge the significant recent increase in the number of South African companies that have voluntarily adopted emissions reductions commitments, beyond what is required by law. However, if local business is to make a meaningful contribution to addressing climate change, then we need to see a significant increase both in the number of companies with emissions reductions commitments, and in the level of ambition of these targets.

type in the WWF's Climate Savers initiative.

The relative merits of absolute and emissions intensity targets are important criteria to consider in assessing the nature and effectiveness of any GHG reduction targets adopted by South African listed companies. Some additional criteria relating to the efficacy of GHG targets are described in Box 3.

²³ Reported amount of ZAR8.64 billion; converted using an average exchange rate of ZAR/US\$ 8.257 for 2008.

²⁴ Reported amount of €141.20 million; converted using an average exchange rate of US\$/€1.47 for 2008.

Significant (Yet Insufficient) Increase in the Adoption of GHG Targets

Table 14 provides a detailed review of the reported GHG reduction targets in the responding companies.

- This year, 20 companies (32% of respondents) report having GHG emissions reductions targets, while another 11 companies state that they are in the process of defining such targets. This is an important increase in commitment since last year, when only 12 companies reported having company-wide GHG emissions targets; eight of these were from the Materials sector, with the remaining four being from Energy (1), Finance (2) and Consumer (1).
- The 20 companies with GHG targets in this year's response represent a broader cross-section of sectors, with nine companies from Materials, five from Financials, three from Consumer, and one each from Industrials, Health Care and Energy. A commitment to developing GHG targets is also formally expressed from companies in the IT & Telecommunications and Industrials sectors.
- Recognising that many of the companies with targets are based primarily in South Africa and surrounding developing countries – none of whom have national emissions reduction commitments – it is encouraging to see this entirely voluntary adoption by companies of GHG targets. While to a large extent this may be in anticipation of future regulatory action, these voluntary targets in themselves might contribute towards a greater readiness by (and/or pressure on) developing country policy-makers to take on national commitments as part of the post-Kyoto climate framework.
- Notwithstanding this encouraging increase, South African companies generally compare poorly with the Global 100 companies; and if one assumes that none of the non-respondents in the JSE 100 survey have emissions reduction targets, this would suggest that only 20% of the JSE 100 companies have specific GHG emissions commitments.

Table 14: GHG emissions reduction targets by company²⁵

Consumer	
Massmart Holdings	In the process of being defined. Anticipate target to reduce logistics emissions associated with store delivery and returns processes.
SABMiller	50% reduction in fossil fuel emissions from fossil fuel use on company sites by 2020 (2008 baseline).
Woolworths Holdings	30% relative reduction in carbon produced directly by the business (2007 baseline).
Energy	
Sasol	15% reduction in GHG emissions per tonne of product by 2020 (2005 baseline). 10% reduction in GHG emissions per tonne of product by 2015 (2005 baseline).
Financials	
Absa Group	In the process of being defined. Reduce CO ₂ emissions by 5,000 metric tonnes by end 2009 (2008 baseline).
Growthpoint Properties	In the process of being defined.
Investec	In the process of being defined.
Liberty International	5% or greater reduction in carbon footprint in 2009 (2008 baseline).
Nedbank Group	10% reduction in paper usage by 2010 (2007 baseline) - 0.0594 tonnes per employee by 2010. 12% reduction in carbon emissions by 2015 (2007 baseline) - 7.67 metric tonnes CO ₂ e per employee.
Old Mutual	2% reduction in total Scope 1,2 & 3 emissions (2008 baseline).
Sanlam	15% reduction in overall carbon emissions (2007 baseline).
Santam	15% reduction in carbon emissions per capita (2007 baseline). 15% reduction in air passenger kilometres and car rental kilometres per capita (2007 baseline). 10% reduction paper consumption per capita (2007 baseline).
Standard Bank Group	In the process of being defined.
Health Care	
Medi-Clinic Corporation	In the process of being defined.
Netcare	Reduce GHG emissions to 160 metric tonnes CO ₂ -e per R1m EBITDA by 2011 (2007 baseline).
Industrials	
Murray & Roberts Holdings	In the process of being defined.
Pretoria Portland Cement Company	In the process of being defined. 15% reduction of CO ₂ emissions by 15% by 2020 (2008 baseline).
IT & Telecomms	
Dimension Data Holdings	In the process of being defined. Quantitative targets will be set following the deployment of the company's Environmental Management System (commenced in 2009).
Materials	
Anglo American	10% reduction of CO ₂ emissions per unit of production by end 2014 (2004 baseline).
Anglo Platinum	10% reduction in greenhouse gas emissions by 2014 (2004 baseline).
AngloGold Ashanti	30% reduction in GHG emissions per ounce of gold produced ("medium-to longer-term target").
ArcelorMittal SA	7% reduction in CO ₂ emissions per tonne of liquid steel by 7% by 2014 (2005 baseline).
BHP Billiton	6% reduction in GHG emissions intensity by June 30th 2012 (2006/7 financial year baseline).
Exxaro Resources	In the process of being defined. Specific targets will be assigned once policies and plans have been formulated (2008 will be the baseline).
Harmony Gold Mining Company	30% reduction in methane emissions (2008 baseline). 50% reduction in domestic coal usage (2008 baseline).
Kumba Iron Ore	10% reduction in carbon emissions by 2014 (2004 baseline).
Mondi	15% reduction in CO ₂ emissions from fossil fuels by 2014 (2004 baseline).
Northam Platinum	In the process of being defined. Reduction of 180l/s of refrigerated water required for refrigeration purposes by 2011 (2009 baseline).
Sappi	European operations: 1% reduction per year in specific direct fossil CO ₂ emissions (2008 baseline) North American operations: 10% reduction in emissions from fossil fuels across all sites (2007 baseline).

Table 15: Energy reduction targets by company

Consumer	
Pick n Pay Holdings	20% reduction in electricity consumption by 2012 (2007 baseline).
Massmart Holdings	5% reduction in relative energy consumption by 2012 (2008 baseline).
Tongaat Hulett	In the process of being defined.
Woolworths Holdings	30% reduction in relative energy usage by 2012 (2004 baseline).
Energy	
Sasol	EEA: 15% reduction in energy consumption by 2015 (2000 baseline).
Financials	
FirstRand	In the process of being defined. Anticipate target of 10% reduction in electricity consumption (October 2006 - October 2007 baseline).
Growthpoint Properties	In the process of being defined.
Investec	In the process of being defined.
Liberty Holdings	15% reduction in energy consumption on office buildings and 20% reduction in energy consumption on shopping centres by 2015 (2000 baseline).
Nedbank Group	12% reduction in energy consumed by 2015 (2005 baseline) - 5335kWh per employee by 2015.
Sanlam	13.6% reduction in fossil fuel-based energy use (2007 baseline).
Santam	10% reduction in electricity consumption per capita (2007 baseline).
Standard Bank Group	In the process of being defined.
Health Care	
Medi-Clinic Corporation	In the process of being defined.
Industrials	
Barloworld	In the process of being defined. EEA: Investigating 15% reduction in energy consumption by 2015 (2000 baseline).
Murray and Roberts Holdings	In the process of being defined.
Pretoria Portland Cement Company	EEA: Investigating 15% reduction in energy consumption by 2015 (2000 baseline).
IT & Telecomms	
Dimension Data Holdings	In the process of being defined. Quantitative targets will be set following the deployment of the company's Environmental Management System (commenced in 2009).
Materials	
Anglo American	15% energy intensity reduction per unit of saleable product by 2014 (2004 baseline).
Anglo Platinum	15% reduction in energy consumption by 2014 (baseline 2004).
AngloGold Ashanti	15% reduction in energy consumption per ounce of gold produced ("short-to medium-term target").
ArcelorMittal SA	To improve energy efficiency (GJ/tonne liquid steel) by 15% by 2014, with the year 2000 being the baseline.
BHP Billiton	13% reduction in carbon-based energy intensity by June 30th 2012 (2006/7 financial year baseline).
Exxaro Resources	In the process of being defined. Specific targets will be assigned once policies and plans have been formulated (2008 will be the baseline). EEA: Investigating 15% reduction in energy consumption by 2015 (2000 baseline).
Gold Fields	5% reduction in electricity consumption per year for two years (2008 baseline).
Harmony Gold Mining Company	EEA: 15% reduction in energy consumption by 2015 (2000 baseline). 15% reduction in fuel usage (diesel and petrol) (2008 baseline).
Impala Platinum Holdings	EEA: 15% reduction in energy consumption by 2015 (2000 baseline).
Kumba Iron Ore	15% reduction in energy consumption by 2014 (2004 baseline).
Lonmin	10% reduction in energy consumption per unit of production by 2012 (2007 baseline).
Mondi	15% reduction in energy consumption by 2014 (2004 baseline).
Sappi	SA operations: 10% reduction in purchased power by end 2009 (2008 baseline). 15% reduction in energy consumption by 2015 (2000 baseline).

- In addition to the low number of companies with GHG targets, there are some concerns regarding the level of ambition of many of the existing targets, as well as with the process of defining these targets. These concerns are reviewed in more detail below.

Continuing Formal Commitments to Energy Efficiency

Table 15 provides a detailed review of the reported energy-related targets in the responding companies.

- The review shows that 22 companies (most of whom also have GHG targets) have committed to meeting energy efficiency targets, while 11 companies report that such targets are in the process of being defined. This higher rate of companies with energy-based targets contrasts with the findings of a Global 100 review, which found that 62% of the targets are CO₂-e related, compared to 15% based on energy consumption and 9% on energy efficiency.²⁶ This may reflect both the recent energy challenge in South Africa, as well as the impact of the Energy Efficiency Accord signed between the government and various companies and/or industry associations under the auspices of the National Business Initiative.
- Only two of the companies with existing energy reduction targets make specific reference to reducing carbon-based electricity (*BHP Billiton* and *Sanlam*); for the rest the focus is on energy efficiency in general with no explicit reference to the nature of the energy mix. The sectoral breakdown is broadly similar to that for GHG targets, comprising 12 companies from Materials, four from Financials, four from Consumer, and one each from Industrials and Energy.
- Most of the reported energy targets are based on the commitment to reduce energy intensity by 15% by 2015 (on a 2000 baseline) that forms part of the Energy Efficiency Accord. More ambitious energy efficiency targets have been set by *Woolworths Holdings* (30% reduction in relative energy usage by

²⁵ Note: two other responding companies have GHG reduction targets, but they chose not to make their reports public.

²⁶ CDP The Carbon Chasm (August 2009)

2012 on a 2004 baseline) and *Pick n Pay Holdings* (a 20% reduction in energy by 2012 on a 2007 baseline).

- With the recent developments regarding the Power Conservation Programme, coupled with the significant increase in energy prices, it is anticipated that there will be more widespread adoption of efficiency targets, as well as greater evidence of efficiency improvements within companies, including within those sectors (such as Real Estate) that have traditionally been less visible in making commitments of this nature.

“SABMiller has developed an energy strategy that is based on the Princeton wedges concept. Through this we have targeted seven particular focus areas to achieve energy and emission reductions: improving energy efficiency; investing in renewables; switching to cleaner fossil fuels; utilising carbon trading to reduce risk and create value; moving to lower carbon packaging; reducing carbon emissions; and encouraging low emissions fridges in distribution chains.”

SABMiller

Limited Evidence of Emissions Forecasting and Planning Activities

For companies to develop targets that are suitably challenging, yet achievable, it is necessary to have an understanding of the company's projected GHG emissions and/or energy use, based on assumptions relating, for example, to the company's anticipated future growth patterns.

Figure 6 provides an indication of the extent to which companies are undertaking emissions forecasting activities.

- Perhaps surprisingly, only seven of the responding companies (11% of respondents) provide quantitative forecasts of their future emissions and/or energy use: *Impala Platinum Holdings; Massmart Holdings; Nedbank Group; Old Mutual; Sappi; The Bidvest Group* and *Woolworths Holdings*. Five of these companies include emissions projections for Scope 1 & 2 emissions for the next five years, while two of them only include Scope 2 projections for the next three years.
- While the noticeably poor response rate on this question across all sectors is not unique to the South African CDP, it is nevertheless an area of some concern, particularly as regards its implications for determining suitably ambitious and realistic emissions reduction targets.

Assessing the Level of Ambition of these Targets

In evaluating the level of ambition of the responding companies' GHG reduction and energy efficiency targets it is useful to assess these in the context of the following considerations:

- the level of emissions reductions seen as being “required by science”, as described for example by the IPCC recommendations or the recent LTMS documents (Section 3);
- the nature of options that are seen to be both technologically and economically feasible; and
- the nature of emissions targets being set by industry peers abroad.

Focusing on each of these considerations in turn:

- If developed economies are to meet the IPCC's recommended target

of cutting emission 80% by 2050, this will require a minimum annual global reduction rate of 3.9% per annum. Recent analysis by the CDP of the reduction targets of the Global 100 companies²⁷ suggests that the commitments of these leading companies would result in an annual reduction of just 1.9% per annum; continuing on this path, the required reductions will not be achieved until 2089. While recognising the principle of common but differentiated responsibilities, which places the greater burden on developed countries to reduce emissions, it is nevertheless evident that if global emissions are to be contained within required levels, then energy-intensive sectors in developing countries such as South Africa will need to be included as soon as possible in global climate mitigation activities. This is particularly important given the anticipated economic growth in developing countries, the potential for carbon lock-in through large infrastructure projects, and the identified possibility for cost-effective mitigation options in these countries. In this context, the “required by science” scenario in the LTMS calls for an emissions reduction by 2050 of 30-40% of 2003 levels, equating to an annual reduction in total emissions of 1,300 metric tonnes CO₂-e. The current predominance of intensity-based targets, coupled with the low level of targets generally, suggests that further work is needed by industry to show the required commitment in delivering on this goal.

- In their recent assessment of global GHG abatement costs, McKinsey argues that there is **potential** to reduce GHG emissions by 35% by 2030 on 1990 levels (or 70% against business as usual), which “would be sufficient to have a good chance of holding global warming below the 2° Celsius threshold”. They argue further that “if the most economically rational abatement opportunities are pursued to their full potential – clearly an optimistic assumption – the total worldwide cost would be less than one percent of forecasted global GDP in 2020”. Focusing on various individual sectors, the report demonstrates that ambitious

Table 16: Examples of emission reduction activities by company

Consumer	
Caxton CTP Publishers and Printers	Implementing prepress technologies, such as computer-to-print-plate systems, that eliminate chemical and solid waste. All aluminium plates are recycled, and in some instances sold to self-help schemes where they are used to manufacture solar cookers.
SABMiller	The Czech business, Plzenský Prazdroj, reduced carbon emissions by over 50% against its allocated allowance. Initiatives included modernising the brewhouse at the Pilsen brewery and using biogas from the wastewater treatment plants as an auxiliary fuel at two other Czech breweries.
Woolworths Holdings	Various energy-saving initiatives including: installing energy efficient lighting; only using electronic ballasts, in place of magnetic chokes; installing remote monitoring of electrical profiles of selected stores, depots and offices; utilising new refrigerant technology as part of pilot programme (resulting in 35% decrease in electricity use in stores); and conducting staff awareness programmes. Sustainable building strategy that provides e.g. for use of natural light; intelligent light fittings; heat recovery from refrigeration plant; solar thermal hot water production for ablution facilities; evaporative cooling technologies for refrigeration plants. Recycle used cooking oil in a biodiesel mix for the fleet, saving 1,500 metric tonnes of CO ₂ per annum. Constructed a new energy efficient distribution centre saving 9,370 km of delivery-related travel per week. Working with suppliers to incorporate energy efficiency initiatives and other sustainability thinking into their operations.
Energy	
Sasol	Various energy efficiency projects at Sasol Synfuels plant at Secunda have resulted in a saving of 40 MW. Recently approved projects to be implemented by 2012 (with Capex of R4,800m) include a 280 MW combined cycle gas turbine project that will initially run on natural gas; and further steam turbine and compressor upgrades (expected to result in an annual reduction of 1,140,000 metric tonnes of GHG). Further steam turbine and compressor upgrades are expected to result in 900,000 tpa GHG reductions. A New Energy division has been established which will coordinate efforts around further energy efficiency improvements, in particular, the identification, development and introduction of cleaner energy options for existing and new operations.
Financials	
FirstRand	Various energy savings initiatives implemented since October 2007; implementation cost of R 12,269,499, with annualised savings of R 7,516,351.
Growthpoint Properties	Energy efficiency programme includes: the installation of smart energy metres; an energy efficiency audit of the company's head office; monitoring and controlling energy use through an internal Building Management System (BMS); the installation of micro-weather systems; reducing the operating time of escalators and lifts; installation of solar shielding; the installation of chill beams or air curtains at the entrances of heated/cooled buildings; introduced paperless billing for customers; and introducing a behavioural change programme for staff members. Additionally the company is investigating the use of special insulation paints; the potential for daylight harvesting at new buildings; "greener" IT solutions for the company; and new types of refrigerant gases to replace those with higher global warming potential.
Nedbank Group	Initiatives include computer virtualisation, changing to energy efficient lights, various initiatives to reduce paper usage (achieving a reduction of 11% usage per FTE); anticipated replacement of air-conditioners; and an employee change management programme. Reduced purchased electricity consumption in head office sites by roughly 6%. Emissions from business travel fell significantly year-on-year: emissions from rental cars falling by 25%, and from commercial flights by 28%.
Industrials	
Pretoria Portland Cement Company	Specific initiatives include: the commission of a new technology kiln at Dwaalboom; installation of a modern vertical roller mill at the Hercules operation in Pretoria; and reducing the clinker content in cement; use of alternative fuels and a reduction of diesel consumption by haul trucks in the quarries by optimising the design and planning of the mine (haul truck routes, crusher placement, and overhead conveyor system). Achieved an emissions reduction (metric tonnes of CO ₂ -e) of 18% per tonne of clinker and 7% per tonne cement (2008 on 2000 baselines).
The Bidvest Group	Initiatives at Bidvest 3663 include: buying locally; regularly maintaining vehicles; and introducing computerised routing systems to optimise routes. Efficient route planning systems reduced the km per item delivered by 6% (versus 2006/7), and litres of fuel used per item by 5.8%. Approximately 70% of vehicles run on bio-diesel from customers' and suppliers' used cooking oil, saving around 188 metric tonnes of CO ₂ per week (around 9,776 metric tonnes year). New electric refrigeration on 3663 trucks reduces emissions by 30% compared with conventional systems.
Materials	
Anglo American	Specific initiatives include: improving haul truck efficiency at Sishen mine with expected CO ₂ reduction of 17,600 metric tonnes; and installing more efficient lime kilns at Buxton (Tarmac) with expected reduction of 49% in specific energy consumption and 30% in CO ₂ emitted per unit of production.
Exxaro Resources	Specific projects include: a housing project that uses "earthbricks," made out of air-dried organic binder materials instead of being baked; a zinc-air battery project to provide lighting in 250 houses at Tshikondeni (110 households already have the batteries) and a comprehensive vegetative carbon footprint study. Energy efficiency initiatives at Exxaro Resources's head office resulted in reduction of 1,840 metric tonnes / year of CO ₂ -e. Around 30 million metric tonnes of carbon captured within the 32 types of vegetation in land under operational control.

emissions reductions are both technologically and economically feasible. Arguably, many of the current emissions reductions targets in South Africa are less ambitious than what these abatement cost curves would suggest is feasible.

- In contrast to the South African response, the CDP's recent review of the GHG targets of the Global 100 companies found that 62% of their targets are CO₂-e related, compared to 15% based on energy consumption and 9% on energy efficiency.²⁸ Similarly, there are almost twice as many absolute targets (86) compared to intensity targets (45). While there is a significant range in the level of ambition of the Global 100 targets, the leaders within each sector typically demonstrate a higher level of commitment than is currently evident in South Africa. While this may be a function of the legislative pressure within developed countries, it might also be seen as an indication as to what is feasible.

Implementing Emissions Reduction and Adaptation Measures

Increase in Emissions Reduction Activities

In addition to the significant increase in the adoption of GHG targets, there has been an accompanying increase in the level of emission reduction activities. Almost all of the responding companies described initiatives they are taking to promote emissions reductions, some examples of which are provided in Table 16.

- Understandably, given recent developments with electricity costs and supply constraints in the country, there is a predominant focus on implementing energy efficiency measures, with a particular emphasis on more efficient use of electricity. Typical examples of energy initiatives across sectors include: more efficient management of air conditioners, lighting, geysers and extraction fans; installing lighting retrofits, smart energy metres and motion sensors; specifying energy and water efficient air-conditioning and/or refrigeration units in stores and offices; replacing CRT computer screens with LCD

“Cleaner electricity generation through renewable energy is a significant opportunity. Exxaro Resources has initiated a pre-feasibility study on two renewable energy projects with the potential of generating 250 – 400 MW, in wind and/or solar generation. The carbon footprint of electricity from these sources is virtually zero. These opportunities offer attractive returns at low risk; act as a hedge against future energy price increases and potential future carbon taxes; and have potential upside in terms of related carbon credits under the Clean Development Mechanism.”

Exxaro Resources

“Northam has embarked on renewable energy and energy efficiency solutions in Northam's mine housing and hostel accommodation. This includes distributing compact fluorescent lighting to village and mining staff, as well as geyser blankets and timers in 600 houses. Furthermore, Northam has retrofitted 13 x 37 KW hot water generators with solar power, which is anticipated to reduce emissions up to approximately 840 tonnes CO₂-e annually.”

Northam Platinum

“Mondi Group is actively using the energy produced as a by-product of its industrial processes. Mondi Group is also selling sustainable-produced energy via renewable energy support schemes in the Czech Republic and Poland. For Mondi Group, this is a vision of the future where communities can actively benefit from its processes. For example, today Mondi Group is supplying towns with excess heat and electrical energy from its Syktyvkar and Ružomberok mills. In Austria, a hospital is successfully using its excess low-temperature heat following an investment by the local authority. In Frohnleiten, Austria, Mondi Group is planning a hydro power plant and in Swiecie, Poland, Mondi Group is rebuilding a biomass boiler instead of the existing coal fired boiler.”

Mondi

²⁸ CDP The Carbon Chasm (August 2009)

Table 17: Companies self-generating electricity from renewable sources

	MWh of self-generated renewable energy (excl. biomass)	Total purchased energy (MWh)	% of total
AngloGold Ashanti	134,832	8,154,493	1.65
Gold Fields	67,000	5,012,355	1.34
Mondi	30,000	20,400,000	0.15
SABMiller	108,286	7,297,948	1.48
Sappi	16,450,641	27,386,585	60.1

computer screens; implementing energy saving settings and remote shutdown of all computers and reducing desktop printers in favour of multi-functional printers; and reducing the operating time of escalators and lifts.

Although there has been a noticeable increase in investments in renewable projects (Table 18), there is significant further potential for such investments, with most South African corporates lagging behind their foreign competitors in seizing opportunities in this area (this is reviewed further below). It is hoped that recent policy developments regarding energy generation will further stimulate investment opportunities.

- Many companies are investing in initiatives for improved efficiencies in transportation and logistics activities, including: converting used cooking oil into biodiesel for use in truck fleets; improving maintenance and operating practices for trucks; introducing computerised routing systems to optimise routes; enhancing the provision of public transport for staff; introducing video conferencing facilities and being more stringent on office flight travel.
- Some companies – primarily among the larger emitters in the Materials and Energy sectors – are integrating climate abatement assessment requirements and carbon pricing in their investment appraisal processes.
- There is encouraging evidence of moves to engage organisations throughout the value chain – such as packaging companies, property tenants and retail consumers – in identifying and implementing reduction initiatives.

Although there has been an increase in the number of companies reporting activities relating to emissions trading

and Clean Development Mechanism projects (Table 19), the level of activity in this area remains relatively low in comparison with other high emitting developing countries such as India, China and Brazil.

Many companies are also engaging employees in identifying innovative climate response measures.

Increasing Investment in Renewables, But Much Potential Remains

In addition to focusing attention on energy efficiency opportunities, the recent electricity supply crisis has increased attention on the potential for alternative power supplies, even though these are typically more expensive up-front than Eskom's electricity. While many companies initially opted for carbon-intensive diesel generators as an immediate solution to failing power supplies, there is nevertheless growing longer-term interest in renewable energy technologies that allow a degree of general autonomy from national grid supplies.

Of the five companies that have reported generating their own electricity from renewable sources (Table 17), in four of these – *AngloGold Ashanti*, *Gold Fields*, *Mondi* and *SAB Miller* – the percentage contribution remains minimal (between 0.15 and 1.65%). By contrast, *Sappi* reports generating 60% of their total energy needs through their own renewable sources.

Table 18 summarises the renewable energy activities disclosed by 18 responding companies. A broad variety of initiatives are reported including:

- investing in a commercial power project generated by mining ventilation air, "a world-first GHG reduction initiative" (*BHP Billiton*);

"Fuel cells may become more popular as a result of climate change, providing a new market opportunity for platinum. Anglo Platinum has installed a stationary fuel cell power plant near Lephalale in Limpopo, the first in Africa. The 200-kW fuel-cell power plant is one of 270 in the world and uses CBM gas as fuel. The objective of the demonstration site is to showcase and promote this technology to relevant stakeholders in South Africa as an alternate and clean energy solution."

Anglo Platinum

“The Required by Science Scenario sees a South Africa in 2050 vastly different to the one we know now. New technologies dominate the electricity generation and transport sectors, and renewable and nuclear technologies... are taken up much earlier, and at a much larger scale. New technologies, notably hydrogen-based transport, will by then be the norm, with hydrogen being manufactured by non-carbon means.”

Long Term Mitigation Scenario (LTMS) – South Africa

- investing in photovoltaic companies (*Allied Electronics (Altron)*), solar projects (*Anglo American*) and wind farms (*BHP Billiton*);
- recycling used cooking oil for bio-diesel (*Woolworths Holdings* and *Pick n Pay Holdings*);
- purchasing solar-water heaters for staff facilities (*Anglo Platinum* and *Northam Platinum*);
- installing wind turbines to generate office electricity (*Pick n Pay Holdings*); and
- investigating the potential for commercialising renewable energy opportunities at scale (*Sasol*).

Although recent developments – such as concerns around security of electricity supply, increases in electricity prices and policy initiatives relating to feed-in tariffs – have boosted interest and investment in renewable energy activities, the level of investment still remains small, particularly when compared with recent developments internationally and in the context of estimated investment opportunities in the country.²⁹

Emissions Trading and Clean Development Mechanism Projects

For South Africa as a developing country, the most relevant carbon trading mechanism provided for within the Kyoto Protocol is the Clean Development Mechanism (CDM), a project-based mechanism that encourages developed countries with emissions reduction targets to invest in emissions reduction projects in developing countries. Although there are currently only 15 successfully implemented CDM projects in South Africa³⁰, there is generally high awareness amongst the responding companies of the opportunities related to CDM activities.

Table 19 summarises the different CDM activities and interests disclosed by the respondents. Several other companies report a general awareness of possible opportunities in CDM projects; these non-specific responses were not included in the table.

- Although only two companies expressly report having registered CDM projects this year, 33% of the responding companies reported an

involvement or practical interest³¹ in CDM projects (as compared with 40% last year).

- In the European Union, the obligatory Emissions Trading System (EU ETS) has been operational since 2005, requiring companies that produce GHG emissions beyond their fixed annual allowance to purchase additional emissions certificates at the EU ETS carbon market. Five South African companies – namely *Anglo American*, *BHP Billiton*, *Mondi*, *SABMiller*, *Sappi* and *Sasol* – report having facilities covered by the EU ETS. With one exception (*Mondi*), all of these indicated that they were able to sell surplus allowances.
- Interestingly, despite some of the hype that emissions trading schemes have been receiving, 37 of the responding companies reported that they do not anticipate participation in any trading schemes within the next two years, while only 16 anticipate that they will do so.

²⁹ See e.g. WWF Cheaper Electricity with Renewable Energy: Costing a 15% Target for 2020 for South Africa.

³⁰ Details of registered CDM projects are provided at <http://cdm.unfccc.int/index.html>

³¹ This included those companies that indicated that they intended to explore CDM potential. The figure is thus not reflective of the total percentage of companies that have taken some form of action with regard to pursuing CDM activities.

Table 18: Selected examples of activities to promote renewable energy

Consumer	
Pick n Pay Holdings	Solar water heating systems have been installed in a number of locations and the company is converting used cooking oil into biodiesel for use in the truck fleet. In Port Elizabeth three pilot wind turbines have been installed (generating about 3% of the regional office's electricity needs). Other sources continue to be investigated.
Tongaat Hulett	The company's sugar mills are fuelled on bagasse (sugar cane residue) during the sugar milling season. The mills generate surplus renewable electricity for sale. Discussions are under way with Government, renewable electricity traders and end-users to facilitate a market for large-scale co-generation of renewable electricity by the sugar industry.
Woolworths Holdings	Woolworths Holdings has taken steps to address the issue of vehicle emissions by recycling used cooking oil to generate a 5% biodiesel mix in part of their fleet.
Energy	
Sasol	Sasol has recently established a New Energy Unit that is investigating opportunities for developing renewable energy technologies. It is also embarking on biofuels research as a renewable resource for liquid fuels. The company currently uses 235,000 tpa of renewable feedstock in their Olefins and Surfactants business.
Financials	
FirstRand	The company has signed an energy performance contract as part of the Clinton Climate Initiative aimed at uniting businesses and institutions in battling climate change by greening facilities. Experimental self-generated and renewable energy projects have been applied in a small number of areas.
Investec	Investec purchased 656 renewable energy certificates that were surrendered as offsets to the GHG emissions resulting from the power consumed by Investec Bank (Australia) Limited.
Industrials	
Barloworld	36% of the Scandinavian car rental business's electricity usage is either wind or hydro-generated.
Materials	
Anglo American	Several alternative energy opportunities have been identified by Anglo Base Metals including wind, solar alternatives and co-generation. This includes a potential solar project at Skorpion Zinc mine in Namibia that could result in 45,000 MWh of savings per annum, or 6% of current electricity usage.
Anglo Platinum	Solar water heaters are the primary supply of hot water for change-house showers at Mototolo Concentrator and Brakfontein shaft at Lebowa Platinum Mine. A feasibility study has been undertaken to evaluate the viability of constructing 50 MW solar power plants to supplement the Eskom electricity supply; and the viability is being assessed of using heat generated by parabolic trough solar collectors to power absorption chillers for the fridge plant at the future Amandelbult No 4 shaft (instead of a conventional ammonia fridge plant).
ArcelorMittal SA	Two turbines are nearing completion to generate 29MW of electricity utilising waste gas at Vanderbijlpark Works. One 130MW waste gas power station is planned for Vanderbijlpark Works and one 130MW waste gas power station is being investigated for Newcastle Works as part of the planned expansion of the facility.
BHP Billiton	The company is investing in the West Cliff Ventilation Air Methane Project (WestVAMP) that generates power from mine ventilation air. WestVAMP plant will generate approximately five megawatts of electricity and reduce greenhouse gas emissions by 250,000 metric tonnes CO ₂ -e each year. Additionally the company has an agreement with Pacific Hydro to develop one or more wind farms in Chile, with an installed capacity of over 100 MW.
Exxaro Resources	Exxaro Resources has initiated a pre-feasibility study on two renewable energy projects with the potential of generating 250 – 400 MW, in wind and/or solar generation.
Gold Fields	The company has installed a number of turbines that recover the potential energy in water columns as the water is sent underground in the mines. In South Africa passive solar heating technologies have been introduced for both residential and industrial use, particularly with respect to the supply of hot water for new change houses. In Ghana the option of using locally-produced biodiesel mixed with standard diesel is being investigated. In Australia options to supplement gas-fired power are being evaluated, with a wind resource survey to be commissioned at St Ives and solar-power proposals currently being received for Agnew. Finally the company will generate approximately 42,000 MWh of electricity and save about 42,000 metric tonnes CO ₂ -e from using the mine methane at Beatrix as part of a CDM project.
Mondi	The group has increased the proportion of self-produced energy from 71% in 2004 to 85% at the end of 2008. The company aims to increase the use of its own-produced biomass, black liquor, sludge, tall oil and other renewable fuels, by driving investments in the technology needed to use it.
Northam Platinum	The company has conducted studies into coal gasification, solar and wind energy. Thirteen 37 KW hot water generators have been retrofitted with solar power and the company uses some hydro-powered equipment: water is used to drive rock drill machines used in underground workings.
Sappi	Renewable resources (such as black liquor, bark, sludges and purchased biomass) provide more than 75% of energy used in North America, 38.1% in South Africa, 31.8% in Europe and 48.6% of the company's global energy use. In South Africa, the company has invested US\$4.3 million in the conversion of a coal-fired boiler to one operating on biomass as part of a CDM project that came on stream in 2007. In the EU the company uses non-aerobic digestion of sludge as a means of generating renewable energy in the form of biogas. In 2008 42,391 GJ of biogas were produced. The company has appointed a bio-refinery expert to drive the commercialisation of alternate types of fuel to replace existing fossil fuels.

Table 19: CDM and related emissions trading activities by sector category and company

Consumer	
SABMiller	There are three CDM projects either in the advanced stage of planning or already established in operations in Colombia, Honduras and India. In Honduras, operations are selling carbon credits from a project established to capture biogas from their wastewater treatment plant. In Colombia a brewery has sold credits for the 2004-06 period from a fuel-switching project and has further credits to sell from 2007 onwards. In India the company is looking at establishing a project around switching fuels from fossil based fuel to biomass (rice husks).
Energy	
Sasol	Through Sasol's N ₂ O Project, 259,537 CERs were issued in August 2008. Sasol expects the next batch (around 540,000 CERs) to be issued in mid-2009. Thereafter, subject to nitric acid production volumes and catalyst performance, Sasol should realise around 600,000 CERs per annum. Sasol is pursuing an additional six CDM projects, with envisaged registration timelines up to 2013. Projects under development have the potential to generate an additional five million CERs per annum. Technologies involved include: N ₂ O abatement technology; natural gas fuel switching; flare gas recovery and gas turbine incorporation; flue gas methane recovery; and technology switch from aerobic to anaerobic water treatment processes.
Financials	
FirstRand	The company has a carbon trading desk to trade CO ₂ and support CDM projects that will generate emission credits.
Nedbank Group	Currently pursuing opportunities to monetise carbon credits for itself and its clients, both CERs and VERs.
Standard Bank Group	Standard Bank Group trades CERs and ERUs, and finances against them, in addition to EUAs. The company is actively considering involvement in other compliance-based markets.
Materials	
Anglo American	A CDM fuel-switch project is currently being validated through an audit process within Anglo Ferrous Metals. The project at Scaw's Union Junction site entails the conversion from producer gas to natural gas, and an associated reduction in CO ₂ emissions, qualifies as a retrospective CDM project. It utilises a methodology that allows CERs to be generated by replacing fossil fuel with cleaner generation. It is estimated that the project will deliver approximately 110,000 CERs.
Anglo Platinum	Developing a CDM project that intends to increase energy efficiency by converting from pneumatic to electric drilling. Once implemented it is estimated that emission reductions will average 58,356 metric tonnes CO ₂ /year. Should this project prove successful, it could be rolled out to the other group mines.
AngloGold Ashanti	Two CDM projects are at an early stage of being developed (no additional information provided).
ArcelorMittal SA	ArcelorMittal SA has registered emission reduction projects via the CDM route (no additional information provided).
BHP Billiton	Involved in CER origination as the buyer of the credits through CDM projects. The company's CDM projects are based in Brazil and India and cover sugar bagasse, fuel switching and industrial gases. The company has worked with customers in Europe to explore the potential to create bundled energy products (specifically coal bundled with CER units raised via CDM projects) to offer customers additional value by assisting them in meeting their EU ETS obligations.
Exxaro Resources	Conducting a feasibility study on co-generation for a CDM project to produce 200 MW of electricity from waste energy such as furnace off-gas and waste heat at its own and at other organisations' operations. Various CDM project opportunities being pursued at Namakwa Sands, KZN Sands, Beatrix and Exxaro Resources Char plant (involving internal combustion engines within the smelting facility to combust furnace off-gas and generate electricity); Exxaro Resources market coke plant (using a waste heat boiler to produce steam and generate electricity); a wind farm at Brand se Baai; and a solar farm at Lephalale and in the Northern Cape.
Gold Fields	Developed two methodologies: "Methodology for methane capture and utilisation or destruction in underground, hard rock, precious and base metal mines" and "Methane capture and destruction in non-hydrocarbon mining activities". The company is currently developing the Kloof Ice Chiller Project as a CDM project that will reduce energy consumption by using ice instead of water for chilling. Also currently investigating other CDM emission reduction opportunities, including the Ethos Project that involves reducing energy consumed by not hoisting the development waste generated.
Northam Platinum	Conducted a pre-feasibility analysis for a CDM solar project (relating to the Booyssendal project and the Northam Platinum mine extension).
Sappi	Initiated a CDM project at Tugela Mill (2007) converting a coal-fired boiler to one operating on biomass. The project is in the process of being audited. Planned for 55,000 CERs in the original submission (depends on how much bark is available to go into the boiler). The company will either sell the CERs when the market is favourable, or use them to offset operations elsewhere in the world.
Mondi	Mondi has implemented projects in Bulgaria (JI) and South Africa (CDM). Currently Mondi is investigating a project for Russia (JI).

Some Evidence of Preparing for Adaptation

The company responses on the risks and opportunities of climate change (Section 3) highlight increasing concerns relating to the potential physical impacts of climate change. In response to these concerns, more companies are beginning to develop appropriate strategies for adaptation. Following are some examples of the types of measures being taken by a cross-section of responding companies:

- *SABMiller* has undertaken various studies aimed at assessing and responding to the physical risks of climate risks issues, including research into the development of drought-resistant crops, the use of alternative crops, and the identification of new growing regions.
- *Anglo American* is undertaking a climate-change impact-assessment project with Imperial College in London that aims to identify the hazards posed by climate change to operations. Physical models of the climate system are being used to identify the likelihood of changes in temperature, extreme rainfall and drought in particular, that will enable the company to establish a risk inventory of its current and future operations around the world.
- In light of the anticipated impacts on health, *Massmart Holdings* is seeking to extend primary health care cover to a broader staff base.
- A not public company in the construction industry recognises the need to provide for the increased frequency of extreme weather events in their design and construction activities, including as regards the choice of location, the nature of building materials and the design of structures.
- Recognising the potential impact for agricultural suppliers, *Pick n Pay Holdings* has started working with selected suppliers to raise their awareness about these risks. The company anticipates offering products and services to suppliers to improve the resilience of its food supply chain in the face of physical changes.

On the basis of the CDP responses, it would appear that local companies

are generally insufficiently advanced in their adaptation initiatives. While this may in part be a result of the nature of the CDP questionnaire, which focuses predominantly on assessing companies' climate mitigation activities, it would not be surprising for the companies to be less advanced in the development of their adaptation response measures, a characteristic that is generally evident amongst companies globally. It is anticipated, however, that as the impacts of climate change become more evident, there will be a greater shift towards the development and implementation of adaptation activities, which certainly should form an important component of a coordinated climate response strategy.

Integrating Climate Change in Governance Practices

Effective implementation of a climate response strategy is ultimately dependent on its integration within the company's broader internal and external governance activities. Among those companies regarded as global leaders in climate change, the following climate change governance practices have emerged:³²

- **Top commitment** – The CEO is visible in expressing commitment to the issue, speaking out publicly and frankly on climate policy, risks and opportunities, and clearly defining the company's vision. (Due to elements of its subjectivity this issue is not specifically tracked in the CDP questionnaire).
- **Board oversight** – The board has formal oversight responsibility for climate change issues, conducts periodic reviews of its climate response strategies and regularly monitors progress against its agreed performance targets. (While there is a specific CDP question on board responsibility, it is difficult from the responses to assess the extent and quality of the board engagement on these issues).
- **Management responsibilities and incentives** – Executive officers have been formally assigned responsibility to monitor and report on climate change issues and to coordinate response strategies, and their compensation is linked

Companies at the leading edge of tackling climate change are embedding environmental considerations into their capital planning, employee recruitment, and incentive structures, and making this a core part of their reputation and branding strategies. Successful companies are seeing gains in a resource and supply-chain efficiency, employee retention, customer loyalty and bottom-line returns.

to the attainment of environmental goals and GHG targets. (The issue of executive incentives is specifically included in the CDP questionnaire).

- **Transparent disclosure** – The company regularly provides a comprehensive and transparent account of its climate change strategy and its performance against defined performance targets. (The CDP specifically queries the extent to which companies report annually on their climate change performance).
- **Strategic partnerships** – Leading companies have developed and implemented collaborative partnerships with their corporate peers and/or with external critics, and they engage effectively in national and global policy development processes. (The CDP specifically asks companies to report on their partnership activities).

Increase in Executive Responsibility and Accountability on Climate Change

The responses of the participating companies suggest that climate change issues are increasingly being integrated within companies' broader governance activities.

³² A useful review of climate change governance is provided in the series of reports published by Ceres (www.ceres.org).

- Fifty-four of the responding companies (86%) report having a Board Committee or executive body with responsibility for climate change. While this would suggest an encouraging level of executive engagement on climate issues, it is not possible from this response to meaningfully assess the nature and extent of the executive bodies' engagement specifically on climate change issues.
- Nineteen companies report that they provide incentives of some sort to individual management regarding their contribution towards the achievement of climate change related goals and objectives (e.g. *Nedbank Group*).
- This year, fifty companies (79% of the respondents) state that they have included climate change issues in their annual financial reports, as compared with 34 (64%) last year. The number of companies that have included climate change performance issues in an annual sustainability report remains unchanged at 45 companies.

Greater Engagement in Public Policy and Partnerships

An effective response to climate change – both as regards mitigation and adaptation activities – will require companies taking on a more collaborative approach. This could involve partnership initiatives within the corporate sector generally (for example along a company's value chain or through business representative organisations such as the NBI), as well as partnerships between companies and NGOs (such as WWF).

- While most of the responding companies describe some form of existing partnership arrangement, many of these are of a very general nature, without reflecting the necessary depth of exchange, mutual trust and learning – or the specific focus on climate change – that ideally should accompany such an initiative.
- There is currently limited evidence of ambitious partnership engagements specifically on climate change, either within the corporate sector or between companies and NGOs. This contrasts with the experience in some of the developed countries

where there are interesting examples of both broad forms of partnerships and related collaborative initiatives – such as the Carbon Trust, the Corporate Leaders Group on Climate Change or the WWF's Climate Savers initiative. This would suggest that there is some valuable potential for developing such opportunities further in South Africa, with the aim of ensuring more efficient coordination of response measures and encouraging greater levels of innovation.

- Not surprisingly – given the context of the imminent Copenhagen discussions and recent policy statements by the South African government – there appears to be a greater level of awareness and engagement by companies in both national and international policy development processes.

The CDP's Carbon Disclosure Leadership Index

The CDLI: Recognising Disclosure Rather than Performance

The Carbon Disclosure Leadership Index (CDLI) has been developed to identify companies with outstanding disclosure practices. This assessment is based on the quality of disclosure by companies in their response to the CDP questionnaire, and is not necessarily a reflection of the quality of the company's performance in addressing climate change issues. Companies were eligible for inclusion in the CDLI if they responded online using the Online Response System (ORS), made their responses publicly available, and submitted their responses before the agreed deadline. For every CDP question, companies received a score depending on the availability and depth of their response. A full description of how the scores were allocated is provided in the CDLI methodology, included in Appendix 2 of the full online report.

In considering the top scoring CDLI companies, it is important to bear in mind that the CDLI:

- is based entirely on the disclosure information provided in the company's CDP response;

“The Group Environmental Forum has also established a working committee focused on the measurement and management of our carbon footprint and the tracking of our progress against our intensity reduction targets set in respect of electricity, paper and water consumption; travel, waste and recycling. The aforementioned intensity reduction targets have been included in the 2009 performance scorecards in order to ensure that the appropriate behaviour is measured and rewarded so as to minimise our risk of not mitigating our direct carbon emissions.”
Nedbank Group

- does not consider other efforts undertaken by companies to provide carbon or wider sustainability disclosure such as corporate responsibility reporting, environmental statements in annual reports, or through meetings and engagement with stakeholders and policymakers; and
- is not a complete metric of a company's performance in relation to climate change management, as it does not, for example, make any judgement over levels of emissions, emission reduction achievements, or carbon intensity.

Although a section on performance scores was included in this year's CDLI methodology, it was not taken into account in compiling the CDLI for this year. However, performance scores are likely to become integrated into CDLI scoring in the near future. (A brief review on the implications and outcomes of this year's performance assessment is provided later).

Recognising Leadership in Disclosure in South Africa

The top 16³³ South African companies on the Carbon Disclosure Leadership Index for 2009 are presented in Table 20. In line with the CDP's transition to a 'parity of sectors' approach for 2009, this year the CDLI makes no distinction between companies in carbon-intensive or non-carbon-intensive sectors.³⁴ This transition means that some companies in non-carbon-intensive sectors may have received a lower overall score (in absolute terms) than they did in CDP6 (2008), notwithstanding that the standard of their response may have improved or remained the same.³⁵ It is important to note, however, that although absolute scores may differ, the transition should have little effect on companies' relative performance in their sector.

This year the top 16 companies constituted an evident cluster of leaders, with a clear break between their scores and the remaining responding companies; the number of companies included in the CDLI may change year-on-year depending on the nature of the responses.

The following observations can be made regarding the outcome of this year's CDLI:

- This year *Nedbank Group* qualified as the overall leader with 90 points, followed by *The Bidvest Group* and *Woolworths Holdings* (83) and *BHP Billiton* (82). This shows some consistency with last year's performance where *Woolworths Holdings* ranked top in the low-carbon category and *BHP Billiton* qualified as the overall leader in the carbon-intensive category. Last year *Nedbank Group* ranked fourth in the low-carbon sector, while *The Bidvest Group* ranked tenth in the carbon-intensive sector.
- In general the results are comparable with CDP6 (2008), reflecting a similar breakdown in sectoral representation and many of the same companies appearing. As with previous years, the best performers in terms of disclosure tend to come from the Materials and Energy sector (eight of the top 16), followed by the Financial sector (four of the top 10).

New entrants this year amongst the top 16 disclosing companies include: *Sappi*, *Old Mutual*, *Sanlam*, *Santam*, *Anglo Platinum* and *Netcare*. The remaining ten companies were all in the CDP6 (2008) CDLI and three of them (*BHP Billiton*, *Sasol* and *Nedbank Group*) also appeared in the CDP5 (2007) CDLI, which was from a smaller base (the JSE Top 40 companies). *Old Mutual* and *Anglo Platinum*, both of whom qualified for this year's CDLI but not for CDP6 (2008), were also rated in the top 10 in the 2007 survey.

Anglo Platinum and *Sasol* – whose primary listings are in South Africa, but who qualify for the Global 500 – were both rated in the five highest scoring companies from developing countries in the Global 500's CDLI, the other three being from South Korea, Brazil and Taiwan.

It is important to treat the CDLI ranking with some caution when seeking to assess companies' activities on climate change. The aim of the CDLI is to recognise those companies that are frank and transparent in their disclosure, using a scoring methodology that is objective and replicable. The focus of the index is thus specifically on rating a company's disclosure rather than its overall performance. Typically, one might expect a positive relationship between the quality of a company's disclosure and its performance: the more a company monitors, manages and reports on its impact, the better its understanding of the risks and opportunities and the more likely it will take action. However, good disclosure on its own – and a high score on the CDLI – cannot always be taken as a proxy for good performance.

Table 20: Carbon Disclosure Leadership Index: JSE 100

Rank	Company	Sector	Score
1	Nedbank Group	Financial	90
2	The Bidvest Group	Industrials	83
2	Woolworths Holdings	Consumer	83
4	BHP Billiton	Materials	82
5	Gold Fields	Materials	79
5	Sappi	Materials	79
7	AngloGold Ashanti	Materials	75
7	Santam	Financial	75
9	Dimension Data Holdings	IT & Telecomms	74
9	Old Mutual	Financial	74
9	Sanlam	Financial	74
12	Anglo Platinum	Materials	73
12	Exxaro Resources	Materials	73
14	Northam Platinum	Materials	72
14	Netcare	Health Care	72
16	Sasol	Energy	71

Note: Incite Sustainability undertook the scoring for the South African CDLI (2009) based on the CDLI scoring methodology 2009 (www.cdproject.net/carbon-disclosure-leadership-index.asp) and on additional guidance provided by the CDP in the scoring of the Global 500 (collectively referred to as the "methodology"). KPMG provided a third party review on the application of the methodology. This work included assessing a sample of responses against the methodology and reviewing the integrity of the allocated score. Any deviations from the methodology were raised and appropriately resolved. On this basis, Incite Sustainability and the CDP are confident that the methodology has been consistently applied.³⁶

³³ The top 16 companies all scored higher than 70 points, which was used as the cut-off point for this year's index.

³⁴ The rationale behind the transition is that, as the wide-ranging implications of climate change become more evident for companies and all sectors develop a response, there is a less clear distinction between disclosure expectations of companies in different sectors.

³⁵ This is because the total available score against which the companies in non-carbon-intensive sectors have been assessed in CDP 2009 is greater than the total available score available for 'comprehensive' questions in CDP6 (2008).

³⁶ In some instances there were minor deviations between the scoring by KPMG of some companies undertaken as part of the South African CDLI compared to the scoring undertaken for these same companies as part of the Global 500 CDLI. In such instances, the scoring was not changed as the CDP Global 500 report had already been published.

There are various reasons why the CDLI scores should be read with caution. For example:

- companies receive a CDLI point simply for disclosing whether or not they have a GHG emission or energy reduction plan in place, regardless of the fact that one company may have a plan in place while the other company does not;
- while some of the participating companies provided valuable evidence of their performance in the additional information and attachment sections of the responses, for practical reasons – and in accordance with the scoring methodology – these attachments could not be awarded disclosure points; and
- in some instances it appeared that companies demonstrated a very good understanding of the scoring methodology and that they might be completing the questionnaire with the express intention of scoring highly on the index.

Recognising that the CDLI is not necessarily a direct indication of good performance has prompted the CDP to this year pilot a performance scoring methodology. The outcomes of this pilot test are briefly reviewed below.

CDP Performance Scores – A Pilot Exercise

Introduction to the performance scoring system

The CDP's 2009 CDLI scoring methodology included, for the first time and on a pilot basis, separate scores for performance. This is distinct from the CDP Questionnaire's Section 3, which queries respondents on how they track their performance to stated goals and objectives. Whereas historically scores have reflected the standard of **disclosure**, these performance scores seek to assess the nature of a company's climate mitigation and adaptation **actions**, with the aim of providing investors with greater insight into the extent to which companies are preparing to transition to, and compete in, a low carbon economy.

Performance points were awarded where respondents demonstrated that they had taken concrete action in response to their perceived risks or opportunities, and with the aim of reducing their impacts. Examples include implementing regulatory monitoring teams, introducing relevant new products or services, having GHG emissions targets in place (irrespective of the appropriateness or ambition of the targets), and demonstrating effective engagement with policy-makers and stakeholders. A significant element of the performance scoring relates to a company's emissions intensity (measured as total Scope 1 & 2 emissions per unit of financial turnover); this understandably has a significant impact on companies in the Materials sector.³⁷ The methodology for the pilot phase of the performance scoring is explained in more detail in Appendix 2 of the full online report.

Only those companies eligible for the CDLI were scored using the performance score methodology. Performance scores are only awarded when the respondent provides the underlying disclosure; no additional research, or analysis was undertaken independently of the company responses. For this reason there is thus, at least in part, an inherent link between performance scores and disclosure scores.

The CDP Performance Scores for South African Companies

Table 21 presents the outcomes of this trial performance scoring initiative for the South African respondents. As this is a pilot initiative and still under development, the actual scores have not been provided. To facilitate comparison with the CDLI, the table has identified the top 16 companies³⁸ in terms of their performance scores. Due to the preliminary nature of the performance scoring system, the companies are not ranked, but are simply listed by sector and in alphabetical order.

Six companies are included in the top 16 performance ranking that didn't qualify for the CDLI (*Massmart Holdings*, *Pick n Pay Holdings*, *SABMiller*, *Medi-Clinic Corporation*, *Anglo American* and *Mondi*), while

Table 21: Top 16 companies in terms of CDP pilot performance score (by sector and alphabetically)

Company	Sector
Massmart Holdings	Consumer
Pick n Pay Holdings	Consumer
SABMiller	Consumer
Woolworths Holdings	Consumer
Sasol	Energy
Nedbank Group	Financials
Old Mutual	Financials
Santam	Financials
Medi-Clinic Corporation	Health Care
Netcare	Health Care
Dimension Data Holdings	IT & Telecomms
Anglo American	Materials
Anglo Platinum	Materials
BHP Billiton	Materials
Exxaro Resources	Materials
Gold Fields	Materials
Mondi	Materials
Sappi	Materials

four companies that are included in the CDLI didn't qualify for the top 16 performance ranking (*The Bidvest Group*, *AngloGold Ashanti*, *Sanlam* and *Northam Platinum*). Notwithstanding the provision that is made in the performance scoring for a company's reported emissions intensity (which impacted negatively on the Materials sector), the nature of the sectoral breakdown remains comparable across both indices.

It is important to note that these performance scores have not impacted on this year's CDLI scoring. It is anticipated, however, that in future a company's performance score may be a valuable additional component of the report analysis and the CDLI league table. The extent to which performance scoring is integrated into the CDLI score, and the timeline for doing so, is yet to be determined; stakeholders will be consulted in this area.

³⁷ Financial companies were not awarded points based on their financial emissions intensity, as it was felt that a meaningful and comparable figure for company turnover in this sector could not be readily identified as required in the performance points methodology; their total available points were thus adjusted accordingly.

³⁸ As several companies got the same performance score, the top 16 scores includes 18 companies.

CASE STUDY

Eskom: A Key Player in South Africa's Mitigation Efforts³⁹

Eskom, South Africa's parastatal electricity utility, is a significant contributor to South Africa's GHG emissions and a crucial player in the national climate change debate; its decisions and activities have a profound bearing on national and corporate efforts to reduce emissions. Although not a listed company, and thus not formally within the scope of the CDP, it has chosen to participate voluntarily in the South African CDP for each of the last three years. It was one of the first companies in South Africa to report publicly on its annual environmental performance (including its GHG emissions), with its first annual environmental report published more than twelve years ago.

Decline in Eskom's Absolute GHG Emissions

During the 2009 reporting period, Eskom emitted 221,7 metric tonnes of CO₂-e, a reduction of two million metric tonnes on its 2008 emissions (223,6 metric tonnes). Despite the decrease in its absolute emissions, Eskom's relative emissions increased from 1,00kg CO₂-e/kWh electricity sold to 1,03kg CO₂-e/kWh.⁴⁰ The decline in absolute emissions is due to a reduction in electricity demand, while the increase in relative emissions is a result of a decline in overall thermal efficiency.

Eskom does not distinguish between direct and indirect emissions in its disclosure, nor does it distinguish on the basis of countries of operation.⁴¹ Emissions data is calculated based on quantities of coal used. The data is internally audited and all information that is included in their annual report is externally audited. Other than for the past year, Eskom's emissions have been climbing over the past decade, following the growth in the South African economy.

Eskom's Climate Change Strategy and Investment

Eskom's commitment to reduce its GHG emissions is embodied in the implementation of its climate change strategy, which is summarised in the following six-point plan:

- Diversification of the generation mix to lower carbon-emitting technologies
- Energy efficiency measures to reduce demand and GHG and other emissions
- Adaptation to the negative impacts of climate change
- Innovation through research, demonstration and development
- Investment through carbon market mechanisms
- Progress through advocacy, partnerships and collaboration

Implementation of this strategy, which includes decision-making around more expensive lower carbon-emitting technologies, has been hampered by the global financial crisis, as well as by Eskom's own particular financial challenges. Although Eskom believes this to be a short-term hurdle, this has constrained their efforts in fast tracking the research and development of possible base-load options. The global economic slowdown has also impacted the demand-side management (DSM) programme as the level of national funding for DSM has been reduced compared to last year.

In terms of future demand-side and climate mitigation initiatives, Eskom reports "having made significant decisions in this regard, given the long-term nature of the electricity business. These include:

- improving thermal efficiency requirements for new coal-fired plant (the proposed thermal efficiencies of both Medupi and Kusile place them in the category of supercritical coal-fired plant);
- including carbon capture readiness in the design of Kusile;

- participating in the national initiative to develop a carbon storage atlas for the country;
- developing a carbon capture and storage strategy;
- deciding to invest in an underground coal gasification pilot plant; and
- deciding to invest in a 100MW wind generating facility."

Their stated intent is to reduce their relative CO₂ emissions footprint (Mt CO₂/MWh) until 2025, and thereafter to continually reduce their absolute emissions "in support of national and global targets." Key to achieving this objective are their planned activities relating to diversifying the energy mix, and promoting energy efficiency.

Diversifying the energy mix

To support their emissions reduction objectives, Eskom reports that they are developing technology roadmaps with leading research organisations to determine when lower carbon-emitting technologies will become commercially available. They have modelled a number of scenarios to assess their future emission profiles and to evaluate the potential contribution that near-commercial lower carbon-emitting technologies could make to their emissions reduction objectives. The evaluation of these options to provide the required baseload capacity includes an assessment of the risks, challenges and opportunities to fast-track these options to a point where they can be considered to be viable. Examples include underground coal gasification, concentrating solar power and hydro imports. In addition to reviewing these options – which they believe, together with

³⁹ The text of this case study is based largely on a preliminary draft of Eskom's 2009 sustainable development report (which is integrated within their annual report). The case study does not include an independent assessment of, or commentary on, Eskom's climate change activities.

⁴⁰ Calculated annual figure is based on coal characteristics and coal fired power station design parameters (excluding liquid fuels).

⁴¹ Although Eskom's generating capacity is all within South Africa, it imports and exports electricity from and to neighbouring states (currently Eskom imports more than it exports); this has implications for Scope 3 emissions reporting.

nuclear technologies, could meet baseload needs – Eskom is also taking investment decisions on wind generation options to provide additional electricity.

While expressing their commitment to the principle of not excluding any technology upfront, and to assessing all options to reduce their emissions, Eskom also underlines the need to acknowledge “the country’s abundance of coal reserves and the need to balance emissions reductions with the affordability of electricity.” In this context they have developed a clean coal technology roadmap that will be used to determine their technical options to meet the country’s future electricity needs.

Promoting energy efficiency

A second important thrust for reducing their carbon footprint – and assisting Eskom to address their current constraints on energy supply – is through their focused energy efficiency activities.

Eskom’s (DSM) initiative seeks to achieve a reduction of 3 000 MW

by March 2011 and a further 5 000 MW by March 2026. Eskom reports that their DSM programme achieved savings of 916 MW in the 2009 reporting period, increasing the cumulative savings since 2003 to 1 999 MW.

Initially, Eskom’s DSM programme focused on realising energy and average demand savings during the evening weekday peak period (18:00 to 20:00) via energy services company projects in the industrial and commercial sectors, and hot water load management within municipal environments. The focus has since expanded to include mass programme rollouts such as promoting compact fluorescent lamps (CFLs), solar water heaters and the efficiency of electric motors and pumps. This has been complemented recently by the government’s power conservation programme (PCP), which includes an energy conservation scheme that seeks to reduce energy consumption by 10%.

Eskom also reports on various internal energy savings initiatives,

including: incorporating energy efficiency criteria into board and exco investment and procurement guidelines, implementing internal communication and awareness-raising programmes, and undertaking technically feasible and economically viable efficiency improvements within the organisation.

Research and Development, Demonstration and Partnerships

For the 2009 financial year, Eskom reports research expenditure of R207 million (a 31% increase on the budgeted amount), and has set a budget of R221 million for 2010. Planned capital expenditure for the construction of demonstration projects is reported at R647 million, most of which is to be invested in projects on concentrating solar power and underground coal gasification. The research and demonstration projects specifically include an increased focus on climate change, renewable energy and energy efficiency initiatives.

CASE STUDY

The South African Post Office Promises to Deliver on Climate Change⁴²

This year the South African Post Office (SAPO) provided a voluntary submission to the CDP outlining some of their activities relating to climate change mitigation. Although not in the form of a structured response to the CDP questionnaire, it nevertheless addresses some of the common CDP elements, and it is in principle encouraging to see the voluntary participation of important parastatals such as the Post Office in the CDP initiative.

The SAPO board and executive committee have recently approved an environmental policy and subsequent

environmental strategy to drive their environmental initiatives. One of the pillars of their strategy is a commitment to reducing their carbon footprint. To meet this commitment they have identified a number of initiatives for the 2009-2012 period, including:

- measuring their carbon emissions by 2009;
- reducing their carbon emissions by 4.9% by 2012 on 2009 levels, and offsetting an additional 5% of emissions over the same three-year period;
- reducing electricity consumption by 5.9% and water consumption by 10.9% by 2012;
- reducing the fuel usage of the SAPO fleet by 4.9% by 2012;
- reducing total paper consumption by 7.3% by 2012; and
- participating annually in the Carbon Disclosure Project

Various initiatives have already been implemented that have resulted in carbon emissions being reduced. These include:

- introducing “hybrid mail” in four sites (Durmail, Tshwane Mail, Capemail and Witspos) with the aim of reducing travelling between the major centres by transmitting data electronically, printing at the nearest hybrid mail centre and delivering locally;
- establishing a National Control Centre, a video- and tele-conferencing facility that has significantly reduced travel needs, and provided a pay-back within six months;
- improving efficiencies in their transport and logistics activities; and
- commissioning a pilot study to determine their consumption of energy.

⁴² This text is based on a brief submission by SAPO to the NBI. The case study does not include an independent assessment of, or commentary on, SAPO’s climate change activities.

CASE STUDY

South Africa's Fruit and Wine Exporters Collaborate on Climate Change⁴³

Although most of the companies that make up the South African fruit and wine sector do not fall within the remit of the South African CDP (the JSE 100), they are nevertheless important players within the South African economy, and are particularly susceptible to both the physical and market impacts of climate change. This brief case study outlines a recently started three-year project aimed at establishing a credible GHG accounting system and climate response strategy within the South African fruit and wine industry. This case study is included with the aim of highlighting the possibilities associated with a proactive industry-wide response strategy.

Agriculture: High Climate Vulnerability and Contribution

Agricultural exports comprise 8% of South Africa's total exports, generating more than R26 billion in foreign exchange earnings; the sector accounts for nearly one million jobs (about 7.5% of the country's total employment) and contributed about 15% to South Africa's GDP when including its links with the food and beverage manufacturing industries. Ensuring long-term growth and employment opportunities in the sector is dependent on increasing South Africa's share of the global market, particularly in fruit and wine, the sector's largest exports.

The agricultural sector is particularly vulnerable to both the direct and indirect impacts of climate change, feeling the effects of changes in rainfall patterns, water distribution and ambient temperature (all of which are deemed to have potentially profound impacts in certain regions of South Africa), as well as shifts in consumer behaviour and market

demand. The United Kingdom is South Africa's most important export market for fruit and wine, with 30% of the country's wine exports and approximately 20% of local fresh fruit exports going to Britain. Retailers in the UK have begun to integrate climate considerations into their supply chain management practices; in January last year, for example, the UK's largest retailer (Tesco) announced that it would label its products for the amount of carbon emissions produced in the value chain in much the same way as it labels fat content or calories of their foodstuffs.

Not only is the sector vulnerable, but it is also an important contributor to greenhouse gas emissions, with significant impacts associated with the conversion of forested or virgin land to agriculture, the release of nitrous oxides from over fertilised soils, and the use of fossil fuels associated with the production and distribution of product. As a result of its contribution, there is growing focus on the carbon footprint of agricultural produce, particularly among environmentally aware consumers and retailers in developed countries.

Developing an Industry-wide Response to Climate Change

In the context of changing consumer expectations and the increasingly visible impacts of climate change, the local fruit and wine industry has committed to developing a comprehensive industry-wide response strategy that includes the following elements:

- **GHG Inventory** – To ensure GHG assessments that are accurate and consistent, the local industry has collaborated with industry bodies from the USA, New Zealand and Australia to develop a standardised industry carbon footprinting protocol that is globally recognised, accredited and utilised by all agricultural export sectors. This is based on the GHG Protocol and

includes elements from the recently released PAS 2050 standard, which was developed by the UK Carbon Trust and the British Standards Institute to measure the embodied GHG emissions of goods and services. The freely available web-based tool will allow individual farmers to calculate their carbon footprint through their supply chain.

- **Climate Change Strategy and Implementation Plan** – Using the data collected from the carbon calculator tool, the industry proposes to develop a sector-wide strategic framework that will provide industry guidelines, and include clear emission reduction targets and mitigation and adaptation opportunities based on an assessment of the threats and opportunities posed by climate change. It will have a strong research and development focus and will be developed to ensure sufficient flexibility to allow accessibility by other industries with similar processes (such as tea and flower exporters).

This initiative is being funded by the Regional Standards Program of the ComMark Trust, with support from the UK's Department for International Development that seeks to assist SADC countries and firms meet international food quality and safety standards for agri-business products. Other backers include the Post Harvest Innovation fund (Department of Science and Technology), the National Agricultural Marketing Council and the South African wine and fresh fruit industry itself.

⁴³ This case study is based on the report *Confronting Climate Change: A South Africa Fruit & Wine Initiative* (February 2009). The case study does not include an independent assessment of, or commentary on, the nature of the climate change activities in this sector.

5

Concluding Commentary

This final chapter provides some closing observations, on the nature of the corporate responses to the 2009 CDP questionnaire and on the general contribution of the CDP process.

In reviewing the nature of this year's CDP responses, and briefly assessing the impact and contribution of the CDP process, it is important to consider the multiple functions that the CDP seeks to play:

- firstly, in raising awareness and motivation amongst companies on climate change issues;
- secondly, in striving to provide an accurate assessment of South Africa's level of preparedness in responding to climate issues, with the aim thus of informing an appropriate policy response; and
- thirdly, in highlighting the material impact of climate change on business value and providing investors with relevant information to assist them to make more informed investment decisions.

These first two objectives set up a possible tension in the nature of the analysis that is undertaken in this report. This tension is particularly acute given the different stages of development and awareness on climate change issues across the South African corporate sector. In meeting the first objective – raising the level of engagement of companies on climate change issues – it is important that due credit and exposure is given to companies for their effort and performance. In so doing it is hoped that this will encourage at least initial participation by companies, and that this will prove to be the start of a longer process of more informed and active engagement by them. By contrast, the second objective requires a frank and challenging assessment of the nature of the corporate response; this is an approach that specifically focuses on identifying and highlighting possible shortcomings in the corporate

responses, but that thus runs the risk of deterring companies from engaging in the process.

In undertaking the analysis for this year's report we have sought to find a balance between these two objectives, identifying the actions that are being taken by companies on climate issues, and further encouraging them in these activities, while at the same time striving to not shy away from highlighting the nature and extent of the remaining challenge. The hope is that in so doing we contribute to the third objective by raising awareness of the the potential material impact of climate change on investment portfolios, thereby mobilising investors to engage more actively with companies on this issue. Highlighting the performance of leading companies will hopefully raise the bar and act as a catalyst for investors to exert pressure on those companies that are slower to respond.

The CDP 2009 Responses: Some significant improvements, but quality still variable

As was the case with the CDP6 (2008) process, the level and quality of disclosure varies significantly between companies and sectors. While there has been an encouraging increase both in the number of companies that are responding and in the quality of some of the disclosure, there are still many submissions that lack sufficient company-specific insight into the risks and opportunities of climate change, that fail to adequately describe their climate-related activities, or that continue to have significant gaps in their emissions accounting. While there has been a general improvement in disclosure across most sectors, there are certain sectors that continue to be disappointing in their lack of engagement on these issues.

At a general level there is still some evidence of a compliance-driven, box-ticking approach to reporting. In several instances it is evident that

commitments, activities, projects and targets that were identified in their CDP6 (2008) submissions, are not referred to or followed up on in CDP 2009. Whether this is due to a change in the person responsible for collating the CDP submission online, and thus filtering relevant information, or an actual non-delivery on the part of the company, is not clear. Investors with specific company interests are thus encouraged to investigate company year-on-year responses (available on the CDP website) in more detail.

A notable number of submissions revealed inconsistencies, where information in one section was clearly not in agreement with claims and figures in another section. It is possible that this may be due to data inputting errors, a lack of a thorough or integrated submission, or perhaps, that the questions are not sufficiently understood. Fortunately this was more evident amongst first respondents, with most of the seasoned participants displaying evident improvements in the quality and depth of their answers.

Throughout the engagement process, it was evident that a proportion of companies still feel ill-equipped internally to complete the questionnaire, or that they do not view climate change as core to their business and thus rely on external consultants to assist with their submissions. While consultants can play a valuable role in providing specialist knowledge and guidance into the organisation, the potential disadvantage is that a reliance on their input perpetuates a lack of resources (human, skills and systems) within the organisation, thus undermining the overall resilience of the organisation itself. Undue reliance on consultants gives the impression that climate change is seen in practice as little more than a "peripheral external issue". Given the nature of the climate challenge, we believe that there is a need for a new level of strategic focus from companies with respect to climate change and

sustainable development, particularly in the mid-range of the JSE 100 companies.

Looking to future responses

Looking to the future engagement of companies in this process there are various features that we would wish to see coming across more clearly in the company responses, as evidence both of greater strategic internalisation by the company of climate change issues, as well as of a higher level of ambition and engagement that is appropriate to the challenge. These features include:

- greater levels of specificity in the companies' disclosure on the risks and opportunities they face, on the nature of their associated response actions, and on the extent of the potential financial implications;
- more ambitious GHG reduction targets and plans in line with what is seen as being required by science;
- greater evidence of energy and GHG emissions forecasting activities;

- improved engagement with suppliers around managing their climate change risks and opportunities, building for example on the positive experience of the CDP's supply chain initiative;
- more evidence of sector-wide collaborative initiatives (similar to that adopted for example by the Wine and Fruit Industry – see case study) aimed at sharing expertise and pooling resources; and
- more information on company-level adaptation plans and initiatives.

The CDP information request is issued on behalf of investors. It is hoped that this report will contribute to more informed investment decision-making that utilises the analysis of company responses not only to lead to better long-term financial returns, but also to align the objectives of institutional investors with those of society at large.

Closing comment by the National Business Initiative

While this year's report has clearly demonstrated the progress made by leading companies in acknowledging the significance of climate change in terms of its environmental, economic and social impacts, there is still evidence that companies are at different levels of awareness and engagement with what climate change means for their business. This can only be fully appreciated when the issue is considered against the backdrop of international and national positions and is viewed through an integrated business strategy that takes cognisance of climate change as it relates to issues such as improved efficiency, changing consumption patterns, new business opportunities and models, appropriate skills and long-term projections.

It is also clear that data collection and integrity is what holds some

companies back in disclosing publicly and accurately; focused attention will thus need to be given to this area as the government moves towards greenhouse gas (GHG) measurement and reduction plans.

Despite these challenges the current report demonstrates the commitment by big corporates to address climate change. Business remains steadfast in its commitment to address the challenge of climate change notwithstanding the current economic recession that threatens efforts to mitigate and adapt to climate change. Improvement in reporting on setting GHG targets and adaptation initiatives, demonstrates that business is increasingly gaining a deeper understanding of the gravity of climate change. With the imminent mandatory disclosure of GHG

emissions in South Africa, the voluntary reporting of emissions by the leading companies gives these companies the edge in setting targets that will contribute to meeting the "required by science" scenario proposed by the Long Term Mitigation Scenarios Study.

Finally, while this year's report piloted a performance assessment of companies, companies who demonstrated a correlation between disclosure and performance are to be commended. It is hoped that as companies become more seasoned in collecting and analysing their data, they will also increasingly put measures in place to reduce their emissions through strategic interventions, target setting and measurable and verifiable action.

Acronyms

CDLI	Carbon Disclosure Leadership Index
CDM	Clean Development Mechanism
CDP	Carbon Disclosure Project
CDSB	Climate Disclosure Standards Board
CEO	Chief Executive Officer
CER	Certified Emission Reductions
CFL	Compact fluorescent lamps
CMP	Carbon Management Plan
CO₂-e	Carbon dioxide equivalent
COP	Conference of the Parties
DSM	Demand-side management
EBITDA	Earnings before interest, taxes, depreciation and amortization
EEA	Energy Efficiency Accord
ERU	Emission Reduction Unit
ESG	Environmental, Social and Governance
ETF	Exchange-traded fund
EUA	European Union Allowance
EU ETS	European Union Emissions Trading Scheme
G8	Group of Eight
G20	Group of Twenty Finance Ministers and Central Bank Governors
GDP	Gross Domestic Product
GHG	Greenhouse gas
ICT	Information and communications technology
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organisation for Standardisation
JI	Joint Implementation
JSE	Johannesburg Stock Exchange
JV	Joint Venture
KW	Kilowatt
KWh	Kilowatt Hour
LTMS	Long Term Mitigation Scenarios
MRV	Measured, Reported & Verified
Mt	Megatonne
MW	Megawatt
MWh	Megawatt Hour
NBI	National Business Initiative
NGO	Non-governmental organisation
ORS	Online Response System
PCP	Power Conservation Programme
PGM	Platinum Group Metal
PRI	Principles for Responsible Investment
REFIT	Renewable Energy Feed-in Tariff
SADC	South African Development Community
SAPO	South African Post Office
t	Metric Tonnes
UNFCCC	United Nations Framework Convention on Climate Change
VER	Voluntary Emission Reductions
WBCSD	World Business Council for Sustainable Development
WWF	World Wide Fund for Nature

Lead Partner



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We also acknowledge the important role played by Incite Sustainability in the analysis and writing of this report. Incite Sustainability is a South African consultancy that provides strategy and implementation advice on sustainability policy and practice to the private and public sectors.

Finally, a special note of thanks goes to those JSE 100 companies that responded to the 2009 questionnaire, as well as our various independent contributors to the report. We are confident that it will fulfill its main purpose of supporting investors in their decision-making processes, but also that it will provide valuable information for a variety of initiatives in the fields of energy and climate change.

For further information on how you may become involved in the NBI's key initiatives, please visit our website (www.nbi.org.za) or contact Valerie Geen on geen.valerie@nbi.org.za.

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